MicroDesign3

REFERENCE MANUAL

FOR THE AMSTRAD PCW SERIES COMPUTERS

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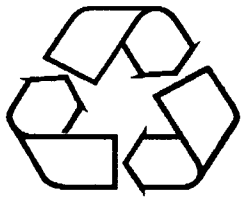

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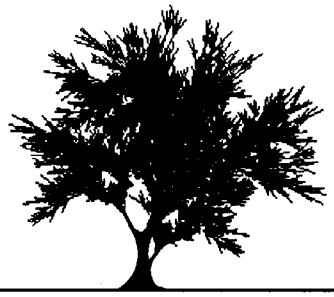

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MICRODESIGN3 USER REFERENCE MANUAL

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INTRODUCTION: WHAT IS MICRODESIGN3?

Introduction

MicroDesign3 (or "MD3") is a Page Processor: it combines the functions of Graphic Design and Desktop Publishing to produce a high-resolution page of text and graphics on a dot-matrix, inkjet or laser printer. The program features text editing, typesetting, full page-layout facilities, comprehensive graphics creation and disc management. The program can import text stored in word-processor files, and files of bit-image graphics in a number of different file formats: this means that pages can be constructed using words and pictures which can be created in MicroDesign3 itself, or in conjunction with other programs.

MicroDesign3 is supplied with two separate manuals: this **Reference** Manual, and the **Tutorial Cookbook**. The Cookbook is designed as a sequence, and begins with the simplest beginner's tutorial, so that you start at the beginning of the cookbook and work through to the end. This Reference manual contains detailed explanations of all the features in MD3, and is intended to be used rather like a dictionary: if you want more information about some part of the program, look it up in the index to this manual.

MicroDesign2 Users

If you bought MD3 as an upgrade from MD2, you will not have a tutorial manual or disc. The tutorial material is available to MD3 upgrade purchasers separately: contact Creative Technology for details.

START HERE

Start Here

MAKING A WORKING PROGRAM DISC

The first job is to make a Working Copy of the MicroDesign3 program. Like MicroDesign2, the MD3 Master Program disc is copy-protected: this means that you cannot copy or verify using the normal LocoScript or Diskkit programs. It can only be copied using a program called MD3MAKE, which is on the disc. You must have a spare disc handy, to use as your Working Disc: it does not need to be formatted, but **any data on it will be destroyed during the copying process.**

Copyright Warning

PLEASE NOTE THAT THE WORKING DISC YOU MAKE WILL BE COPY-PROTECTED LIKE THE MASTER DISC, and cannot be copied or verified. We allow you, as a legitimate user, to make a Working Copy of MD3 for your own use: please do not abuse this by making extra copies for your friends. If everyone who wants to use the program buys it legally, everyone (including you) will receive better after-sales support and better programs in the long run. **Please note that any copies made from your program disc will bear your serial number, and can be traced back to you: software piracy is THEFT.**

Installation: Using CP/M

Before running MD3MAKE, you must "Boot-Up" your PCW using your CP/M Plus disc: this is one of the Master discs which was supplied with the computer. Switch on the power, then insert the CP/M Plus disc: after a few moments, you should see the "A-prompt" appear on the screen.

```
A)
```

You are now "in CP/M", and you can run programs from here.

Running MD3MAKE

To run MD3MAKE, insert the MD3 Master program disc in any drive. If the disc is in a drive other than A, type the drive-letter for the new drive, followed by a colon, then press [Return]. For example, if you put your MD3 Master disc in drive B:, type

```
B:↵        (where ↵ means press [Return])
```

If you have only one drive, or if you are making your working disc in drive A, you do not need to type anything here.

The screen should now display a prompt showing the name of the drive with the disc in, such as **A)** or **B)**. To run the MD3MAKE program, type

```
MD3MAKE↵
```

MD3MAKE will ask you a series of questions about your computer and any peripherals which are attached to it, such as a printer and a mouse. The answers to these questions will be used to create an initial configuration for the MD3 program, but most of the settings can be changed while MD3 is running, so it is not too critical to answer the questions correctly.

Note: if you change your computer set-up (eg by buying extra memory or a new printer), you may need to alter these options. The simplest way to do this is to re-make your working disc by running MD3MAKE again.

Drives

After you have answered the questions about peripherals, MD3MAKE asks you about which disc drive you want to use for making your Working disc. You can make your Working disc in any drive, but if you do not have a Hard Disc, we recommend that you use drive A, so that the Working Disc can be made into a "Start-Of-Day" disc.

Start-Of-Day Discs

Start-of-Day Discs

MD3 runs under CP/M, but you can choose to include the CP/M system on your Working Disc so that you do not need to "Boot" the computer into CP/M with a separate disc every time you want to run MD3. With a Start-Of-Day disc, you simply switch on your computer and insert the disc: CP/M will be installed and MD3 will be run automatically. Note that you can only make a Start-Of-Day disc in drive A, not in any other drive.

Hard Discs

Hard Drives

If you have a hard disc, you can make your working copy on it, but you must also make a floppy disc copy to use as a "Key-Disc". When you run MD3 from a hard disc, you must also insert an MD3 Working Disc in one of the floppy drives: the program always checks that there is a proper MD3 Working disc in one of the floppy drives before it runs.

If you have a Hard Disc, the MD3MAKE program asks you to select which User Group you want to use for MD3. We recommend that you select Group 0, unless you have a specific reason for using a different Group.

Copying the Library Discs

Copying the Library Discs

Apart from the MD3 Program disc (and the Tutorial Disc), there are a number of Library files supplied with MD3. If you have a 3" disc package, there is one side of Program and three sides (540K) of library files. In the 3.5" disc package, there are two separate discs for Program and Library.

The Library discs and files are not copy-protected, and they can be copied freely using LocoScript's Disc Manager, or CP/M's DISCKIT or 8000COPY programs. Use whichever disc-copying or file-copying system you are most familiar with. You may use the library material for any purpose, but because it remains copyright Creative Technology, you may NOT pass copies on to other people.

Running MicroDesign3

Running MD3

If you have made a Start-Of-Day MD3 Working Disc (see opposite), simply switch on your PCW and insert the disc in drive A. The computer will install CP/M, then run MD3 automatically.

If your Working Disc is not Start-Of-Day, 'boot-up' your PCW with a CP/M disc as described opposite, then insert your Working disc and run the MD3 program by typing

MD3↵

Quitting MD3

To Quit the program, insert your normal LocoScript or CP/M Start-of-Day disc in drive A and press [Shift]+[Extra]+[Exit]. **The computer will now "re-boot" as if you had switched it off and then on again, so ensure that all your work is saved before leaving MD3.**

Installing the Scanner

Scanner

The Scanning system for MD3 consists of a Scanning Head and Interface. Instructions for installing the scanner are given in appendix 2.

Where To Go From Here

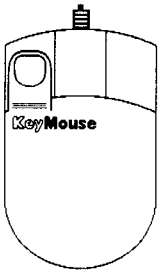
If you are an experienced MicroDesign2 user, go straight to chapter three, "Upgrade Notes", for a summary of the differences between MD2 and MD3.

If you have used some other graphics or DTP programs before, read through the rest of this Introduction and work through the Tutorial. Some of MD3 may seem familiar, but try the tutorial examples anyway: you may find some features you weren't expecting! If you have used some other DTP program, you may have learned some DTP jargon: beware! Words you have already heard may not mean the same in MD3 as they do in other programs.

If you are a complete newcomer to graphics and DTP programs, try following the Tutorial, but in conjunction with the first two chapters of this manual: chapter two provides a brief introduction to some concepts which will be new to you.

A Word about Mice

Using a Mouse



MD3 can be controlled entirely using the PCW's keyboard, but you will find it easier to find your way around the program (especially if you wish to use the Graphics tools for drawing) if you use a **Mouse**. With a mouse, you can select almost all Operations and features in MD3 simply by pointing at them using the on-screen mouse arrow, and pressing the left mouse button. Pointing at an area on the screen and pressing the left button is called "Clicking over" the area: to display MD3's Main Menu, for example, "click over" the line which says 'MENU...EXIT' at the top right corner of the screen by pointing at it and pressing the left button.

We recommend our own KeyMouse as the best mouse for use with MD3: if you would like more information about KeyMouse, just write to us at the address given in the front of this manual.

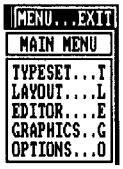
Key Descriptions and Notation

Throughout both the Reference and Tutorial manuals, the Square Brackets "[" and "]" are used to refer to specific keys on the PCW keyboard, as follows:

[→]	refers to the right-pointing cursor or arrow key;
[↑↓←→]	refers to the four cursor or arrow keys;
[4]	refers to the number 4 key on the top row of the keyboard;
[Space]	refers to the Space Bar;
↵	means press the [Return] key.
⊞ **and** ⊟	refer to the 'plus' and 'minus' keys beside the space-bar on the 8256, 8512 or 9256 keyboards, or at the bottom left of the 9512 and 9512+ keyboards;
[Shift]+[Return]	means holding down the Shift key and pressing Return;
[Alt]+⊟	means holding down the Alt key and pressing the ⊟ key;
[Alt]+[Shift]+[Enter]	means holding down [Shift] **AND** [Alt], and pressing [Enter].

Program Structure: The Sections

THE STRUCTURE OF MICRODESIGN3



MD3 consists of five **Sections**, which are selected from the Main Menu. The menu can be accessed at any time by pressing [Alt]+[Stop], or by pressing [Exit] when no operation is in progress. The Sections are:

1: Typeset Section: For taking the text which is in the Editor section, and laying it out on the Page. The Typeset section includes operations for loading and saving Pages and Templates, loading Fonts, and full control of the typesetting Window which controls the position and style of text on the Page.

2. Layout Section: For Loading, Saving and manipulating Pages. The Layout Section also includes operations for drawing Boxes, Loading different types of clip-art files, and Printing. If you have a ProSCAN image scanner, the Layout section can also be used to scan images onto the Page.

3. Text Editor Section: For Loading, Saving and Editing text which is to be Typeset. This section is really a simple word-processor, with Cut, Copy, Move, and Find-and-Replace operations, and facilities for placing Control Codes in the text to control the Typesetting operation.

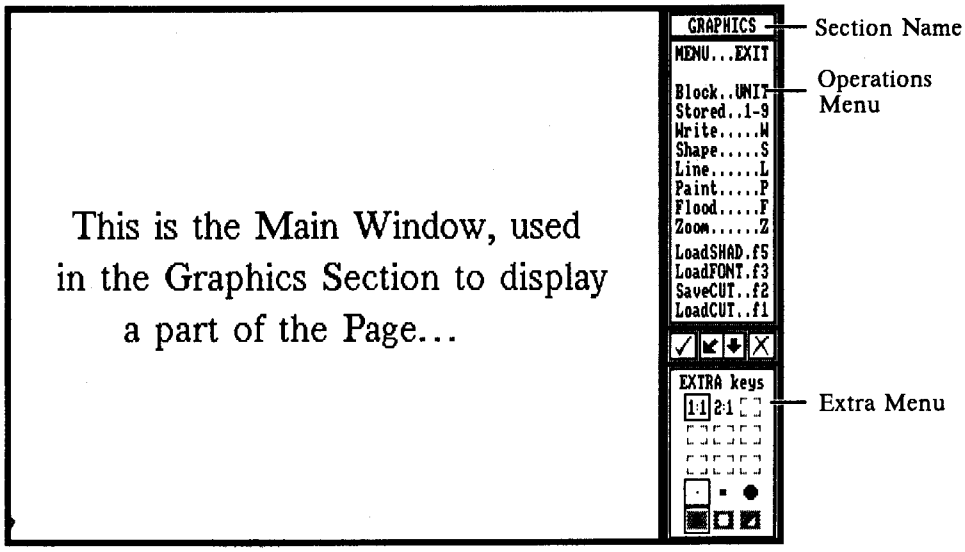
4. Graphics Section: For detailed manipulations and graphics operations including drawing Lines and Shapes, Painting, Area Flood, typing text directly onto the Page ("Writing"), and pixel editing. The Graphics Section can be used to display the Page contents at several scaling factors: note that not all the Graphics operations can be used at all the different scales.

5. System Options Section: For choosing and storing default settings for a number of system options, including the type of printer and mouse you are using. System Options settings can be saved in an Options file on your working program disc, and are loaded automatically when the program is run: this allows customisation of the program options for your own hardware setup and personal preference.

THE MICRODESIGN3 SCREEN

The Screen

The Screen in each Section of MD3 is divided into windows, and in general each window performs a similar function in each Section.



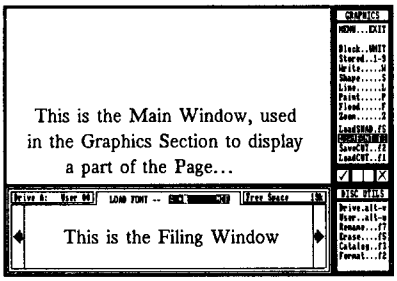
The **Main Window** occupies most of the screen. It displays the area on which you are currently working: this may be all or part of the Page itself, the Text in the Editor, or a display of the current System Options. In the Typeset and Layout sections, the Main Window displays the Page, together with details of the current printer settings, the Page format, and other information.

Running down the right edge of the screen in each section is the **Operations Menu**: this is a list of all the **Operations** for the Section, with the key-letters which are used to select each one. Operations can be selected from this menu by placing the mouse arrow over the desired operation name and pressing the left button: if you are not using a mouse, just press the key listed beside the operation.

The bottom right corner of the screen displays the **Extra Features** menu. Some Operations have a number of Extra options, for example to select whether Lines are drawn in Black or White, whether Shapes are Filled, and so on. The Extra Features are controlled by clicking over them with the mouse left button, or by holding down the [Extra] key and using the Keypad: see page 1-12.

The Filing Window

Whenever a Load or Save operation is selected, a new Window appears across the bottom of the screen.



This **Filing Window** shows the disc drive status, and can be used to display a list of the files on a disc. When the Filing Window is displayed, the Extra menu is replaced by the menu for the Filing Utilities, including selection of Disc **Drive, User** group, and operations for File **Rename** and **Erase**, and disc **Formatting**. See **Filing**, page 3-1, for more information about the Filing Window.

The Cursor Readout

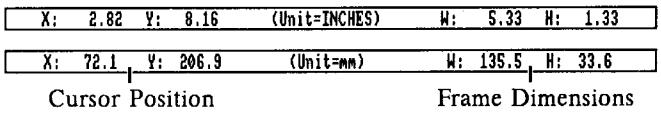
The Cursor Readout

In the Layout, Typeset and Graphics sections of MD3, all operations are guided by the Cursor, which usually appears as a cross-shaped symbol on the Page. The exact location of the cursor on the Page is very important for accurate positioning and measuring, and the program provides a Cursor Position Readout across the bottom line of the screen. The Readout is normally measured from a zero 'origin' at the top left corner of the Page, though it can be set to zero at any point on the Page (for making relative measurements) by pressing [Extra]+[0].

[Extra]+[0]

[Extra]+[X] The cursor position is shown as horizontal (X) and vertical (Y) coordinates, and can be displayed in inches, millimetres or pixels: press [Extra]+[X] repeatedly to select the units, or use the appropriate System Option (see Options).

Whenever you are defining a rectangular area of the Page (eg for a Block or Box operation, or when Saving an Area), the Readout also displays the height and width of the 'frame' in the same units as the Cursor Readout.



See the Reference chapter of this manual for more details of how to use the Cursor Readout in each section of the program.

SELECTING AND FIXING OPERATIONS

Operations:

Using any **Operation** in MD3 involves a sequence of three stages:

Selecting...

1: First, **Select** the operation from the Operations Menu: when an operation has been Selected, its name appears highlighted in the menu.

Adjusting...

2: Next, **Adjust** the operation: this means different things in different operations, but involves changing the operation's options and settings to give you the effect you want. A simple example is a Shape operation, where you Select the shape, then Adjust its size, shape and position on the screen.

...and Fixing

3: When you have set the operation's options and position, you must **Fix** it by clicking over the ☑ symbol, or by pressing [Enter]: it is only when you Fix an operation that changes are actually made to the Page and its contents, so if you Abort an operation before Fixing it, the Page remains unchanged.

This sequence, *Select*, *Adjust*, and *Fix* is common to most Operations. Some complex operations have their own pull-down menus of sub-Operations: these are used in just the same way as the main Operations, and can add extra Select stages. The **Block** operation is one example, with a pull-down menu to select between Erase, Copy, Move, or other sub-operations.

UNDOing

UNDOing

If you Fix an operation, but then decide that you want to change your mind, you can usually UNDO it: when you UNDO by clicking over ☒ or pressing [Word/Char], the program returns to the position it was in before you Fixed the last operation, so that you can either re-adjust the operation and Fix it again, or Abort it completely by pressing [Stop].

You can only UNDO the last operation you Fixed, and the UNDO facility disappears if you move to a different Section of the program. In general, the only operations which cannot be UNDOne are the file-loading operations, and any operation which offers a 'Confirm Stage' asking you if you are sure you want to complete it.

Different operations UNDO in different ways: for specific instructions for different operations, consult the Reference chapter.

USING THE OPERATIONS

Using the Operations:

There are three ways of using the operations, and two of these, the mouse and the Key-letter method, are described below. The third method, using the Keypad, is described in the Tutorial manual which accompanies the full MicroDesign3 package.

THE KEY-LETTER METHOD

The Key-Letter Method

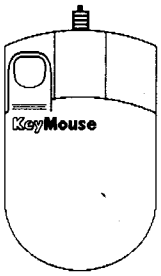
Any Operation in the menu can be accessed from the main keyboard by typing the Key-Letter associated with it: these Key-Letters are listed beside the operations in the Operations Menu. Generally, when the Operation has been adjusted (usually using the cursor keys), it can be Fixed by pressing [Enter], or cancelled and aborted by pressing [Stop]: **pressing [Alt]+[Stop] at any stage in the program will cancel the current operation and bring down the Main Menu.**

[Alt]+[Stop]

Fixing an operation is not necessarily permanent: if the result is not correct, the Fix can be Undone. The [Word/Char] key is the UNDO key, and each press of the [Word/Char] key moves one step back in the Select/Adjust/Fix sequence. **You can UNDO back as far as the last-but-one FIX, providing that you have not moved to a different Section.**

THE MOUSE

The Mouse



As we pointed out at the beginning of this chapter, a mouse is a very useful tool for controlling MD3: we especially recommend the Creative Technology KeyMouse. If you have a mouse and you have answered the Installation questions appropriately, an arrow-shaped mouse cursor will appear on the screen when you run MD3: if you have a mouse but no arrow symbol appears, or if the symbol does not move when you move your mouse, check the System Options section to ensure that the Mouse Options are set correctly. Note that the mouse arrow is separate from the cross-shaped cursor which normally controls MD3's operations.

'Clicking Over'

Most of MD3's Operations and options can be controlled by pointing at them with the mouse arrow and pressing the left mouse button. Using the left button to 'click over' Operations, Options, Shades, Filenames etc. provides a fast and simple way to use MD3: it's easier to do it than to explain it!

The Mouse Symbols:

There are four screen symbols which are specifically intended to be used with the mouse. These are:

- ☑ used for FIXing operations
- ☒ used for UNDOing operations
- ☑ used to display the bottom menus in some operations
- ↧ used to switch between the Scroll Map and the Extra menu in the Graphics section.

These symbols normally appear at the bottom of the operations menu, and they are only visible when they are active. During Operations which may take some time, such as Typesetting (or UNDOING a Typeset Operation) or Printing, the ☑ and ☒ symbols are replaced with a "**BUSY**" message.

Scrolling in Graphics

Centre Button

With a KeyMouse (or other 3-button mouse), the centre button can be used to Scroll the Graphics Window: in the Graphics Section, just hold down the centre button and move the mouse to scroll.

Double-Click

Double-Click

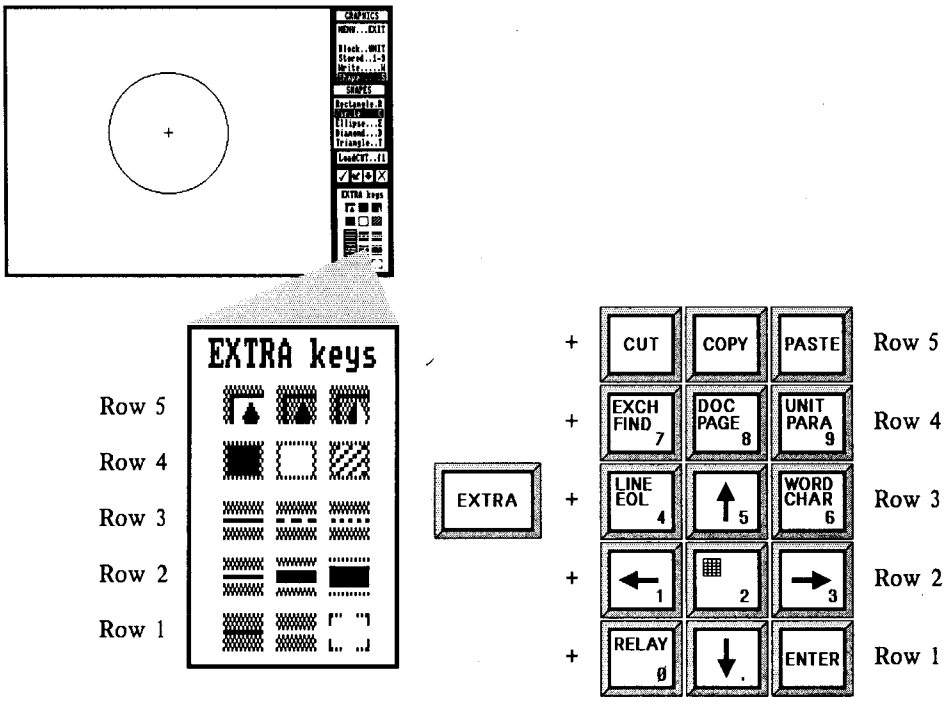
If you press a mouse button twice in quick succession, the program can interpret this as a **Double-click**, rather than as two normal clicks. A Double-Click with the left button provides another way of FIXing an operation, while a Double-Click with the right button is another way to UNDO. The maximum time between the two clicks of a Double-click may be altered in the System Options Section to suit your own taste.

THE EXTRA FEATURES

The Extra Keys

Many Operations have a set of Extra Features associated with them, which allow you to control different aspects of how the operation works. When an Operation has been selected, its Extra Features (if any) are displayed as special symbols in the Extra Menu, which appears in the bottom right corner of the screen. These Extra Keys are controlled by clicking over the symbols with the mouse left button. Every operation and its Extra Keys are described in detail in the Reference chapter, and a full list of the Extra symbols and their meanings is also given on the Quick-Reference sheet which accompanies this manual: the particular set of symbols shown in the diagram is used by the Shape operations in the Graphics section, but different sets of Extra symbols are used for different operations.

If you do not have a mouse, you can control the Extra features using the [Extra] key in conjunction with the 15 "keypad" keys at the right-hand end of the PCW's keyboard. The Extra menu is displayed as five rows of three columns: each symbol corresponds with one of the keys in the Keypad, and each option can be switched on or off by holding down the [Extra] key and pressing the appropriate Keypad key:



NOTES FOR BEGINNERS

Beginners' Notes

This chapter is an explanation of some of the new concepts which, if you are new to Desktop Publishing and to MicroDesign, you will need to understand. However, you should NOT worry if you don't understand it *all* the first time you read it: some bits may take a while to sink in! There are no instructions in this chapter, only information. If you want to get started with the program before you read all the theory, begin with the Tutorial Manual.

A Note for LocoScript Users

Discs & Disc Drives

If you normally run LocoScript on your PCW, you will be used to leaving a disc in the computer's disc drive whenever you are editing a document. MD3 works in a different way: all the information used in the program (the Page, the Text, the Fonts etc) is held simultaneously in the computer's memory. This means that once MD3 is running, you can take out the program disc: you do not have to put another disc into the disc drive until you wish to load or save a file.

FOR THOSE NEW TO DTP AND GRAPHICS

Page Processing

We describe MD3 as an *Integrated Page Processor* because the program is used to design and print a Page: this will normally be an A5- or A4-size Page, although there are other options. MD3 holds only one Page in memory at a time: if you wish to design a multi-page document such as a newsletter, you must create each Page separately, and print it and/or save it on disc before moving on to the next.

The Page can consist of text, pictures, diagrams, borders, or anything else you want. This means that MD3 contains a great many different tools (called "**Operations**") for creating these different features. With an *Integrated* package such as MD3, all the different features needed to create and print a Page are all incorporated within the main program. It is easier, however, to explain these features separately, since they exist separately within the program: for the moment, we can split MD3's applications into Text Editing, Graphics, and Typesetting.

What is Text?

Words about Text

This is not such a silly question as it sounds. You may be used to using a word-processor, but you have to re-think some of the basic concepts when you move into DTP. With a word-processor, you simply type in the text, then print it. Most word-processors have some facilities for changing the type style or size, but the range of different effects is very limited.

What is Text? (cont)

When using a Desktop Publishing program such as MD3, you can produce pages of text in many different styles, sizes and formats, and you can combine it with pictures. This means that simply typing in the text using the keyboard is no longer the whole story: you also have to tell the program how to place it on the Page in a particular position, type-style and size. If you wish, you can even make it flow around any pictures which are already there, or you can leave spaces for adding pictures later.

MD3's Sections

In MD3, these two stages are done in different **Sections** of the program: you type in your text in the **Editor** section, but you lay it out on the Page using the operations in the **Typeset** section. It is important to understand the distinction between text which has been typed into the Editor (which is really a word-processor program within MD3), and the same text *after* it has been Typeset onto the MD3 Page.

The individual letters ("characters") in ordinary word-processor text do not have a specific appearance or shape: the letter-shapes you see on the screen are not necessarily the same as those you see on the printout. A word-processor **Prints** by telling the printer which characters to print, but it is the printer which decides what each character actually looks like on the printout: this is why text which has been marked as Italic, for example, does not look different from non-italic text on the word-processor screen, but it does look different when printed.

Text and Bit-Images

MD3 has its own word-processor section, called the **Text Editor**. You can use the Editor to type in your text from scratch, but you can also load a text file which you have created and saved using a word-processor program like LocoScript2. Text which is typed or loaded into the Editor contains no information about type-sizes, styles or printing. The main difference between a w-p program and MD3 is that instead of the text being given a shape and style when it is *printed*, MD3 creates a complete picture *inside the computer* of what the finished page will actually look like, and allows you to alter any part of the picture, down to the finest detail. The picture is created in the computer's memory, and it is composed entirely of dots. Each dot requires one *Bit* of the computer's memory, so the picture is called a **Bit-Image**, or **Bit-Map**.

This is why a DTP program is more versatile than a word-processor: when you look at text which has been Typeset onto MD3 Page (rather than at the Editor screen), you can see on the screen exactly what every dot in every character will actually look like when it is printed. This does mean, though, that MD3 cannot print using any of the typefaces which are stored in your printer: it can only use its own **Fonts** (see opposite), which are supplied on disc as MD3 Font ".MDF" files: the program always holds three fonts, and you can switch freely between them, or load new fonts from your library disc.

Fonts

FONTS

A Font is a set of letters and symbols which is used to write or typeset text on the Page. Fonts come in different designs (these are properly called *Typefaces*, with names like "Times" or "Helvetica", though MD3 Fonts have names like Stan and Paul), and different *Styles* (described by terms like "Bold", "Italic", and "Outline").

Most of this manual is typeset in this particular font, which is our own version of the industry-standard "Times Roman": we call it "Stan". The Stan typeface comes in six different sizes...

Stan13...
Stan16...
Stan22...
Stan32...
Stan44...
...and Stan56

Different Sizes

In MD3, these different sizes are actually different font files, and must be loaded separately even though they are the same typeface. The numbers in the font names tell you the size of the font. They are approximations of "Point Sizes", used by the printing industry to describe the height of a typeface: 72 "Points" make one inch. The MD3 Point sizes are almost exact if you are using a 9-pin printer, but the same fonts are printed at a smaller size using other types of printer. The numbers also happen to be a good guide to the height in pixels of the capital 'A' character in the font.

Different Fonts...

This is a different typeface, called Paul. Whatever font you are using, you can always use these six variations of Style:

This is Bold text: This effect is called Double-Strike:
This negative effect is called Highlight: *This is Italic text:*
This effect is called Outline: and this is underlined.

...and Different Styles.

In MD3, three different Fonts are loaded into the computer's memory simultaneously. You can switch between fonts at any point in the text, and the size and style of each font can be controlled separately: this means that you can typeset a Page using three different typefaces (say a large font for headlines, a medium-size font for body-text, and a small font for footnotes) using a single Editor or word-processor file loaded into the Editor.

MD3 is supplied with a free library which includes over 50 Fonts, and Extra Fonts Discs are available from Creative Technology: this means that an enormous range of different lettering styles and sizes is available within MD3. Remember, though, that MD3 uses only its own Fonts: any Fonts which are resident in your printer or supplied with other programs cannot be used on MD3 Pages.

TYPESETTING

Typesetting

Typesetting means laying out on the Page the text which is in the Editor. Before, after or during typesetting, pictures can be added to illustrate the text, and lines and boxes can be drawn to separate different blocks of text.

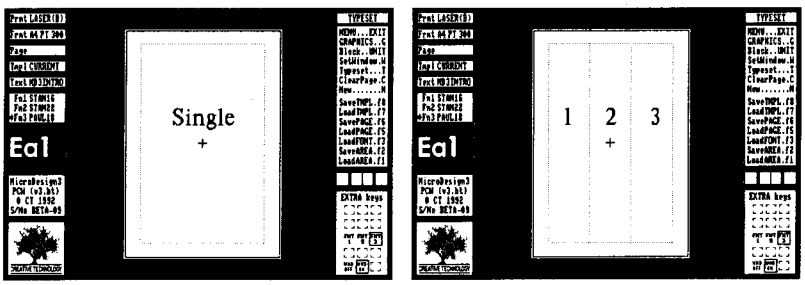
Control Codes

MD3's typesetting system also allows you to control the size of the text, and the spacing and justification formats for typesetting. The font and the text **Style** features (*Italic*, **Bold**, Underline etc) can be controlled automatically during typesetting by special "Control Code" characters which are typed in as part of the text. These control codes can even be imported from an external word-processor file just like ordinary characters: if you create a LocoScript2 file with a part of the text marked in Bold, when you load this file into MD3's Editor, the LocoScript2 Bold codes will be converted to MD3's Bold codes, and the text will appear in Bold automatically when it is typeset.

When text is Typeset, the characters are laid out on the Page: the Fonts define the actual appearance of the characters. Text which has been typeset becomes a part of the Page, and is held in the computer's memory as a picture composed of dots: this means that text can be altered (re-scaled, flooded etc) using the operations in the Graphics and Layout sections of the program.

The Window

The Typesetting **Window** is used to restrict the Typesetting to a rectangular area of the Page. This area can be split vertically into columns for 'Newspaper' style pages. The position of the Window is displayed on the Page in the Typeset section of MD3. The illustration shows two screens from MD3's Typeset Section, displaying the same Window position: the first is a single-column Window, and the second has three columns.



TEMPLATES

Templates

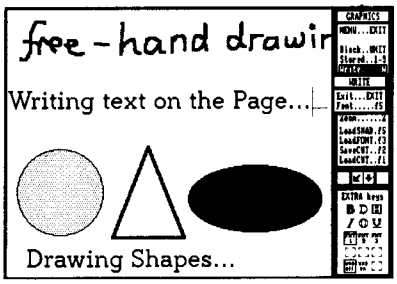
A Template is a file which you can load or save to disc, and which contains all the information about the Page, the Typesetting menus, the Window position, and the Fonts which are currently loaded: Template files also include an option to store the complete Page contents. A Template file is rather like an instant "snapshot" of MD3's settings: it allows you to store and recall all the program settings which control Typesetting. A Template can be used to create and store a "blank" page, complete with titles or footers, which can be recalled later and re-typeset with different text. The same Template might be used to create a series of pages with a similar structure but different text, such as a letter-head or magazine page.

GRAPHICS

Graphics

The Graphics Section in MD3 is used to create shapes and pictures on the Page. You can use the Graphics section to edit each individual dot (or "pixel") on the Page, creating pictures for illustrating your text. You can even edit the dots which make up the letter-shapes of text which you have already Typeset. The Graphics section has special operations for drawing Lines and Shapes (circles, ellipses, triangles etc) on the Page: the Shapes can all be drawn automatically, and 'freehand' drawing and painting is also possible. After typesetting text on the Page, you can use the graphics tools to manipulate and alter the letters, for example by adding shapes, lines or shadows in or around them. To take full advantage of the Graphics Operations, it is useful to have a Mouse.

In the Graphics section, text can also be typed directly onto the Page without using the Text Editor: this process is called **Writing**. The Write operation uses all the same parameters for the different fonts and styles as the **Typeset** operation, so that the text produced by one will match that produced by the other.



DISC SPACE, TEXT AND BIT IMAGE FILES

Disc Files: Text and Bit-Images

When you save a *text file* on disc (from a w-p program or MD3's Text Editor), the computer uses one "byte" to represent each character: this means that a text file containing 5,000 characters will take up about 5Kb of disc space: a Kb, or Kilo-Byte, means one thousand bytes. However, if you Typeset this same 5Kb of text onto the MD3 Page and save it on disc as a bit-image Page file, it will require much more space on the disc, perhaps over 100Kb: this is because it stores a pattern of dots which make up a picture of the text, and the dot-pattern for each character requires far more than one byte. Although a Page may only contain a few hundred typeset characters, it may require tens of thousands of bytes of disc-space to store a bit-map picture of what these characters actually look like.

When you type in a text file, then typeset it to create a Page, you should always save BOTH the text file and the finished Page. **It is important to remember that although you can always re-create the Page by loading and typesetting the text again, you cannot re-create the text file from the Page,** except by typing it all in again! Similarly, if you typeset the text, then make changes to the same text in the Editor, these changes will not appear on the Page until you typeset the text again.

WHAT TO DO NEXT

If you haven't already started following the Worked Examples in the Tutorial Manual, now is the time to begin. If you have worked through these examples before reading this chapter, it may be a good idea to go back and look at them again: you may well find that you understand what you are doing a little better.

UPGRADE NOTES FOR MICRODESIGN2 USERS

Upgrade Notes

If you are a MicroDesign2 user, much of MicroDesign3 will already be familiar to you, and you should become accustomed to it quickly. This chapter contains a summary of the differences between the two programs, and explains MD3's features with reference to their counterparts in MD2.

Some of the improvements in MD3 are connected with memory, because many of MD2's limitations were associated with the 512K memory limit of the standard PCW. MD3 takes advantage of extra memory by providing Page-formats which use higher-resolution printing on 24-pin, inkjet and laser printers. When MD3 is run, it will detect the amount of memory available in your PCW automatically, and will occupy 512K, 768K or 1Mb. Generally, the more memory MD3 can use, the more powerful it is, and the larger the Page area available.

The Text and Font systems have also been substantially improved. MD3 has three fonts loaded at all times, and these fonts have more characters than the MD2 fonts. They also include accents, and MD3 is fully compatible with all the accents and non-English characters used in LocoScript2 and Protext (except Loco's Greek and Cyrillic text). You can switch freely between the fonts during typesetting, using control codes in the Text Editor.

QUIT

Quitting from MD3

There is no Quit operation in MD3. To exit the program, insert your normal LocoScript or CP/M Start-of-Day disc in drive A and press [Shift]+[Extra]+[Exit] to "re-boot" the computer.

Memory and Flipper3

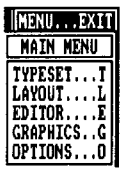
Memory & Flipper3

MD3 is fully compatible with Flipper3. If it is used in a Flipper environment, it should be allocated 32, 48 or 64 "blocks" of memory: this is equivalent to 512K, 768K or 1Mb of RAM. The more memory it can use, the more powerful MD3 will be. See "Page Formats and Memory" below for more information.

THE SECTIONS

The Sections

MD3's has fewer Sections than MD2, because the Font and Icon sections have been dropped to make room for more features in other sections. Typesetting now has its own section, and the MD2 Design section has been re-named as Graphics: this section can work at two different scales, making it possible to draw larger shapes than in MD2. The old Layout, Editor and Options sections fulfil similar functions as in MD2.



Scanning

Scanning

The Layout section now includes a Scan operation, so that the ProSCAN scanner and interface can be used to scan images directly onto the MD3 Page. The ProSCAN option for "Normal" or "Adjusted" now appears in the Extra menu, as **N** for Normal and **9** for 9-pin (Adjusted). See Appendix 2 for more information about the scanner.

THE SCREEN

Bottom Windows

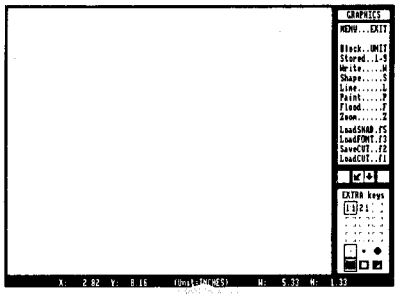
Bottom Windows

MD2's "Bottom Window" system is still used to display menus, but all of these menus are now hidden until you call them up. To display the Bottom Window, click over ☑ or press [Relay]: this also moves the cursor into the Bottom Window, and as soon as the cursor is moved back to the main screen (by clicking over ☑ agin, or over the Main Window, or by pressing [Relay] again), the Bottom Window is removed. Bottom Window menus are used in the SetWindow, Typeset and Write operations, and for the selection of Fill patterns for Shapes, Painting and Flooding.

The Readout

Readout

As in MD2, the Readout is displayed in the bottom line of the screen. The Readout now includes Height and Width for any rectangular cursor (eg in Block or SetWindow), and the dimensions can be given in Inches or Millimetres as well as in Pixels. Press [Extra]+[X] repeatedly to change the Readout to millimetres, Inches, Pixels: press it again to switch the Readout off altogether. As in MD2, [Extra]+[0] zeros the Readout at the current cursor position.



X: 2.82 Y: 8.16 (Unit=INCHES) W: 5.33 H: 1.33

X: 72.1 Y: 206.9 (Unit=mm) W: 135.5 H: 33.6

Cursor Position — Frame Dimensions

PAGES FORMATS AND MEMORY

Pages Formats & Memory

The MD2 Page was a little shorter than A4, because of memory limitations. While these limitations still apply on machines with only 512K of memory, expanding the memory allows the program to create longer Pages which are closer to genuine A4. Some A4 Page formats actually grow longer if you add more memory to your PCW, up to a maximum of 1Mb. The "short" A4 page formats all represent full A4 width, and can be used to produce full-height A4 Pages in separate pieces using the Print Queue.

MD3's Page Formats are usually "Printer-Specific": this means that they are structured according to the capabilities of the printer which is currently selected in the Options section. As far as MD3 is concerned, there are three different types of printer, which use three different printing resolutions: 9-pin printers (including the PCW's own matrix printer) work at 240 dots-per-inch ("dpi"), laser and HP-Deskjet printers work at 300 dpi, and 24-pin and Bubblejet printers work at 360 dpi. When you use **New** to select a new Page, only Page formats which are suitable for your printer (and memory, see below) will be available.

MD3MAKE & Memory

512K PCWs and the MD3MAKE Installation

If you have only 512K of memory and a 24-pin, inkjet or laser printer, (or 768K and a 24-pin/bubblejet) the MD3MAKE program asked you whether you want to use full A4 Pages at reduced resolution, or A5 Pages at full resolution. This is because there are two ways of configuring Pages. If you selected A4 formats, the Page resolution (240dpi) and Page size will be the same as that in MD2, and the print quality will not look much better than it did in MD2. If you chose the A5 option, you will find that your A5 Pages print at much higher resolution than your MD2 Pages: 24-pin and Bubblejet printers work at 360dpi, while laser and Deskjet printers work at 300dpi.

Resolution Option

The choice between these the A4 and A5 Page configurations on 512K PCWs is controlled by the **Resolution** option in the Options Section: set the Resolution to **240** for full A4 Pages, or to **NATIVE** for printer-specific A5 Pages.

A5 Pages

A5 Pages

MD3 provides proper A5 pages. In the New menu, these are format numbers one and two. Portrait (Upright) A5 Pages are printed in the opposite orientation to A4 Pages: if you want to print two A5 Portrait Pages side-by-side on an A4 sheet of paper, use Page format 1 (Upright A5) for each page, and print them one after the other. If you are printing on genuine A5 Upright paper, select an A4 Upright format, but use only a part of the MD3 Page.

THE THREE PRINTER TYPES

9-Pin Printers

If you are using a 9-pin printer (240dpi) and your PCW has only 512K of memory, the A4 Page is the same size as that used in MD2. If you have 768K of memory, the Page is longer, giving a full A4 height. 9-pin A5 Pages are always full-size, irrespective of memory.

Deskjet & Laser Printers

If you are using a Deskjet or Laser printer (300dpi) and your PCW has only 512K of memory, the default Pages will be A4 at 240dpi. If you change the Resolution option to Native, A4 formats will not be available, but A5 formats will be full-size and will print at a full 300dpi. With 768K or 1Mb of memory, you can use full-size A4 formats.

24-Pin & Bubblejet Printers

If you are using a 24-pin or Bubblejet printer (360dpi) and your PCW has only 512K of memory, the default Page Format will be A4 at 240dpi. If you set the Resolution option to Native, your Pages will print at 360dpi, but even A5 formats are shorter than full-size, and A4 formats are not available. 768K of memory gives full-size A5 Pages and short A4 formats, but a full 1Mb of memory is required for full-size A4 Pages at 360dpi.

Formats 5 & 6

Page Formats 5 and 6

The New menu also includes "double resolution" page formats, which are similar to MD2's "Strip" formats. Page Formats 5 and 6 print out at twice the normal resolution: the 9-pin version prints at 480x216 dpi, the Deskjet / Laser version at 600x300 and the 24-pin / Bubblejet version at 720x360. Note that the printers themselves are not really capable of printing at the double horizontal resolutions, but these Page formats still represent the only way to make use of the maximum vertical resolution of the printer, and to achieve the very best print quality possible from MD3. If you have a full 1Mb of memory and you are using a 9-pin printer, formats 5 and 6 are approximately A5 size. If your printer is not a 9-pin, these formats will not be A5-size, but they are still useful, because they represent the widest possible Page which will fit on the MD3 screen.

A Slightly Technical Explanation

The page format used in MicroDesign2 represented a (rather short) A4 sheet of paper, and was constructed according to the capabilities of a 9-pin printer. Even if you were using a laser or inkjet printer, the Page always consisted of only 256Kb of data, so the print resolution could not be improved by using a higher-resolution printer. In MD3, however, the format of the A4 Page is constructed to suit the printer you are using. This means that in MD3, 9-pin printers still print at the old A4 resolution of 240x108 dots-per-inch (or "dpi"), but if your PCW has enough memory, an A4 Page on your

bubblejet or 24-pin printer will have a resolution of 360x180 dpi. Because this requires more than twice the number of dots as a 9-pin page, and because each dot requires one "bit" of computer memory, you will need a full 1Mb of memory if you want to create these Pages at full A4 size in MD3. Full A4 Pages for laser or Deskjet printers have a resolution of 300x150 dpi, and require a total of 768K of memory.

Saving Pages: 180K Discs

All these dots also take up a lot of space on disc when you Save a Page, although the new data-compression system used in MD3 is more effective than that used in MD2. In the most extreme case of a 360dpi A4 Page containing a lot of fine detail, it is possible to create a Page which requires more than 180K of disc space, and therefore cannot be saved on a PCW8256 or 8512 A: drive disc.

THE FONT SYSTEM

The Font System

The improvements to the font system affect Typesetting and Writing, and include changes to the Text Editor.

More Characters

More Characters & Accents

MD3's font system supports all Roman-script European languages and accents, and most of the characters from these languages can be imported from LocoScript2 files. This means that MD3 has a new format for Fonts and Font files: MD2 fonts consisted of just 96 characters, while MD3 fonts have 124 characters and 16 accents. The new characters and accents are entered using special combinations of keys: wherever possible, these key-combinations are the same as those used by Locoscript2. A list of the characters is shown below, and a full table of the keys used to type them is given on page 4-53. Note that MD3 can load and typeset MicroDesign2 fonts, but none of MD3's extra characters or accents are available with MD2 fonts.

The Character Set

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 - = - + ! " £ $ % ' & * ( ) [ ] { } ◇ ; : # , . / ? ½ @
¹ ² ³ · ł d % æ œ ø † ⁺ « » ‘ ’ ¡ • ¿ ß Ł Đ © Æ Œ Ø ° ‡ ¼ ¾ ⅓ ⅔
Accents: é è ê ë ě ė ĕ ė ē ě ẽ ť ọ ę ç ę

More Fonts

More Fonts

MD3 always has three fonts loaded at once. The typesetting system can switch between them using new control codes, which are entered in the Editor by typing ⊞1, ⊞2 or ⊞3. You can also switch between the three fonts using the Extra keys in Write or Typeset. The size, spacing, and style settings for each font are stored separately, so that changing these settings for one font does not affect the others. There are new settings in the font menus for 'Kerning' (see below), and for adjusting the width of the Space character.

The Default Template BOOT.MDT

The Boot Template

When MD3 is run, the three fonts are loaded as part of the default Template, which is called **BOOT.MDT**: unlike in MD2, MD3 Templates include the fonts themselves. When you make your working disc, you will find that the Boot Template uses small fonts, because the default Template file must be small enough to be loaded on a 512K computer. If you want to change the fonts in your default Template, load the fonts you want, then use the **SaveTMPL** operation to save a Template called BOOT on your MD3 working disc.

Non-Proportional Fonts

Most of the fonts supplied with MD3 are **Proportional**: proportionally-spaced fonts look much better on a typeset page than the usual typewriter-style **Non-Proportional** (or Fixed Pitch) designs. However, the five **Type** fonts are non-proportional, and when typeset, they correspond very closely with standard printer fonts at 10-pitch, 12-pitch and 15-pitch using the three different printer types.

```
This is an example of a non-proportional font. It is a
very similar design to the "Courier" typeface supplied
in most printers, but in MD3, it is called TYP17P10,
because it prints out at 10 characters per inch on a
300dpi printer such as a laser or Deskjet. The same font
prints at about 12cpi on a 24-pin or Bubblejet, and at
about 8cpi on a 9-pin printer.
```

See appendix 5 for more information about fonts and typesetting, and some tips on typography.

Big Fonts...

Bigger Fonts

The maximum font size in MD2 was about 30pt, but the largest font in the MD3 library is over 64pt. The actual size of the fonts when printed depends on the Page format, as in MD2, and also on the type of printer you are using: the higher the printing resolution, the smaller the characters will be. This means that the numbers in the font names no longer give an exact description of their printed size: the numbers represent the font height in pixels, and are intended to give an idea of the relative sizes of different fonts, although they still correspond approximately to a 'point' size if you are using a 9-pin printer. (Note: 72 'Points' is the same as 1 inch, or about 25mm.)

...and Memory

The amount of memory in your PCW may limit the size of the font(s) you can load: if you have only 512K of memory, for example, you will simply not be able to load a large font such as STAN56. Remember that you can always add more memory to your PCW using the Creative Technology RamPort. The font library even includes a completely blank font, called **BLANK.MDF**. If you run out of font memory, you can always make more available by loading the blank font into one of the font slots.

BLANK.MDF

Kerning

Kerning...

MD3 fonts are defined with a "Kerning Table", that is a list of pairs of characters which require slight alterations in the spacing between them. As an example, the word AVARICE contains two sequences, AV and VA, which in MD2 typesetting would have appeared to have uneven gaps. The Kerning Table (which is a part of the MD3 font file) tells the typesetting system to adjust the positions of these character combinations to "even out" the gaps, so that the final result looks like this:

No Kerning Kerning

...and Non-Proportional Fonts

Note that **non-proportional** fonts should not be kerned. The kerning feature is set On or Off for each individual font in MD3, using the Font Menu in Write or Typeset: when a proportional font is loaded, the kerning is automatically switched On for that font, but when a non-proportional font is loaded, the kerning for that font is set to Off. These are only default settings, and they can be changed if required, but there are no kerning tables in non-proportional fonts anyway. MD2 fonts have no kerning information stored in them, and they cannot be kerned.

Space Width

Space Width

Each Font menu contains a setting for adjusting the width of the Space character. When typesetting, adjusting the space-width is usually the simplest way to make the text fit exactly into a particular column or Page: if the text is a little too long or too short when you first typeset it, try UNDOing the typeset, decreasing or increasing the Space width, and re-typesetting.

Default Settings for Fonts

Default Font Settings...

When MD3 fonts are designed, they have certain settings built-in to the font file. For example, some fonts are specifically designed to be used in Italic mode: when an Italic font is loaded, MD3 automatically switches on the Italic option for that font. The Kerning setting is also pre-defined by the font designer, and is switched off by default if the font is a non-proportional design. You can always change these options before using the fonts, but they have been set up to give you the best results with the default settings.

...and Templates

Although you cannot change the default settings in the font file, any changes in the font menus are stored along with the fonts themselves when you save a Template. If you want to change the default settings of a font, make the changes, then Save a Template: whenever you re-load the Template, your changes to the font settings will be re-loaded.

THE TEXT EDITOR

Text Editor

In addition to the changes required by the new Font system, the following improvements have been made to the Text Editor section:

Text File Size

File Size

The maximum capacity of MD2's Text Editor was about 11Kb. In MD3, the Editor can be configured to use either 16Kb or 32Kb for the text. See **Options**, page 4-78, for more details.

The Queue Editor

Print Queue

In MD2, the Print Queue had to be typed into the Editor in the same way as normal Text. In MD3, the Editor is split into two sections, with the Print Queue isolated from the Text: you can switch between Queue and Text by pressing [Alt]+[T]. If you save the Queue on disc using **SaveQUE**, the program forces you to use the file suffix **.MDQ**, and only files ending in **.MDQ** can be loaded into the Queue. This means that if you want to use print queues which were created in MD2, you will have to rename the queue file so that it has the suffix **.MDQ**. Note that many new features have been added to the Print Queue itself: see **Printing**.

Soft Hyphens

[Extra]+[-]

Hyphenation

MD3 uses a "Soft Hyphen" character, which can be used to split a long word if (and only if) it occurs at the end of a line. The soft hyphen is typed by pressing [Extra]+[-], (the [-] hyphen key beside the number [0]). Although the hyphen is displayed on the Editor screen, it does not appear as a character in the text at all unless it is used to split a line. See **Typesetting** overleaf for more details.

Find & Exchange

Find & Exchange

The MD3 Editor has a Find operation. If you select **Find** from the Operations menu, the program will ask you to enter a character or sequence of characters, and when you press [Return] or ☑, it will find each occurrence of the sequence in the text. When the sequence has been found, use ☑ or [Y] to move to the next occurrence, and ☒ or [N] to cancel the Find operation and return to editing the text.

Find has an Extra option called EXCH, for Exchange: if EXCH is selected, the program will ask you for a second character or sequence, and will replace occurrences of the first sequence with the second one. MD3 can Find almost all characters, including the 'control codes' used for setting styles and switching fonts: this makes it very easy to Find, say, all the ⊞1 codes for selecting font number one, and change them all into ⊞2 codes to select font number two instead.

Find always remembers the last sequence it used: you can press [Alt]+[Find] at any time to move to the next occurrence of the Find sequence, without having to re-select the Find operation from the menu. **Note that Find always works forwards**

through the text, from the current cursor position. To search through the whole text, press [Alt]+[Shift]+[Doc] to move the cursor to the beginning of the text, before selecting Find.

Tabs & Indents

Using MD2 to produce tabulated text was always awkward, because the program did not use adjustable tab-stops on a "ruler line". MD3 has a ruler-line and tab-stops, which are set up in the SetWindow menu: see "Typesetting". The program now includes a Right-Indent character, as well as a Left-Indent: at the beginning of a paragraph, press [Alt]+[Tab] for a Left-Indent, and [Alt]+[Shift]+[Tab] for a Right-Indent. See Typsetting overleaf.

Tabs & Indents

'→' is a Tab
'↦' is a Left-Indent
'↤' is a Right-Indent

Non-Break Marker

Any MD3 character can be marked as a non-break character, by pressing [Extra]+[N] before typing the character. Any characters marked in this way will never appear as the last character in a typeset line. As an example, consider the space in a post-code (ST14 7AG): you would never want the two halves of the code to be typeset on separate lines, but if you type a space character in the middle, you cannot guarantee that this space will not be used to split a line when it is typeset. If you mark the space as a non-break character, the code will always be typeset on one line: press [Extra]+[N] followed by [Space] to type a non-break space.

Non-Break Marker

ST14 7AG
A Non-Break Space

Half-Return

Pressing [Extra]+[Return] in the Editor produces a new character, the Half-Return. This is just like a normal Return character, except that it gives only half the vertical space between lines. The half-return is especially useful for spacing paragraphs: instead of pressing [Return] twice between paragraphs, use one [Return] followed by one [Extra]+[Return] to give a shorter gap. The spacing between most of the paragraphs on this page was typeset using one normal return, followed by a half-return: the gap between this paragraph and the next was typeset using two normal returns.

Half-Return

'↵' is a Half-Return

Case Changing

One minor but useful improvement to the Editor is the inclusion of the [Alt]+[L] and [Alt]+[U] keys: pressing these will force the character under the cursor to be lower case and UPPER CASE respectively. For example, if you have a line of lower-case characters in the Editor and you want to change them all to upper-case, put the cursor at the beginning of the line and hold down [Alt]+[U] until the cursor reaches the end of the line.

Case Changing

Clear Text

The Text Editor can only be Cleared using [Extra]+[Can]: this makes it much more difficult than it was in MD2 to delete all the text by accident!

Clearing the Text

Typesetting

TYPESETTING AND WRITING

Fonts

Fonts

Typesetting uses MD3's three-font system, so that you can switch between the fonts using simple control codes embedded in the text. The settings in each Font menu are unique to each of the three fonts, so that the size, style etc of each one can be altered without affecting the others. Use the Extra keys to switch between fonts while Writing.

UNDOing Typeset

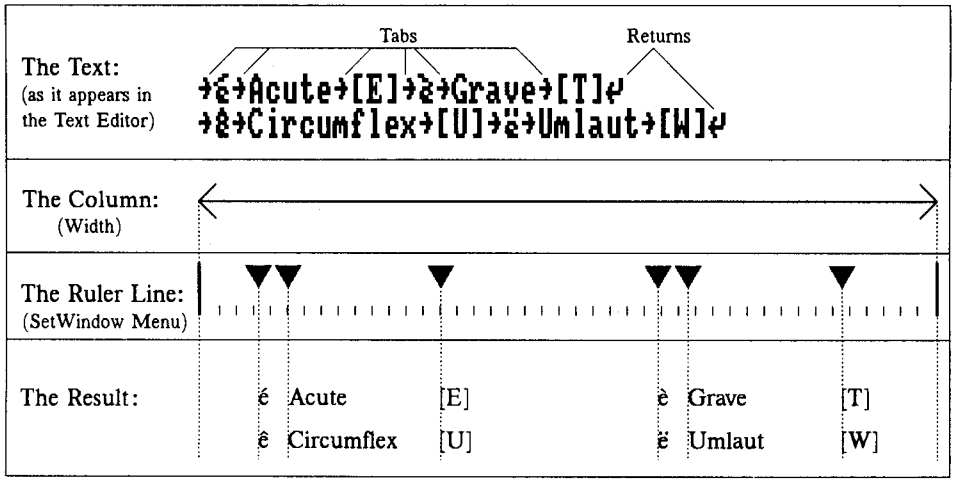
UNDOing

You can now UNDO a typeset by one line at a time. Instead of pressing UNDO, press [Extra]+[Del←] to UNDO just one typeset line. This is very useful for dealing with "Widows and Orphans": see appendix 5.

The Ruler Line & TAB Stops

The Ruler Line and TABs

Unlike MD2, MD3 has a system of tab-stops and a ruler-line for tabulating columns of text. The tab stops on MD3's ruler-line work by graphical position across the column. The ruler line has 120 positions, each of which can be set up as a tab stop: the ruler line always represents the full width of a Window column, which means that the actual distances between the tab stops will vary with the Window settings.



Note that it is not possible to import a ruler-line from word-processors such as LocoScript2 or Protext, because these rulers all work by character-position across a whole Page.

Tabs do nothing in Write: they are only effective in Typeset.

Stopping Typset: Ruled Lines

Stopping the Typeset Operation: the Line Pitch

If you [Stop] in the middle of a Typeset operation (or in the middle of UNDOing a Typeset), and then re-start the typesetting, the Line Pitch may become uneven. This will only happen if the Line Pitch of the font is not set to a multiple of 8 pixels (or of 16 pixels if you are using Half-Returns). It can easily be avoided by switching the Ruled Lines setting in the Typeset Format menu (see page 4-26) to the font you are using. This locks all typesetting to lines which are correctly spaced for the font.

This piece of text illustrates the effect of Stopping and re-starting the Typeset operation with the Ruled Lines switched off. The Line Pitch is set to 30, which is not a multiple of 8.

*

This piece of text illustrates the effect of Stopping and re-starting with the Ruled Lines switched to font 2, this font. The Line Pitch is still set to 30, but the lines are now evenly-spaced.

In both paragraphs, the typesetting was stopped after two lines (*), and then re-started immediately. The lines in the first paragraph become uneven after the re-start, but the Ruled Lines prevents this in the second paragraph.

Hyphenation: Soft Hyphens

Hyphenation

MD3 uses a soft-hyphen character, which can be typed by pressing [Extra]+[-]. If you are typesetting in Justified mode, you may find that if a long word occurs at the beginning of a typeset line, the previous line may appear too "stretched". If this happens, UNDO back to the beginning of the first line, press [F1] to display the text in the bottom window, and insert a soft-hyphen character at a sensible place in the middle of the long word. When you re-typeset, you should find that the first line now breaks at the hyphen.

If you re-typeset the same text later with the hyphen still in place but in such a way that it does not occur at the end of a line, the hyphen will not appear in the text at all: the typesetting system will ignore it unless it can use it at the end of a line. For example:

This line looks bad because the first word on the next line, antidisestablishmentarianism, is too long to fit, and the line is justified. To cure the problem, UNDO the typeset, and add a soft hyphen in the middle of the word.

This line looks better because the long word on the next line, antidisestablishment-arianism, is split by the soft hyphen. If we re-typeset the same word later on in a different position where it does not break a line, the soft hyphen will not appear, and the word antidisestablishmentarianism will appear intact.

↑
The hyphen is here, but you can't see it!

Graphics

GRAPHICS SECTION

Scale

Scale

The Graphics section (called "Design" in MD2) is used to display the Page contents at a scale of 2:1 or 1:1. MD2's Design section was limited by the fact that only a small area of the Page could be displayed on the screen at 1:1 scale, making the Design Window seem very small. MD3's Graphics Section can work at 2:1 scale as well as 1:1, allowing you to work on a larger area of the Page. Not all the operations are available at both scales: if you are working at 2:1, the Paint, Flood, Zoom, and Load and Save CUT operations appear "greyed out" in the menu because these operations can only be used at 1:1.

Scrolling

Scrolling

If you have a KeyMouse, you can Scroll the Graphics screen around the Page by holding down the centre button and moving the mouse. If you do not have a KeyMouse, use [Shift]+[↑↓←→] or the Scroll Map to scroll, as in MD2.

Stored Blocks

Stored Blocks

While MD2's Stored Blocks were limited to 4, and shared a memory allocation with the Fonts, MD3 can store a maximum of 9 Blocks, numbered 1-9, and has a total of 6K of memory reserved for them. Blocks are now stored in a data-compressed form, which means that the more fine detail there is in a Stored Block, the more of the Block memory it will occupy.

Paint

Paint

Paint is slightly different to the MD2 operation: the Brushes cannot be displayed in the Bottom Window, but are selected using Extra Row 2. The complete set of Paint Brushes is as follows:

PRINTING

Printing

Printing Speed

Speed

All printing is now considerably faster than it was in MD2, even though there is more data to send when printing a high-resolution Page. The fast Centronics / Parallel print drivers from the Utilities Disc are built into MD3: see **Options**.

PCW Printer

PCW Matrix Printer

The quad-density printer driver developed for ProSCAN is now included in MD3: all printing on the PCW's own printer is improved over MD2.

"Rough" 9-Pin printing

Rough Printing

A new "Rough" option has been added to the 9-pin printing menu. This produces a poor-quality but legible A4 printout at the correct scale in about 3 minutes. It is useful for checking page layouts and spelling.

The Print Queue

The Print Queue

The Print Queue now prints Page files as well as Area files, and there are several new Print Queue commands:

MARGIN** ***nn sets the left Margin as in the Print menu, in units of about 0.1"

GAP** ***nn moves the paper forwards (or backwards if the printer is capable of it) by "**nn**". "**nn**" can be followed by either "**mm**" (millimetres) or "**in**" (inches): if no units are given, "**nn**" is assumed to be the standard line-feed for the current printer (ie 1/216" for 9-pins, 1/300" for Deskjets/lasers, or 1/360" for 24-pins/Bubblejets.

PAPER** ***nn sets the Paper length: see your printer manual for an explanation of exactly what this means on your printer. The units "**nn**" are the same as for ***gap**, but "rounded" to the nearest sixth of an inch. You can also set the default Paper Length in the Options section.

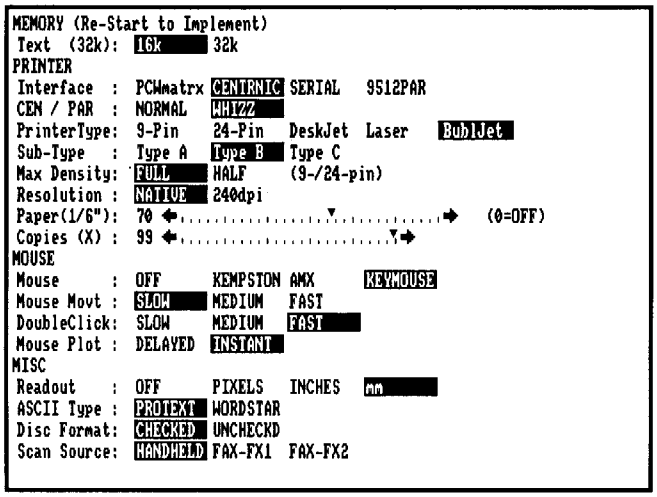
Printer Types and Sub-Types

Printer Types

The Printer Options have changed substantially, providing support for an even wider range of printers. These options should all be set correctly during the MD3MAKE process, but you may need to alter them later: see **Options** at the end of this chapter for more details of changes to the printing system.

Options

THE SYSTEM OPTIONS SECTION



There are a great many improvements in the System Options section, and this chapter contains only a summary of the most important features. See **Options** in the reference chapter, beginning on page 4-77, for full details. The Options are almost all set during the MD3MAKE process, and should not need changing unless you change your hardware set-up, or unless you answer some of the MD3MAKE questions incorrectly!

Memory

Memory Option

By default, the Text Editor has 16K of memory allocated to it. If you want to load a text file which is larger than 16K, you can increase the Editor allocation to 32K using this option: remember that if you change it, the change will not be implemented until you save the new Options file, Quit from MD3, and run it again.

Note: the extra 16K of text memory is taken from the memory normally allocated to fonts, so if you choose to use a larger Editor, you will have less room for fonts. This will affect the size of the fonts you can load: if you have a 512K PCW, increasing the Text allocation will mean that you can load only very small fonts.

Printer Options

Printer Options: there are now 8 Printer Options

Interface

The **Printer Interface** option is the same as it was in MD2.

CEN / PAR

The **CEN / PAR** option controls the Print-Speed driver which was included on the Utilities Disc, and which could be added to MD2. The driver is built into MD3, and can be selected by setting this option to '**Whizz**'. Whizz will increase the speed of almost all printing, but it is not compatible with the SCA "RamPac-Plus" or "Pro9256" printer interfaces, and it may not work properly with long printer cables: **Normal** printing will work with all printer hardware.

Printer Type & Sub-Type

The **Printer Type** and **Sub-Type** options have changed in MD3: the options are set during the MD3MAKE installation, but check the Reference chapter on Options for full details of which settings to use. **If you have a Bubblejet BJ10e printer,** MD2 required that you switched DIP-switch number 7 ON, to select Alternate Graphics Mode. To use these printers with MD3, set the AGM switch OFF: see the Options section in the Reference chapter for full details of all the Bubblejet options.

Max Density

The **Max Density** setting is rather like the old 24-pin **B** option: it is used to drive 9-pin or 24-pin printers which do not support the high-density graphics modes which MD3 normally uses. See the reference chapter for details.

Resolution

The **Resolution** option is effective only if the Printer Type option is NOT set to **9-pin.** It allows you to go back to the old MD2 system of Page formats: with the Re-Scale set to **240dpi**, the program will always select 9-pin-compatible Page formats, even if they are to be printed on a higher-resolution printer. This option is most useful if you have 512K of memory, but wish to use full A4-size Pages on a laser, inkjet or 24-pin printer. If you set this option to **Native** with a high-resolution printer and only 512K of memory, only A5 Page formats are available.

Copies (X)

The **Copies (X)** option sets the number of copies which are printed if the "Copies" setting in the Print menu is set to "X". Copies can be varied between 1 and 99.

Paper Length

The **Paper Length** option sets the default paper size for continuous paper: if this is set incorrectly when your printer executes a Form Feed, the printing on the next sheet will not begin in the right place.

Mouse Options

Mouse Plot

The only change to the Mouse options system is the addition of a **Mouse Plot** option. When drawing freehand with the mouse in the Graphics section of MD3, there is normally a slight delay after pressing the left button, before the program begins to draw lines. To make freehand drawing easier, this delay can be removed by setting the Mouse Plot option to **INSTANT**.

Miscellaneous Options

Readout Units

The **Readout** option selects the default state for MD3's Cursor Position Readout: see Readout above.

ASCII Type

The **ASCII Type** option is the same as in MD2, and the **Scan Source** option is the same as in the ProSCAN program.

Disc Format

The **Disc Format** option allows you to control whether the program Verifies a disc as it is Formatted: checking the disc slows down the formatting, but provides a better guarantee of error-free formatting.

FILING

Filing

There are many improvements to the Filing system, and several changes to file formats between MD2 and MD3.

Disc Formatting

Formatting Discs

The Filing Utilities menu now includes an entry called **FORMAT**: this is used to format floppy discs without having to leave the MD3 program.

Page Files

Page Files

MD3 has a new file-type "**.MDP**", which is used for loading and saving complete Pages. There are two new operations, **LoadPAGE** and **SavePAGE**, in the Layout and Typeset sections, which use MDP files. Note that Page files are ALWAYS loaded in Opaque mode: the old Page contents are lost when a new Page is loaded.

Template Files

Template Files

Templates have also been improved. As well as Window and Typesetting information, they now include the fonts and their settings, and (optionally) the contents of the current Page. This means that they effectively contain all the layout and style information required for a complete MicroDesigning job. When a Page is loaded as part of a Template, it is always loaded in Opaque mode.

The Default Template BOOT.MDT

Default Template BOOT.MDT

When MD3 is run, the program looks for a default Template called **BOOT.MDT**. On a hard disc, this is assumed to be on the same drive as the program. If you do not have a hard disc, MD3 will initially try to find **BOOT.MDT** on drive B, and if it does not find it on drive B, it will load it from the program disc.

This feature is particularly useful if you have a PCW8256 or 8512 computer. If you make an MD3 Start-Of-Day Disc on one of these computers, there is not much room left on the disc for the BOOT Template file: this is why the default Template which is created automatically by MD3MAKE contains only small fonts. If you want to change the default Template by saving a new Template file under the name **BOOT.MDT**, it is likely that there will not be sufficient space on the disc. If you save it on a disc in drive B instead, then insert this disc in drive B whenever you use your S-O-D disc in drive A, you will be able to have a larger **BOOT.MDT** file, which can contain bigger fonts. If you have a PcW9256, 9512 or 9512+, the capacity of drive A is much greater, and any BOOT Template will fit onto a S-O-D disc.

If there is no disc in drive B, or if the PCW has only a single drive, the BOOT Template will be loaded from the program disc in drive A. If MD3 cannot find a **BOOT.MDT** file in drive B or on the program disc, it will load a "Blank" Template which has the font called **BLANK.MDF** loaded into all three font slots. A message to this effect is displayed on the screen as MD3 is loading.

Blank Template

MDA Area Files

Area Files

The "**.MDA**" Area file format used in MD2 has been replaced in MD3 by a more efficient compression system, so there are now two different types of MDA file. MD2 and MD3 Area files can be loaded into MD3, using LoadAREA as normal: the program detects the different formats automatically.

MD3's SaveAREA operation allows you to save files in MD3 format, MD2 format or Screen format, as selected in the Extra menu options **A2**, **A3** and **S**. Note that some versions of the **Tweak** image manipulation program cannot load MD3 Area files, so you must use the **A2** format option if you are saving an Area file which you want to Tweak. You must also use the **A2** area format if you want to load the file into Micro-Design2. Remember that you can convert an A3 format Area to A2 format by loading it into MD3, and re-saving it with the A2 option selected.

Re-Scaling CUTs & Areas

Re-Scaling CUTs and Areas

During any LoadCUT or LoadAREA operation, you can now re-scale the image as it is loaded: when the program asks you to "Select where to Load" the Area, use [Space] and the cursor keys to adjust the frame to the size and shape you want. The old MD2 half- and double-size load options are also included in MD3.

Shades

Shades and Shade Files

The Icon system has been removed from MD3, and replaced by a selection of 32 pre-defined "Shades". These are used for all the Paint, Flood and Filled-Shape operations for which MD2 used icons. Shade files (suffix **.MDS**) can be loaded using the **LoadSHAD** operation in the Graphics section of MD3, and several sets of Shades are supplied with the program.

Print Queue Files

The Print Queue

The Print Queue is now separated from the main Text Editor (see above), and always uses a new file-suffix, "**.MDQ**", for Print Queue text files. Queues can now use Page files as well as Area files, and there are several new Print Queue commands: see Printing above.

Lists of Files

Listing File-Names

The Filing Window in MD2 could only list a maximum of 25 full file names. In MD3, the Filing Window is bigger, and can list 35 full names, or 49 file-names without a suffix. As in MD2, you can scroll through the list of names, and MD3 can list a maximum of about 100 file-names.

REFERENCE

This chapter is a complete list of every operation and feature in MicroDesign3. Most of the list is divided according to MD3's different Sections (Layout, Typsetting, Text Editing, Graphics and Options), but some subjects (*eg* the Filing operations and Font system) are common to several of the Sections: these common features will be described first. The chapter covers Filing, Fonts and Text, Page Formats and Memory, and then the Typeset, Layout, Editor, Graphics and Options sections.

The FILING OPERATIONS

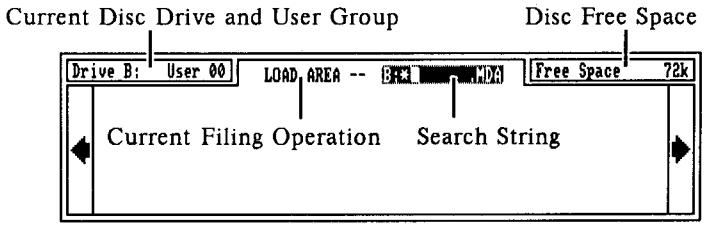
Filing Operations

MicroDesign has a simple system for loading and saving the files used within the program. There are seven different types of file: these are **Text**, **Template**, **Page**, **Area**, **Font**, **Print Queue**, and **Shade** files. The Operations for loading and saving these files appear in the Operations Menus: files can always be loaded or saved in the appropriate Section of the program. For example, Text files can be loaded or saved in the Text Editor section, and Page files in the Layout and Typesetting sections. Font and Shade files cannot be Saved, only Loaded.

The Filing Window

The Filing Window

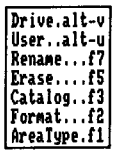
Whenever a filing operation is selected, the Filing Window appears, and the program checks the disc which is currently logged in. The Filing Window displays the following information:



The Filing Utilities

Filing Utilities

Whenever the Filing Window appears, the bottom right corner of the screen displays the Filing Utilities menu: this is a list of operations which can be used at any time during a filing operation to change the current disc or user number, or to tidy up the contents of the disc.



The Drive and User utilities allow you to change the Disc Drive and User Group when loading or saving a file. As well as clicking over the entries in the Utilities

[Alt]+[Drive]
[Alt]+[User]

menu, you can achieve the same effect by pressing [Alt]+[Drive-Letter] to change Drive, (*eg* [Alt]+[B] for drive B), or [Alt]+[Group-Number] to change Group (*eg* [Alt]+[2] for User Group 2.

Note that these Utilities can only be used AFTER a Load or Save operation has been selected. If you wish to access these utilities without Loading or Saving a file, you must select a Load or Save operation, use the filing utility, then abort the operation by pressing [Stop] or clicking over ☒. See page 4-10 for a full discussion of the Filing Utilities.

Loading and Saving

The sequence of actions for loading or saving all types of file is identical, and will now be explained step-by-step. This is followed by a more detailed explanation of the differences between file-types, and of the filing Utilities.

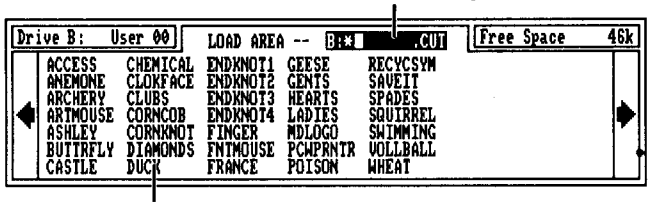
Step by Step: LOADING A FILE

Loading a File

Whenever a load operation of any type is selected, the bottom of the screen is taken over by the Filing Window. In the middle of the Filing Window for any **Load** operation, a 'Search String' appears: the Search String allows you to display a list of all the appropriate files on the disc, so that you can select one from the list by clicking over it. When you have selected a Load operation, click over ☑ to enter the search string and list the files.

Search Strings

The Search String



The File List: in this case, all the CUT files on Drive B

Search strings usually use the 'Wild Card' characters instead of filenames: if you are unfamiliar with Wild Card characters, consult your PCW CP/M Operating System manual. The last three letters of the file name (the file **Suffix**) usually denote the type of file to be loaded: for example, a file with the suffix '.MDP' is a MicroDesign Page file. You cannot change the file-suffix when you load or save most of the MD3 file-types, although Text files can have any suffix: a complete list of the file suffices is given later in this chapter.

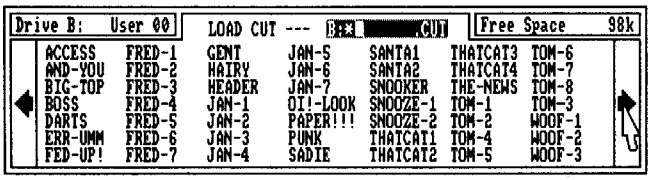
Here are some examples of search strings for different purposes:

A:*.MDA	Show all **MDA** Area files on drive A
B:*.MDF	Show all Font files on drive B
A:M*.MDT	Show all Template files on drive A which have names beginning with M
A:*.*	Show all files on drive A

Listing & Selecting Files

When you have entered the Search String (use ☑ or [Enter], or double-click over the search string), an alphabetic list of the files which fit the search string appears in the Filing Window (see opposite), and you can select a file name by clicking over it: MD3 will now load the file you selected. If the file is an **MDA** or **CUT** image file, a frame showing the size of the image appears on the screen, and the program asks you to select where on the Page you want to load the file: position the frame using left button or the cursor keys, then use ☑ or [Enter] to load the file.

If the number of files is too great to fit in the Window, click over the Mouse Arrows at either end of the Window (or use the right cursor key) to display the other filenames.



If the list of files seems to be incorrect or incomplete, try re-logging the disc by pressing [Alt]+ the drive letter ([A], [B] etc), but remember that the maximum number of files which can appear in any MD3 file-list is about 100.

Notes on File-Names

File-Suffix

Because most of the file-types used by MD3 are defined by their file suffix (**.MDA**, **.MDP** etc), it is usually impossible to load the wrong type of file by mistake. In the examples above and earlier in this chapter, the Filing Windows illustrate the **LoadCUT** and **LoadAREA** operations. Both types of file use fixed suffices (**.CUT** and **.MDA**), so the suffix is shown at the end of the Search String, and it cannot be altered. If you are using the **LoadTEXT** operation (which can load files with any suffix) or any of the Filing Utilities, you can change the suffix in the Search String, but you must be careful not to change the text-file suffix to MDA, MDP or any of the other MD3 suffices which are used for different (non-text) files.

Renaming MD3 Files

Renaming Files

Note that you should NEVER change the suffix of an MD3 file by re-naming it. Different suffices are used by the program to distinguish between different methods of encoding data inside files, and changing a file-suffix without changing the information in the file will usually mean that the program will not be able to load it correctly.

Step by Step: SAVING A FILE

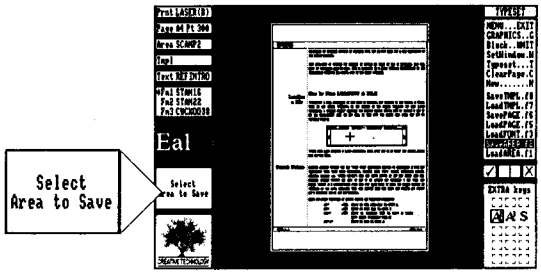
Saving Files

When you select a Save operation, the Filing Window appears at the bottom of the screen displaying current disc, user number and free space. You should now type the filename you want to use into the space in the middle of the window. If you have loaded or saved a file of the same type before, the name of that file appears automatically in the string: this is only a suggestion, and can be altered by deleting and re-typing. Use ☑ or [Enter] to save the file.

Cuts, Areas & Templates

Saving Cuts, Areas and Templates

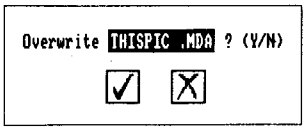
When you save an Area or Cut file (ie a part of the Page), the program will ask you to define the area to be saved before the Filing Window appears. When you save a Template, the program will ask you whether you want to include the contents of the Page in the Template file.



Confirm Stage

Confirm Stage

When saving to a file which already exists on the disc, you will be asked to confirm that the disc file is to be overwritten: this is to protect files against accidental erasure. If you want to keep the old version, change the file-name so that the new version has a different name.



TYPES OF FILE

Types of File

This section contains information about all the different types of file used by MD3.

TEXT FILES (.*)

Text Files

Text files are simply files of characters (letters, numbers, punctuation etc) usually created by word-processor programs. In MD3, text files are created in the Text Editor. They can include Control Codes to select the font, the character styling options (Bold, Double-strike, Highlight, Italic, Outline and Underline), and the format in which the text will be typeset: see the discussion of Control Codes in the Text Editor on page 4-47 for more details.

File-Suffix

Text File names in MicroDesign can have any file suffix: this means that files which are not ASCII or word-processor files can be loaded as Text files by mistake. This will not cause MD3 any problems, but it may produce some interesting displays on the Text Editor screen! We suggest that you use the suffix '**.TXT**' for your text files, so that they can be identified easily.

File Formats

When the **SaveText** operation is used, the file is always saved in MicroDesign Text file Format: **note that text files Saved in MicroDesign format cannot be re-loaded into a Word-Processor program.** If you want to create text in MD3 and export it to another program such as LocoScript, use the **SaveASCI** operation: this stores the text as a standard ASCII file, omitting all the control codes which can only be understood by MD3. ASCII files can usually be loaded into other word-processors (**Insert Text** in LocoScript2), or used as CP/M Submit files such as PROFILE.SUB: see your CP/M or LocoScript manual for more information.

ASCII Files

Text Capacity & File Size

Note that the Text Editor has a capacity of either 16Kb or 32Kb, according to the settings in the Options section of the program. If you attempt to load a Text File which is too large to fit in the Editor, the program will load as much of the file as possible (while still allowing some space for editing the file), and then issue a warning that the file has been shortened. **Re-Saving a file under its old name after it has been shortened in this way may result in the loss of data from the old file**, so always ensure that you re-save truncated files under a different name from the original.

For more information about importing word-processor files, see Appendix 3.

PRINT QUEUE FILES (.MDQ)

Print Queue Files

Print Queue files are loaded and saved in the Print Queue Editor, a part of the Text Editor. Queue files are really text files, but they have a special suffix, '**.MDQ**'. A Print Queue does not contain any control codes: it is simply a list of files which are loaded and printed in sequence, automatically: see Print Queue, page 4-59.

Template Files

TEMPLATE FILES (.MDT)

Template files are exclusive to MD3, and cannot be used in any other program. They can contain all the information about the current settings for Typesetting, including Page format and the Window.

What's in a Template

Template files **always** contain the following information:

The **Page Format**
The **Window** position
The settings in the **SetWindow** menu, including the Ruler Line
The **Format** settings in the **Typeset** menu
The three **Fonts**, and their menu settings

When a Template file is saved, the current settings of all these features are stored. The program will also ask you if you want to include the Page Contents in the Template.

Loading Templates: The Page Contents

When a Template file is loaded, the new Window, Typesetting and Font information is read from the disc file, and the old information is lost. If the Template includes the contents of the Page, the program will ask you whether you want to load the Page along with the rest of the Template: use ☑ or [Enter] to load the Page data (remember that Pages are always loaded in Opaque mode), or ☒ or [N] to keep the current Page contents intact.

If the current Page format is not the same as the format used in the Template file, the program will ask you to confirm that you want to change the Page format. If you do, the old Page contents will be lost.

The Default Template: BOOT.MDT

The Default Template File, BOOT.MDT

When MD3 is run, the program looks for a default Template called **BOOT.MDT**. On a hard disc, this is assumed to be on the same drive as the program. If you do not have a hard disc, MD3 will initially try to find **BOOT.MDT** on drive B, and if it does not find it on drive B, it will load it from the program disc.

This feature is particularly useful for users of PCW8256 and 8512 computers. If you make an MD3 Start-Of-Day disc on one of these computers, there is not much room left on the disc for the BOOT Template file: this is why the default Template which is created automatically by MD3MAKE contains only small fonts. If you want to change the default Template by saving a new Template file under the name **BOOT.MDT**, it is likely that there will not be sufficient space on the disc. If you save it on a disc in drive B instead, then insert this disc in drive B whenever you use your S-O-D disc in drive A, you will be able to have a larger **BOOT.MDT** file, which can contain bigger fonts.

If there is no disc in drive B, or if the PCW has only a single drive, the BOOT Template will be loaded from the program disc in drive A.

If you have a PcW9256, 9512 or 9512+, the capacity of drive A is much greater, and any BOOT Template will fit onto a S-O-D disc.

Blank Template

If MD3 cannot find a **BOOT.MDT** file on drive B or on the program disc, it will load a "Blank" Template which has the font called **BLANK.MDF** loaded into all three font slots. A message to this effect is displayed on the screen as MD3 is loading.

PAGE FILES (.MDP)

Page Files

Page files are exactly what you would expect: they contain the contents of the complete Page, together with information about the Page format, and they are stored on disc with the suffix "**.MDP**". If you try to load a Page with the wrong Page format selected, the format will be changed to suit the new Page, and the contents of the old Page will be lost.

Re-Scaling Pages

Using LoadPAGE, Pages are always loaded in Opaque mode, at full size. If you want to load a Page onto the wrong format, or re-scale it as it is loaded, use the **LoadArea** operation, and set the AreaType to Page: see Areatype below. Using this technique, you can load (for example) a 24-pin Page file onto a 9-pin Page Format, re-scaling it so that it fills the whole 9-pin Page area.

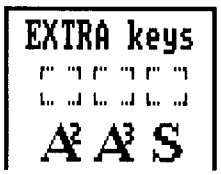
AREA FILES (.MDA etc)

Area Files

Saving Different Area-Types

Screen Files

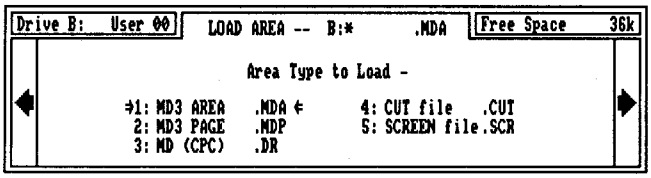
Area files are image files of any size up to and including a whole Page: they are loaded and saved from the Typeset and Layout Sections as data-compressed **.MDA** files. Note that MD3 uses a different type of **.MDA** format from MD2: you can load MD2 Areas into MD3, but you cannot load MD3 Areas into MD2. By default, MD3 saves Areas in its own MDA file format, but the SaveAREA operation also includes options for saving in MD2's MDA format, and in PCW Screen format for export to other programs. Screen files (see below) are always saved with the file-suffix **.SCR**. The three options for file format in SaveArea appear in the Extra Menu as **A2**, **A3** and **S**.



Area Files (cont)

Area-Types

The **LoadArea** operation can be used to load image files from several different graphics formats: this allows you to import images into MD3 from a variety of other software packages including Stop Press and Master-Scan. When LoadArea is selected, an extra entry appears at the bottom of the Filing Utilities menu which allows you to select the Area File-type from a menu:



This feature of MD3 is particularly powerful, since it gives you access to the many library discs of useful clip-art which are already available. Area file types supported include the Stop Press **.CUT**, the **.DR** file-format used by MicroDesign for the CPC computers, and ordinary PCW Screen files (see below).

Note: when loading CUT Files as Areas, you may find that the program produces some spurious extra dots at the right-hand edge of the image. These can easily be removed without affecting the picture. You must use the LoadCUT operation in the Graphics section to guarantee the perfect loading of all CUT files.

Re-Scaling Areas, Pages & CUTs

Re-Scaling Area Files

All **.MDA**, **.MDP**, **.DR** and **.CUT** files can be loaded at Half, Normal or Double size (providing that there is sufficient space on the Page): these size options are set by Extra row 4 in the **LoadArea** operation. If the Area to be loaded will not fit on the current Page format, this size option is set automatically to Half to enable the file to be loaded, and a message to this effect is printed on the screen. During any LoadArea operation, the size and shape of the Area to be loaded can be changed: when the program asks you to "Select where to Load" the Area, use [Space] and the cursor keys to adjust the frame to the size and shape you want. Remember that re-scaling *always* results in a loss of quality, but this affects some types of image more seriously than others: for example, typeset text or grey-shaded areas will be affected much more severely than line-drawings.

Screen Files

Screen Files (.SCR) are a special kind of Area file. Some PCW Graphics software allows the saving of a full PCW 'screen-dump' into an uncompressed 'Screen Format' file. MD3 will only load a screen file if it has the suffix '**.SCR**', but other programs may create screen files with different suffices. If you have a screen file with a different suffix, you will have to Rename the file before you can load it into MD3.

Parts of the Page can be Saved as Screen Files using the Extra row 4 option in the **SaveArea** operation: this allows you to design Screens which you can then load and use in other PCW programs.

Re-Scaling Pages

Re-Scaling Pages

MD3's own '**.MDP**' Page format is also included as an AreaType. This feature allows you to load a Page as a bit-image without changing the Page format, so that the contents of the Page file data can be re-scaled, or loaded onto an MD3 Page which is the wrong format for the Page file.

CUT FILES (.CUT)

CUT Files

CUTs are image or picture files which can be loaded and saved in the Graphics section of MD3. CUT files are included in MD3 for two reasons: to allow the storage on disc of small graphic images, and to allow MD3 users to import '**.CUT**' Clip-Art files supplied as library material to accompany other PCW DTP packages such as Stop Press.

'**.CUT**' files are uncompressed, and are therefore suitable only for storing small images. CUT files can only be loaded if the Graphics Scale is set to 1:1.

FONT FILES (.MDF)

Font Files

MicroDesign Font files consist of a 124-character set, and 16 accents which can be added to any of the characters. As well as the fonts which are supplied with MD3, there are also several Extra Fonts discs available from Creative Technology. To load a new Font, use the **LoadFONT** operation in the Typeset or Graphics sections of MD3.

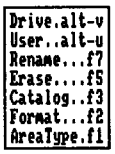
For more information about Fonts and MD3's text system, see page 4-11, and appendix 5.

SHADE FILES (.MDS)

Shade Files

The Graphics section of MD3 uses a set of "shade" patterns for Painting, and for Filled Shapes and Floods. A Shades file consists of 32 different patterns, and several Shades files, suitable for different purposes, are supplied in the MD3 Library. Shade files are loaded using the **LoadSHAD** operation in the Graphics section.

THE FILING UTILITIES



The Filing Utilities are simple to use, since they are all controlled by on-screen instructions.

Drive

Drive changes the current disc drive to A:, B: etc up to F: by pressing [Alt]+[A], [Alt]+[B] etc. Pressing [Alt]+[V] cycles through the drive letters. Whenever a new drive is selected in this way, MD3 reads the directory information from scratch in a process called 'Re-Logging' the disc, or 'Re-Initialising' it: you should do this after changing discs, before trying to load or save files to a new disc.

Note: MicroDesign supports drives A to F, but NOT drive M. Any files stored in drive M will be lost when MicroDesign is run. This is because MicroDesign uses all the available memory in the computer, leaving insufficient for a memory drive.

User

User: you can change the current User Group for the disc by pressing [Alt]+[0]-[9]. Numbers higher than 9 can be accessed by pressing [Alt]+[U], to cycle through all 15 user numbers. User numbers are a feature of CP/M: see your CP/M manual for more details. Also note that LocoScript 2 Groups use CP/M's User Group system: Groups 0-7 are the same as LocoScript, and Groups 8-15 are used by LocoScript for storing Limbo files.

Rename

Rename asks you for the name of an existing file: this can be selected using a Search String and the cursor keys or mouse, as with any file selection in a Load operation. When you have chosen a file to rename, a new filename is requested. When this name has been entered (use [Enter] or ☑), the new name is assigned to the file. **Note:** do not use Rename to change the file-suffix of image files such as CUTs, MDAs or MDP Pages.

Erase

Erase: when the name of an existing file has been entered (see **Rename** above), the file is erased from the disc after a confirm stage.

Catalogue

Catalog: used to list the files on a disc. Note that this list is purely for on-screen information: file-names cannot be selected from the Catalog list for loading. You can use different Search Strings to list different file-types: see **Search Strings**, page 4-2.

Format

Format: this formats a floppy disc in any drive. All data on the disc will be lost. Note that it is not possible to format a hard drive by accident using this operation.

Area-Type

AreaType: used only in the **LoadArea** operation, this utility allows selection of different file formats. It is used to import Graphics files from a variety of other PCW packages: see **LoadArea** above. **Note that the Areatype does not affect the SaveArea operation**, only LoadArea: see page 4-7 for details of saving different Area formats.

THE TEXT AND FONT SYSTEM

Text & Fonts

MD3's text system is based around a unique font and character set which is intended to provide the maximum support for typesetting work both in English, and in any European language which is based on the Roman alphabet: this means that MD3 can typeset perfectly in French, German, Italian, Spanish etc. It also includes the special characters and accents required for the Scandinavian and Baltic languages, Hungarian, Polish, Romanian, Slovenian, Croatian, and (to the best of our knowledge) all other European alphabets which are NOT based on Greek or Cyrillic characters. Most of the extra characters and accents can be imported from a LocoScript2 document.

MicroDesign2 Fonts

MicroDesign2 Fonts

Font files from the MicroDesign2 library can be loaded and used in MD3, but they have only 96 characters and no accents: they also lack the Kerning Table which makes kerning possible in MD3. It is not possible to add the extra characters to an MD2 font, or to convert an MD2 font to MD3 format. The size limit on MD2 fonts does not apply to MD3 fonts: see chapter 3 for information about the differences between MD2 and MD3.

THE MD3 CHARACTER SET

The MD3 Character Set

An MD3 Font consists of 124 characters, and 16 accents which can be added to any of the characters. The full character set is listed below: note that some of the characters are not shown on the PCW's keyboard, and can only be entered by pressing combinations of keys.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - = - + ! " £ $ % ' & * ( ) [ ] { } ◇ ; : # , . / ? ½ @

¹ ² ³ · ł d % æ œ ø † ⁺ « » ‘ ’ ¡ • ¿ ß Ł Đ © Æ Œ Ø ° ‡ ¼ ¾ ⅓ ⅔

See the Text Editor chapter, page 4-53, for a full table of the characters, the key-combinations used to type them, and the numbers used by the program to represent them in MD3 Text files. **Note that one or two of the larger fonts supplied with MD3 do not have full character sets:** these are intended for headlines and posters.

Accents

ACCENTS

The accents are added to characters by typing the accent first, then the character: for example, typing [Extra]+[E] gives an Acute accent, so to type a letter 'e' with an 'acute' accent, type [Extra]+[E] then the letter [E]. The accents are all typed by pressing [Extra] with the key indicated in square brackets in the table below:

é	Acute	EXTRA [E]	è	Grave	EXTRA [T]
ê	Circumflex	EXTRA [U]	ë	Umlaut	EXTRA [W]
ě	Hacek	EXTRA [I]	ė	Ring	EXTRA [A]
ẽ	Tilde (Nenya)	EXTRA [P]	ė	Overdot	EXTRA [Q]
ē	Macron	EXTRA [O]	ĕ	Breve	EXTRA [S]
ő	Double-Acute	EXTRA [R]	ė	Apostrophe	EXTRA [K]
ę	Underdot	EXTRA [H]	ę	Comma	EXTRA [G]
ę	Cedilla	EXTRA [D]	ę	Ogonek	EXTRA [F]

The accents in the diagram have all been added to a letter "e", but they usually appear with different letters: the "tilde" ([Extra]+[P]) is normally used with a letter "n" in Spanish, the "apostrophe" accent [Extra]+[K] is used with the letters "t" and "l" in Czech and Slovak, (or so we are told!).

Kerning

KERNING

MD3 fonts are designed with a "Kerning Table". Kerning means moving certain pairs of characters closer together (or further apart) as they are typeset, because the shapes of the characters create an uneven effect if they are typeset normally. Kerning can be set On or Off for each font.

As an example of Kerning, consider the word AWAY: all four characters must be 'overlapped' a little to avoid giving the appearance of an excessive gap between them:

AWAY (without kerning)

AWAY (with kerning)

The Kerning Table which is built into each font is a list of the character combinations which need to be adjusted, and the distances they must be moved when typeset together. For example, a Kerning Table would almost always include the pairs 'AW' and 'AV', and combinations of upper and lower case characters such as 'Ta' and 'Wo'. The Kerning Table is stored as a part of the font, and cannot be modified within MD3, although the Kerning can be switched off altogether for any of the fonts.

Kerning is used by both the Write and Typeset operations. In Write, the kerning will only work properly if you type without using the cursor keys: if you delete back through text you have Written, be careful to delete and re-type complete words, not parts of words.

Non-Proportional Fonts

Note that non-proportional fonts have no kerning tables, because kerning would stop them being non-proportional. The kerning feature is set On or Off for each individual font in MD3: when a proportional font is loaded, the kerning is automatically switched On for that font, but when a non-proportional font is loaded, the kerning for that font is set to Off. These are only default settings, and they can be changed if required.

USING FONTS

Using Fonts: The BOOT Template

MD3 must have three fonts loaded at all times: when the program is run, the three fonts are loaded as part of the default Template file, called **BOOT.MDT**. If the font you want to use is not one of the three "default" fonts, you can load it into the program using the **LoadFONT** operation in the Typeset or Graphics sections. You can also select your own set of start-up fonts by loading the fonts you want, then using SaveTMPL to save a new Template called **BOOT.MDT** on your Working program disc, or on a disc in drive B: see the note about Template files in the Filing section, on page 4-6.

The Extra Keys

When Writing or Typesetting, you can select which of the three fonts you want by clicking over the 'FNT' numbers in the Extra menu.

When Typesetting, you can also switch between the fonts automatically using control codes which are embedded in the Text: see the Text Editor, page 4-39.

For some general tips on Typography and a full catalogue of the fonts in the MD3 package, see appendix 5.

FONTS AND MEMORY

Fonts & Memory

Fonts can occupy a large amount of the computer's memory when they are loaded into MD3, so the amount of memory fitted to your PCW can affect whether you can load a particular font or combination of fonts. MD3's fonts can occupy as much as 96K of memory on a 1Mb PCW, or as little as 16K on a 512K PCW: this means that there is a wide variation between the fonts which can be loaded and used with different memory configurations. If you try to load a font which is too big to fit into the font memory, the program will display the message **"NOT ENOUGH FONT RAM"**. If you do not need to use three different fonts, you can load the blank font which is supplied in the library (called **BLANK.MDF**) into one or two of your font slots, to make as much memory as possible available for loading one big font.

'Not Enough Font RAM'

Large Fonts

Even on a 512K PCW, there is normally at least 32K of memory available for fonts: this is sufficient to load a reasonable range of sizes, say STAN13, STAN16, and STAN22. If your PCW has 768K of memory, there will normally be 64K available for fonts: this will allow you to load, say, STAN16, STAN22 and a larger font such as PAUL45. If you want to use the largest fonts (such as GRDIAN66), you must have 1Mb of memory fitted to your PCW, giving you 96Kb of font memory: even with this much memory, you can only load one very large font, with medium or small fonts loaded into the other two font slots.

The very largest fonts, such as GRDIAN66, will not even fit into 64K of memory if all the characters are included in the font. They are therefore supplied as incomplete fonts, with some characters missing: see appendix 5 for full details.

Remember that you can add memory to your PCW using the Creative Technology RamPort.

TEXT EDITOR AND FONT MEMORY

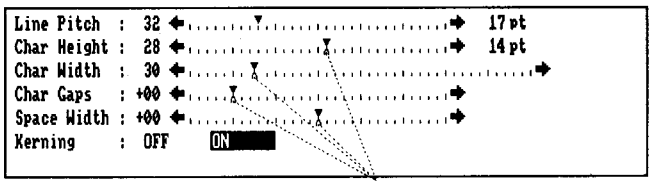
Text Editor & Font Memory

On any PCW, you can use the Options section to allocate an extra 16K of memory to the Text Editor, making 32K of Editor memory altogether. This extra 16K is always taken from the Font memory: with a 32K Text Editor allocation, the Font memory is reduced to 16K, 48K or 80K on 512K, 768K and 1Mb PCWs respectively.

CONTROLLING THE FONTS: THE FONT MENU

The Font Menu

Whenever you are using Write or Typeset, you can bring up the Font Menu at the bottom of the screen by pressing [F5]. This menu controls the size at which the letters are placed on the Page, the spacing between lines, and the spacing between individual characters and words. There is a separate menu for each of the three fonts, so the fonts can have different settings if required: to access the three font menus, display the current one, then use the Extra keys to select any of the three fonts.



Default Settings

All the font menu settings adjust themselves to sensible defaults whenever a new font is loaded.

LINE PITCH

Line Pitch

The vertical distance between each typeset line is called the Line Pitch. You can vary the Line Pitch between 0 and 120 pixels (about 64 "Points"). The Line Pitch can also be changed by the Ruled Lines setting: see "Ruled Lines", page 4-26.

CHAR HEIGHT

Character Height

This controls the height of the characters, and like the Line Pitch, it is displayed in the menu both in pixels and (approximately) in "Points". The original size of the Font is displayed below the scale as a small triangle. **Note: we recommend that all fonts are used at their original sizes whenever possible,** because re-scaling a font always reduces its printed quality. If you have to re-scale a font, try to multiply or divide the *pixel* height by 2, 3 or 4, to minimise the degradation.

CHAR WIDTH

Character Width

This allows you to re-scale the characters horizontally. See the note above about re-scaling fonts.

CHAR GAPS

Character Gaps

This allows you to vary the gap between each typeset character. The default gap is defined in the font, but you may need to reduce it by a small amount to make a piece of text fit on the Page or column, or increase it to make the text fill a Page. See also Space Width overleaf.

Space Width

SPACE WIDTH

The width of the [Space] character can be varied using this setting. Reducing this is the best way to "shorten" text by a small amount, to make it fit into a Page or column, especially if you are typesetting in narrow columns.

Kerning

KERNING

MD3 fonts are defined with a "Kerning Table", that is a list of pairs of characters which require slight alterations in the spacing between them. For a full description of Kerning, see page 4-12. The Kerning setting in the font menu can be used to switch the Kerning On or Off: the best results are usually obtained by leaving it On.

Note: some of MD3's special typography effects (eg long dashes) rely on the font being used at its original size and spacing, with the kerning switched on. See Appendix 5 for details.

Extra Keys: Style Options

The Extra Features

As well as the controls in the font menu, there is also a set of Style options associated with each font: these are selected using the Extra menu when Writing or Typesetting, and are used to select Bold, Underline, Italic, and the other character styles. As with the font menu, there is a separate set of style options for each font, and changing the style of one font does not affect the others.

The six style options are:

Bold Text

Double-Strike Text

Highlight Text

Italic Text

Outline Text and

Underlined Text.

Unlike the font menus, the style settings can be changed automatically in the middle of a typeset operation, using the Style Control codes. The six styles operate independently, and can be used in any combination: this means, for example, that your text can be Outlined, Underlined and Italic, all at once, if you wish. See the Text Editor, page 4--51, for details of how to use these codes, and Appendix 3 for information about importing them from word-processor files.

PAGE FORMATS

Page Formats, Printers, and Memory

The Theory

MD3 can construct its Page in a variety of different Formats. This is necessary because different printers use different *Resolutions*, and the program must construct the Page in a format which is suitable for the printer you are using. As an example, let's consider the two most popular printer types, the PCW's own 9-pin and the Bubblejet printers, and how these printers use an A4 sheet of paper.

Inside the computer, MD3 stores the Page as a pattern of dots, and each dot requires one 'bit' of memory. Memory is normally measured in 'K': one 'K' is 1024 'bytes', and each byte consists of 8 bits, so each 'K' of memory can store 8192 dots.

9-pin printers are normally capable of printing 240 dots along each inch of a horizontal line. An A4 sheet is 8" wide, so a total of 1920 dots is required for each horizontal line of printing. Vertically, 9-pins use 108 dots for each inch, and an A4 sheet is about 11" long, so the Page will be about 1280 dots high. This means that the number of dots required to print a complete page on a 9-pin printer is about 1280x1920, which is a total of over 2.2 million dots. Since each "K" of memory holds 8192 dots, a complete 9-pin Page requires over 276K of memory, and the Page must be constructed as a pattern 1280 dots high and 1920 dots across.

Prnt 9-PIN(A)
Frmt A4 PT 240

9-Pin:
960 x 1280
8" x 11.85"

Now consider the Bubblejet printer (or 24-pin printers, which use the same resolution). These printers use a horizontal resolution of 360 dots-per-inch, which means a total of 2880 dots across the 8" Page. The vertical resolution is 180 dots-per-inch, so for a Page which is 11" high, the printer needs 1980 dots. This gives a total of over 5 million dots, requiring nearly 700K of memory.

Prnt LASER(A)
Frmt A4 PT 300

Deskjet / Laser
1152 x 1680
7.68" x 11.2"

Note these two separate but related issues: a higher-resolution printer requires more dots and therefore more memory, but it also requires the dots to be arranged differently. This is why MD3 has to use different Page formats for different printers. Note also that the size of the Page you can construct depends on the amount of memory in your PCW, but that you need less memory to design an A4 Page on a 9-pin printer than you need for the same size Page on a 24-pin or Bubblejet printer. The more dots there are on the Page, the smaller each dot, and the better the print quality: smaller dots mean better printouts.

Prnt BUBJT(A)
Frmt A4 PT 360

24-Pin / Bubblejet
1344 x 1920
7.46" x 10.66"

The third type of printer, the Deskjet or Laser type, has a resolution of 300x150 dots-per-inch. It therefore requires less memory than a 24-pin printer, but more than a 9-pin.

The three pictures of MD3 Pages (right) show the relative sizes of the three different A4 Portrait formats for the three types of printer, as they appear on the Layout and Typeset screens.

Disc Space

Disc Space

Because the bigger A4 formats use a large amount of data for each Page, you may find that the Page files stored on disc are very large too. The data-compression used by the SavePAGE operation does reduce the disc space required to store a Page, but the effectiveness of this compression depends on the amount of small detail on the Page. In the most extreme case of an A4 24-pin (or Bubblejet) Page covered in small detail, it is possible to create a Page which takes up over 180K of disc space, and therefore cannot be saved on a PCW8256 or 8512 A: drive disc.

USING PAGE FORMATS IN PRACTICE

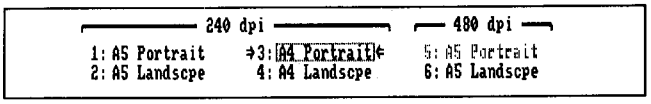
Selecting Pages: The New * Operation

When you select the **New** operation, the program displays a menu of the available Page formats at the bottom of the screen. The formats in the menu are those which are suitable for the Printer Type which is selected in the Options section: this means, for example, that if you have set the printer type to "Bubblejet", you will be offered only 360dpi Page formats (unless you set the 'Resolution' Option to '240DPI': see Printer Options, page 4-82), because 360 is the correct resolution for Bubblejet printers .

Some entries in the **New** menu may be "greyed out": this indicates that although these formats are suitable for your printer, your computer does not have enough memory to use them.

Here are some examples of the **New** menu, illustrating the Page formats available with different combinations of memory and printer. The Resolution option (page 4-82) is set to Native for all these examples.

Printer 9-pin
Memory 512K



Printer Deskjet/Laser
Memory 768K

Printer 24-pin/Bubblejet
Memory 512K

Printer 24-pin/Bubblejet
Memory 1Mb

A5 Pages

A5 Pages: Formats 1 & 2

MD3 offers proper A5 page formats: format 1 is a "Portrait" A5 Page, and format 2 is "Landscape" A5. The A5 formats are always printed in the opposite orientation from A4 Pages: if you want to print two A5 Portrait Pages side-by-side on an A4 sheet of paper, use Page format 1 (Upright A5) for each page, and print them one after the other.

If you have...

a 9-pin printer-

If you are using a 9-pin printer with 512K of memory, the A4 Page is a little short. If you have 768K of memory, the Page is longer, giving a full A4 height. 9-pin A5 Pages are always full-size, irrespective of memory.

a Deskjet or Laser printer-

If you are using a Deskjet or Laser printer (300dpi) with only 512K of memory, the A4 formats are not available, and A5 formats are full-size. With 768K or 1Mb of memory, you will get full-size A4 formats.

a 24-pin or Bubblejet;

If you are using a 24-pin or Bubblejet printer (360dpi) with only 512K of memory, even A5 formats are shorter than full-size, and A4 formats are not available. 768K of memory gives full-size A5 Pages and short A4 formats, but a full 1Mb of memory is required for full-size A4 formats.

...512K Memory-

If you only have 512K of memory but you still wish to use a 24-pin, Bubblejet, Deskjet or laser printer, you will find that the size of the Page is reduced. You will still be able to use the full resolution of your printer, but rather than working at A4, you will find that only A5 Page formats are available, and even these are a little short with a 24-pin or bubblejet printer.

768K Memory-

If you have 768K of memory, you will be able to use full-size A4 Pages on 9-pin, Deskjet or laser printers, but the 24-pin/Bubblejet A4 Pages will be slightly short.

1Mb Memory.

If you have 1Mb of memory, all Pages are full-size.

Page Formats 5 and 6

Formats 5 & 6

The **New** menu also includes "double resolution" page formats. Page Formats 5 and 6 print out at twice the normal resolution: the 9-pin version prints at 480x216 dpi, the Deskjet / Laser version at 600x300 and the 24-pin / Bubblejet version at 720x360. These formats are called "A5" in the New menu, but they are usually considerably smaller than A5 size: the only exception is the 9-pin formats 5 and 6, which (if you have 1Mb of memory) are full A5 size.

Page Formats 5 & 6 (cont)

Note that the printers themselves are not really capable of printing at the double horizontal resolutions, but these Page formats still represent the only way to make use of the maximum vertical resolution of the printer, and achieve the very best print quality possible from MD3. If you have a full 1Mb of memory and you are using a 9-pin printer, formats 5 and 6 are approximately A5 size. If your printer is not a 9-pin, these formats will not be A5-size, but they are still useful, because they represent the widest possible Page which will fit on the MD3 screen.

Because formats 5 and 6 use double-resolution, any text on these pages will be printed at half its normal size.

THE OPAQUE, TRANSPARENT AND EXOR MODES

The Extra Modes:

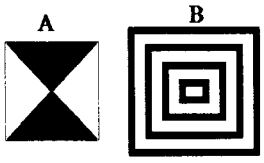
Opaque, Transparent and Exor

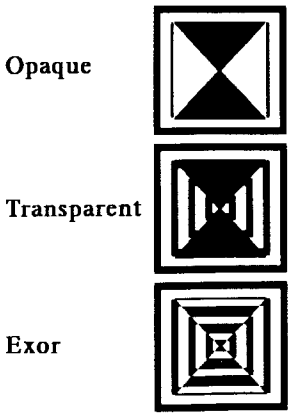
The Opaque, Transparent and Exor modes are used when you paste a picture or a shape down on the Page: they control how the picture you are pasting interacts with whatever is already on the Page, "underneath" the new image. The easiest way to understand the pasting modes is to begin with Opaque mode. If you are sticking down an Opaque picture, it means that whatever was on that area of the Page before will be completely obliterated.

The second mode is Transparent: this means that the previous contents of the pasted area will "show through" any white gaps in the new picture:

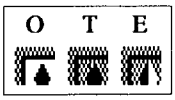
The third mode is Exor. This is a little complicated to explain: it works just like Transparent, except that any dots which were black on both the original and the new image will be turned to white:

The three modes produce these results when A is copied onto B:





The three Modes are represented in the Extra menu by the following symbols -

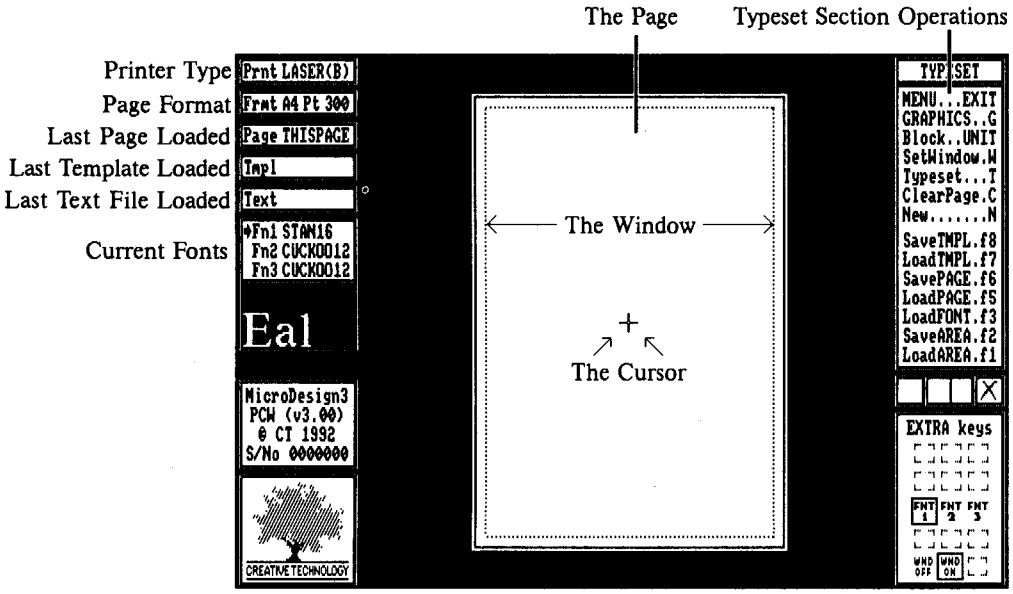


THE TYPESET SECTION

Typeset Section:

The Screen

The Typeset Section shows a view of the whole Page at reduced scale, and also displays information about the current Page format, the names of the Fonts, the last Page and Template loaded, and the printer settings. The Typeset Section Operations are listed in the Operations Menu: these include the loading and saving of Page and Area files, loading Font files, Block operations, setting up the Typesetting Window, selecting new Page Formats, and Typesetting itself.



What is Typesetting?

Typesetting in MD3 is the process in which the text in the Editor section is laid out on the Page using the Fonts. The part of the Page in which text can be typeset is limited by the Typesetting Window, which is controlled using the **SetWindow** operation. This section also includes operations for loading and saving Template files and Fonts, setting the Window position, and setting up the various menus which control the typesetting system.

The Window

By default, the position of the Window is displayed on the Page as a dotted box, as shown above. The Window display can be switched on or off using Extra row 1 when no Operation is in progress.

TYPESET SECTION OPERATIONS

Graphics

This is an alternative route to the Graphics section. It does not go via the Main Menu: instead, the area of the Page which will first become visible in the Graphics Window is shown on the Page display. The Graphics Window position is displayed on the Page as a box, and you can position the box wherever you wish using the cursor keys or the mouse left button, before moving to the Graphics section with ☑ or [Enter].

Block

Block

This operation defines a rectangular area of the Page, or "Block". When you have defined the Block, you can Erase it, Invert it, or Move or Copy it to a different part of the Page.

Marking the Block

When you select **Block**, the program displays a rectangular frame on the Page. You can change the size and shape of the Block frame using the mouse left and right buttons, or [↑↓←→] and [Space]. When you have positioned the frame around the Block you want, select a Block Operation from the menu by pressing one of the keys listed, or by clicking over the operation you want.

Erase **Block Erase** simply erases the block to leave blank (white) space.

Invert **Block Invert** changes all the black pixels in the marked area to white, and all the white pixels to black. Note that after an Invert operation, the Layout display of the Page may not correspond exactly to the page contents.

Copy/Move **Block Copy** allows you to 'pick up' the marked area and move it to another part of the Page (a **Block Move** operation), or to reproduce the marked area elsewhere while leaving the original intact (a **Copy** operation): see Extra Features below for details of selecting Move or Copy. When you select the Copy operation, a second frame appears over the first one. This is the Destination frame, and it indicates where the Block will be 'stuck down' when it is Copied: it is this frame which now moves around the Page when you use the left button or [↑↓←→].

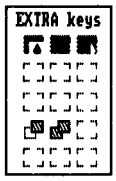
Note that you will not see the Copied Block as you position it, only after it has been Fixed in position (using ☑ or [Enter]), but you can always UNDO using ☒ or [Word/Char] and re-position the Block if you wish.

Note also that the Page is displayed at a reduced scale of 8:1, so Moved or Copied Blocks can only be positioned to the nearest 8 pixels. If you want to Move or Copy more precisely, you must use the Graphics section, where you can work on a part of the Page in full detail.

Extra Features

For **Copy** operations only:

Extra row 5 selects Opaque, Transparent or Exor modes.
Extra row 2 selects **Move** or **Copy** (remove the original Block or leave it intact).



SETWINDOW

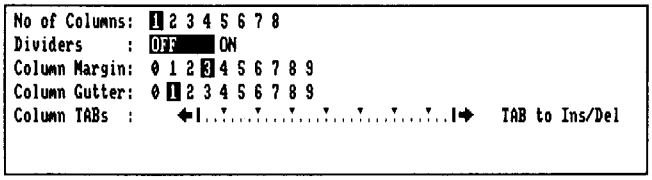
SetWindow

This is the operation used to set up the user-definable Text Window which controls Typesetting. When you select SetWindow, a rectangular frame appears on the page: the frame functions identically to the Block frame, and is controlled in the same way, using the left and right mouse buttons, or [↑↓←→] and [Space].

As well as the Window position, there are other Window settings accessed through the SetWindow menu, which can be displayed in the bottom of the screen by clicking over ☑, or by pressing [Relay].

THE SETWINDOW MENU

SetWindow Menu



No. of Columns sets the number of vertical columns into which the window is split.

Number of Columns

Dividers are vertical black lines which can be drawn automatically between the columns. They can be switched On or Off; each divider is only drawn when a new column of text is begun.

Dividers

The **Column Margin** is the space between the sides of each column and the beginning and end of the line of text. The size of the Margin is measured in units which correspond to the width of four pixels: this distance changes according to the printer type and Page format, and is best set by trial and error.

Column Margin

The **Column Gutter** is the space left between the text and the top and bottom of the Window, measured in the same units as the Margin.

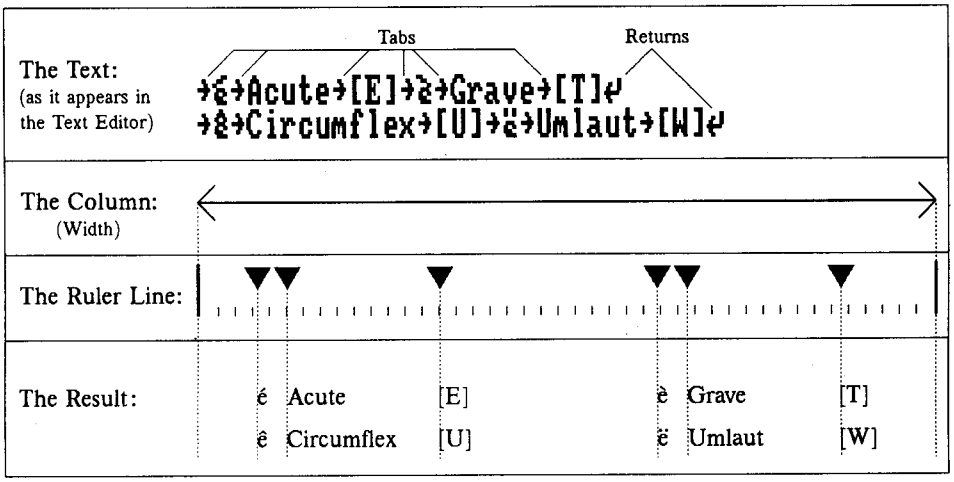
Column Gutter

SetWindow (cont)

Column TABs

Column TABs: this is MD3's equivalent of a Ruler Line, as used in word-processor programs or typewriters. TAB 'stops' can be positioned at (or removed from) any of the ruler's 120 positions by moving the cursor to the desired position and pressing [TAB]. The width of the ruler always corresponds to that of a single Window column: if the Window has only one column, the ruler extends over the width of the whole Window. The Column TABs are used for lining up vertical columns of text or figures. They are also used by the Indent characters, which allow a section of text to be indented from the left and/or right margins when typesetting.

In this example, the ruler-line has six Tab-stops, which are used to line up six vertical columns across the Page:



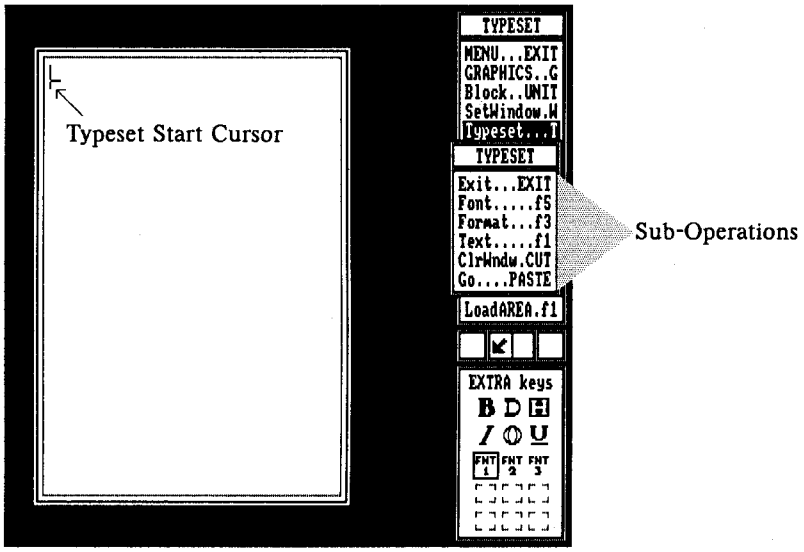
Templates, New & Clear-Page

Note
When the **SaveTemplate** operation is used, the Window data is included in the Template file: when a Template is loaded, new Window data is imported from the file, and the existing Window is lost. The **New** operation also deletes the current Window settings, but **ClearPage** leaves the Window settings intact.

Typeset

Typeset

This operation takes the text in the Editor which has been marked for typesetting (see Mark Text below) and lays it out on the Page within the boundaries set by the Window. Typesetting always begins at the position of the Typeset Start Cursor, which is an L-shaped cursor displayed on the Page. When the Typeset operation is first selected, a list of Typeset sub-menus appears in the Operations Menu:



Typeset Start Cursor

The Typeset Start Cursor appears on the Page, showing where typesetting will begin: its vertical position is set so that the largest font you have loaded will fit onto the top line. You can move the Start Cursor using the cursor keys, but if you re-position it so close to the top of the Window that some or all of the characters on the first line cannot fit inside, the program will beep when you start typesetting, and the characters which do not fit will be omitted. To move the Start Cursor to its default position at the top left corner of the Window, press [Alt]+[Shift]+[Doc].

The **Typeset Sub-Operations** work as follows:

Font and **Format** use the bottom window to display menus for controlling different features of Typsetting and Fonts.

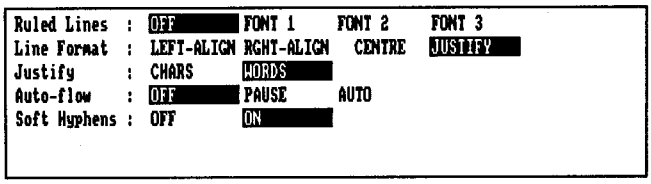
Font Menus

The FONT MENUS are described in detail at the beginning of the Reference chapter, on page 4-15. The program will normally begin Typesetting in the Font which is currently selected in the Extra menu, but you can change Font during Typesetting using Control Codes in the Text Editor: see page 4-50.

Typeset (cont)

Format Menu

The **FORMAT MENU** has five settings:



Ruled Lines

Ruled Lines forces the Typesetting system to align the text base-lines (the vertical typesetting position) so that they always line up. If you are switching between fonts of different sizes during typesetting, the differences between their different Line Pitch settings may produce an uneven Line Pitch on the Page as a whole. Using Ruled Lines, you can force all typesetting to use a Line Pitch distance which is appropriate for the Line Pitch of one 'Master' font (1, 2 or 3), rather than changing the Line Pitch to an unrelated distance every time you switch from one font to another.

It is easiest to imagine the Ruled Lines as real lines drawn across the Window: the lines are spaced at **half** the Line Pitch of the selected font (see the third example below), and all typesetting is locked to these lines.

Ruled Lines OFF

This column is set in STAN16, the main body-text font used in this manual. Its default line pitch is 24, which is quite sensible for its size, and it is loaded into font 1.

This column is set in STAN13, which is loaded into font 2: it is a smaller font than STAN16, and it has a correspondingly smaller line pitch of 20. This means that when it is typeset next to a column of STAN16, the base-lines of the text do not match, and the line spacing looks uneven.

Ruled Lines ON

This column is set in STAN16, the main body-text font used in this manual. Its default line pitch is 24, which is quite sensible for its size, and it is loaded into font 1. The line pitch of the column opposite has been increased automatically by the Ruled Lines setting, to make it line up nicely with this one.

This column is also set in STAN13, but the Ruled Lines has been set to "Font 1". This makes the line pitch of STAN16, which is loaded into font 1, control the line pitch of the other fonts, including this one. In this case, the Ruled Lines setting makes both line pitches the same: using the same pitch for two different sizes of font might seem strange, but it does make the columns look better together on the Page.

This column is set in STAN16, the main body-text font used in this manual. In this case, the Ruled Lines has been set to Font 2, so that the Line Pitch of the smaller font opposite is controlling this one. This does NOT make this line pitch smaller...

This column is also set in STAN13, but the Ruled Lines has been set to "Font 2". This means that the line pitch of this font now controls the other fonts, but default line pitch settings of larger fonts are never reduced, because this would make the lines run into each other. Instead, the line pitch of the larger font is increased until every *second* line matches the smaller font.

See also the note about stopping and starting the Typeset operation, page 3-11.

Line Formats:

Line Format controls the justification of each line as it is typeset. There are four settings: each line can be aligned to the Left or Right column margins, or Centred within the column, or spread out ("Justified") to line up at the right and left edges. This paragraph has been typeset in "Justified" format: the following three paragraphs show the effects of the other three settings.

Justify

There are four settings: each line can be aligned to the Left or Right column margins, or Centred within the column, or spread out ("Justified") to line up at the right and left edges. This paragraph has been typeset in "Left-Aligned" format.

Left-Align,

There are four settings: each line can be aligned to the Left or Right column margins, or Centred within the column, or spread out ("Justified") to line up at the right and left edges. This paragraph has been typeset in "Right-Aligned" format.

Right-Align,

There are four settings: each line can be aligned to the Left or Right column margins, or Centred within the column, or spread out ("Justified") to line up at the right and left edges. This paragraph has been typeset in "Centred" format.

Centre

Note that the Line Format can be changed during a Typeset operation, using Control Codes in the text: see Editor, page 4-49.

Auto-Flow

Auto-Flow: the Typesetting system can detect the presence of text or graphics data already on the Page, and make sure that no text is typeset over it. **Auto-Flow** makes the typeset text 'flow around' any black ink already on the Page, and restrict the text to the available blank space.

With Auto-Flow OFF, text will be typeset in Exor mode over the whole Window or Page, regardless of what is already there, which can create interesting effects like this!

PAUSE and AUTO-SKIP both avoid any existing Page contents, but when the column or Window is completely blocked by a graphic image so that the text cannot be typeset around it, PAUSE will halt the Typeset to allow you to re-position the Typeset Cursor. AUTO-SKIP simply searches vertically down the Page until it finds more space, then continues typesetting automatically.

Typeset (cont)

Soft Hyphens

Soft Hyphens: these characters can be placed in particularly long words, and will be used to break the word across two lines if this option is switched ON. Soft hyphens are not typeset at all unless they are used as line-breaks. If you switch this option OFF, soft hyphens are ignored altogether. For example:

This line looks bad because the first word on the next line, antidisestablishmentarianism, is too long to fit, and the line is justified. To cure the problem, UNDO the typeset, and add a soft hyphen in the middle of the word.

This line looks better because the long word on the next line, antidisestablishment-arianism is split by the soft hyphen. If we re-typeset the same word later on in a different position where it does not break a line, the soft hyphen will not appear, and the word antidisestablishmentarianism will appear intact.

↑
The hyphen is here, but you can't see it!

Soft hyphens are normally used as follows: typeset the text, and check to see if any lines are badly spread out. If there are any places where long words need to be hyphenated, UNDO the typeset, press [F1] to display the text in the Bottom Window, then place the hyphen(s) in the necessary position(s) and re-typeset the text.

Marking Text

TEXT
This uses the bottom window to display the Text file, so that you can place the Typeset Start and End markers using [Alt]+⊞ and [Alt]+⊟. If no text is marked when you select GO, nothing will be typeset. When a file is loaded into the Text Editor, the Typeset markers are placed at the beginning and end of the file automatically, so that all of the text is marked for typesetting by default.

Clear Window

CLRWNDW erases the contents of the Window: any text or graphics in the Window will be lost.

GO

GO is used to start the Typeset operation once all the parameters have been set;

Multiple Pages

TYPESETTING OVER MULTIPLE PAGES

If the **Typeset** operation fills the Page or the Window before reaching the end of the marked text, the Start Marker is moved on to the point reached in the text. This means that the next time **Typeset** is used on, say, a new Page or a different Window, the Start Marker will be correctly positioned to carry on from where the last Typeset finished. To place the Typeset Start Cursor at the top left corner of the Window when you begin a new Page, press [Alt]+[Shift]+[Doc].

UNDOing Typeset

UNDOing Typeset

You can stop a typesetting operation at any time by pressing [Stop]. After the typesetting is finished (or Stopped), you can UNDO it: when you click over ☒ (or press [Word/Char], the program asks to you to confirm that you want to UNDO, then begins removing the text from the Page. Typesetting is UNDOne one line at a time, starting at the end, and you can stop the UNDO process at any time by pressing [Stop]: as with typesetting over multiple Pages, the typesetting markers in the text and on the Page will always be placed correctly for you to continue typesetting from wherever you finished UNDOing.

[Extra]+[Del←]

You can also UNDO a single Typeset line by pressing [Extra]+[Del←] instead of ☒.

Keyboard in Typeset

Keyboard in Typeset: Marking Text

The Typeset Start Cursor on the Page can be adjusted using the cursor keys. The Font, Format and Text menus are activated by pressing the keys indicated in the Typeset submenu, and the features in these menus are set using the cursor keys: use [Relay] to remove these menus and return the cursor to the Page. When Text is used, the Typeset Start and End markers are positioned using [Alt]+⊞ and [Alt]+⊟. The **Extra Features** are set with the Extra keys as normal.

Mouse in Typeset

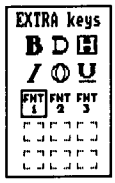
Mouse in Typeset

The frame on the Page is adjusted like any other Block frame (see **Block**). The different Typeset menus for Font and Format are accessed by clicking over the corresponding name in the Typeset menu, and the different settings in the bottom menus can be selected by clicking over them with the left button, using the Mouse Arrows where appropriate. Click over "GO" to start typesetting. **Note that the Mouse cannot be used to Mark Text: see Keyboard above.**

Extra Features

Extra Keys: Selecting Fonts and Styles

The Typeset Extra Features are the character style options: these are **Bold**, **Double-strike** and **Highlight** (row 5) and *Italic*, Outline and Underline (row 4).



Row 3 is used to set the the Font (1, 2 or 3) in which typesetting will start, although the font can be changed during typesetting using Font Control Codes in the text: see Text Editor, page 4-50.

Clear Page

ClearPage

This operation simply clears the Page, after a confirm stage. Any information on the Page is lost, but the Window and Page Format settings remain unchanged. Clear Page is provided as an alternative to **New**, which discards all the Page and Window settings: see below.

New

New

This operation is used for changing the page Format (see **Page Formats**, page 4-17). When New is selected, a menu of the six Formats appears in the bottom window, though not all the formats may be available. **Selection of a New Format always clears the Page, and the contents are lost**: the current Window and Typeset information is also discarded, and default settings implemented, although the Font Menus are unaffected.

Some examples of the New Menu are given on page 4-18. Select the Page format you want by clicking over it, or by pressing the key-number beside it ([1]-[6]): you can also use [↑↓←→] followed by [Enter]. Some entries in this menu may appear in grey: this means that your PCW has insufficient memory to select these formats.

Save Template

SaveTMPL

This operation saves the current settings of the Typeset and Window menus, the Fonts and their menus, and the current Page format, in a Template file. You can also include the contents of the Page in the Template file if you wish.

For more details of Template files, see the Introduction and Filing chapters of this manual.

Load Template

LoadTMPL

This operation loads a Template file from disc. Since the Template file always includes a Page format, loading a new Template may require a change of format, and the loss of the current Page: if this is the case, the program asks for confirmation of the **LoadTMPL** operation.

If the contents of the Page were saved along with the Template, this image will also be loaded onto the current Page, after a confirm stage, in Opaque mode. If you confirm that you want to load the Page contents, anything on the Page before the Load operation will be lost, and the Page format may be changed.

LoadPAGE & SavePAGE

LoadPAGE & SavePAGE

Page files have suffix "**.MDP**", and are used to store complete MD3 Pages. There are no additional features or settings in the Load and Save Page operations: they simply load and save the Page contents. Pages are always loaded in Opaque mode, and all the previous Page contents are lost. If the Page being loaded is a different Page Format to the current setting, the format will be changed to suit the new Page.

If you try to load a Page which was created for a different type of printer, the program will warn you that the new Page is unsuitable for your printer. You can proceed with the Load operation, but **we recommend that you do NOT try to print a Page on an unsuitable printer:** it is possible to damage the printer by doing this.

LoadFONT

LoadFONT

This operation loads a Font ("**.MDF**") file from disc. When LoadFont is selected, the program asks you which of the three font 'slots' you wish to load the new font into: when you choose a slot (click over the menu entry, use [↑↓←→] and [Enter], or press [1], [2] or [3]), the Filing Window appears and the new font is loaded using MD3's normal file-loading procedure.

Whenever a font is loaded, the Font Menu settings for that font are loaded with it: the Line Pitch, Character Height and Width, and the Spacing and Kerning are all defined as part of the font file. If you want to save a font with different settings, you must save it as part of a Template file, using the SaveTMPL operation.

SaveAREA

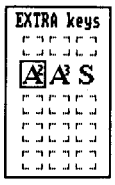
SaveAREA

This operation allows you to define a rectangular area of the Page, and save it in an Area file. When you select SaveAREA, a Frame appears on the Page: you can position this frame using the left and right buttons, or [↑↓←→] and [Space]. When you Fix the frame using ☑ or [Enter], the program asks you for a filename, and the area you have defined is saved in data-compressed format with the suffix "**.MDA**".

Extra Features

Area File Formats

Extra row 4 is used to select the type of Area-file to be Saved. There are two different types of Area format, "**A2**" and "**A3**": these correspond to the MDA file formats used in MicroDesign2 and MicroDesign3 respectively. The **A3** format gives maximum compression and efficiency, but you must use the **A2** format if you want to export the file for use with any of our other programs (such as Tweak, MicroDesign2-PC, or ViewPoint). See page 4-7 for more information about MDA files.



(continued overleaf)

SaveAREA (cont)

Screen Files

The third option ("**S**") is for Screen format files. Screen files are bit-image files which correspond exactly to the size and format of the PCW's screen. Screen files can be loaded into other PCW graphics packages, or in Basic, Logo or Pascal programs. If the Screen option is selected, the size of the SaveAREA cursor is fixed, because Screen files are always the same size. Screen files are uncompressed, and occupy about 22K of disc space.

LoadAREA

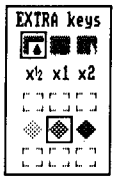
LoadAREA

Areas can be loaded into MicroDesign from a variety of disc file formats or **Area-Types**. When you select LoadAREA, the search-string uses the '**.MDA**' file suffix: you can alter the Area File Type using the **AreaType** selector in the Filing Utilities menu as described on page 4-8.

When you have entered a search string using ☑ or [Enter], the program displays a directory of all the MDA files on the disc (in the current Group). Select the filename you want using the left button, or [↑↓←→] and [Enter]. See the chapter on **Filing Operations** for more details of the different Area-Types and how to use them, and of the file Loading operations.

Once you have selected the filename, a frame showing the size of the Area file appears on the Page. You can now position this frame using the left button or [↑↓←→] (or re-scale it – see page 4-8), and complete the load operation using ☑ or [Enter].

Extra Features:



Areas may normally be loaded in Opaque, Transparent or Exor modes, as set by Extra Row 5, and set to Half, Normal or Double Size by row 4. Note that if the selected Area file will not fit into the current Page format the program will automatically set the Load size option to Half to enable the Area to be loaded, and print a message on the screen to this effect.

Extra row 2 controls the dot-density, or 'darkness', of Area files which are being re-scaled to a reduced size as they are loaded (see page 4-8). If a reduced image appears too dark after it is loaded, try loading it again with the lighter setting ([Extra]+[←]): if it appears too light, switch to the darker setting ([Extra]+[→]).

Key-Functions

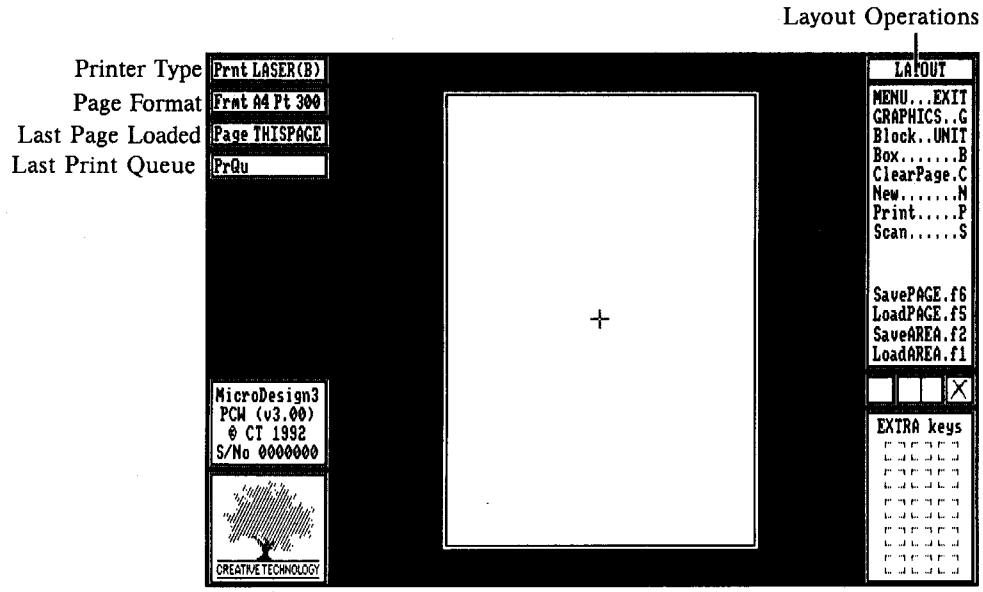
[Doc/Page]	centres the cursor on the Page.
[Relay]	alternately displays or hides any menu which appears in the Bottom Window.
[Extra]+[Space-bar]	reduces the Frame size to zero during Block and Shape and Line operations.
[Extra]+⊞	re-selects the previous operation.
[Extra]+[Relay]	switches the Window display Off.
[Extra]+[↓]	switches the Window display On.

THE LAYOUT SECTION

Layout Section

The Layout Section screen displays most of the same information as the Typeset section: because Pages are Printed from the Layout section, the name of the last file loaded into the Print Queue is displayed along with the printer settings. The Layout Operations are listed in the Operations Menu: these include the loading and saving of Page and Area files, Scanning, Block operations, drawing Boxes, Printing the finished Pages and selecting new Page Formats.

The Screen



LAYOUT SECTION OPERATIONS

Graphics Block

The **GRAPHICS** and **BLOCK** operations in Layout are identical to those in the Typeset section: see page 4-22.

Box

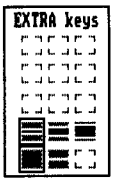
Box

Boxes can be drawn directly onto the page at Layout scale. When Box is selected, a frame appears on the page which can be positioned as described for the Block frame above. The lines which make up the Box are Black or White, and can be of three different thicknesses. You can position the Box frame in the usual way, using the left and right mouse buttons or [↑↓←→] and [Space]. Use ☑ or [Enter] to Fix.

Box (cont)

Because the Layout display uses one dot on the screen to represent eight dots on the Page, Boxes can only be positioned to an accuracy of eight dots. The Box outline is always drawn around the outside of the area covered by the frame. If you need to position the outline of a box more precisely than this, you must use the Rectangle operation in the Graphics section.

Extra Features



Row 2 controls the line thickness used for the Box;

Row 1 selects the Ink colour (Black or White).

Clear Page

ClearPage

This operation simply clears the whole Page, after a confirm stage. Anything which was on the Page is lost; but this does not affect the Typesetting, Font or Window settings. See page 4-30.

New

New

This operation is used for changing the page Format (see **Page Formats**, pages 4-17 to 4-20). When New is selected, a menu of the six Formats appears in the bottom window, though not all the formats may be available. **Selection of a New Format always clears the Page, and the contents are lost**: the current Window and Typeset settings are also discarded, and default settings implemented, although the Font Menus are unaffected.

Select the Page format you want by clicking over it, or by pressing the key-number beside it ([1]-[6]): you can also use [↑↓←→] followed by [Enter]. Some entries in this menu may appear in grey: this means that your PCW has insufficient memory to select these formats.

Print

Print

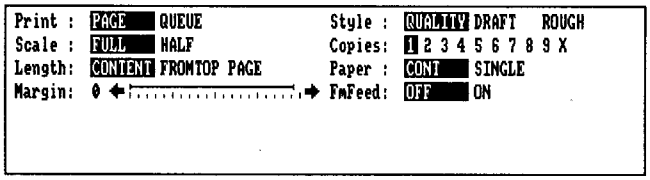
When this operation is selected, the Print Menu appears. When the print parameters have been set using the cursor keys or the mouse, Printing is actually started using ☑ or [ENTER]. Printing can be aborted at any time by pressing [STOP] or by clicking over the word STOP on the screen: the abort may take a few seconds.

If the program 'Beeps' when you select Print, DO NOT CONTINUE PRINTING: abort the print using [Stop] or ☒ and check that the Page format you have selected is suitable for your printer. See Margin below.

The Print Menu

Print Menu

The bottom window in the Print operation displays a Menu of eight Print settings. These are set using the cursor keys or the left button: a frame indicates the parameter currently being set.



PRINT PAGE/QUEUE

Page/Queue: The Print Queue

As well as simply printing the current Page, MD3 can print a "Queue": this is a list of Pages (and/or instructions to the printer) which you must type into a special part of the Text Editor. When you Print the Queue, the program looks at the first line of the Queue Editor for the name of a Page or Area file to be printed. This file is then loaded from disc onto the Page, and printed: **note that the current contents of the Page are always lost when a Page file is loaded by the Print Queue.** When the first print is finished, the program looks on the next line of the Queue Editor for a second filename, and this process continues until all the files in the list have been printed.

The Queue works with Page (**.MDP**) files and Area (**.MDA**) files: when entering the name of a Page file in the Queue, you must include the MDP suffix or MDA suffix for each file. By default, the files are loaded from whichever disc drive was last used for a Page or Area filing operation, but you can include a drive letter at the beginning of each file name. You can also use a number of special Print Queue Commands for controlling different aspects of the printing process.

For a full explanation of the Print Queue and list of Queue Commands, see the section on the Queue Editor, page 4-59.

Print (cont)

Scale

SCALE

You can use this option to print Pages at Half-size. Half scale reduces the height and the width by a factor of 2, so that an A4 Page fills an A6-sized area. Because of the size of printer pixels, resolution may be lost when printing at half-size, and the printout may become more dense and black.

Length

Page & Content

LENGTH

The printing routine can be set to ignore any blank space at the top or bottom of the Page using the **Content** setting on this option. If **Page** is selected, the whole Page including blank areas will be sent to the printer. The **FromTop** option does 'print' any white space which is above the image, but not that which is below it.

Margin

MARGIN

This option controls the left-to-right position at which the Page is printed on the paper. At full scale, an A4 Page usually occupies the whole width of the paper, but A5 Pages or half-size prints can be offset to appear anywhere across the width of the paper. The Margins of some A4 Page formats can also be adjusted by a small amount.

Note that if you have selected a Page format which is not suitable for your printer, the Margin display will indicate that the Page is too wide, and the program will 'Beep': IF THIS HAPPENS, ABORT THE PRINTING IMMEDIATELY.

Style

Draft, Quality & Rough

STYLE

If you are using a 9-pin printer, the Page can be printed in three different styles: **Draft** uses several of the pins in the printer head to give faster printouts, while **Quality** uses only one pin for greater precision. The **Rough** option provides a very fast (about 3 minutes) printout of rather poor quality, and it is intended for checking page layouts, rather than for printing proper Pages. Note that most Deskjet, Bubblejet and Laser printers can be switched to Draft mode using the switches on the printer: check your printer manual for more information.

Copies

COPIES

The program can automatically print up to nine copies of the Page using this setting. If this option is set to **X**, the program looks at the **Copies X** option in the Options section of MD3 to find out how many copies to print. **Copies X** can be set to any number between 1 and 99: see page 4-83.

PAPER

Paper

When printing more than one copy of the Page, this option selects between **Continuous** or **Single**-sheet paper. In single-sheet mode, the program pauses after each print of the Page until a key is pressed, to allow you to insert a new sheet of paper. This operates independently of the printer's own Paper Error signal, and of the PCW's own printer control system. Set this option to **Continuous** for Laser printing, or if you are using a sheet-feeder.

Continuous Single

FORM FEED

Formfeed

With Form Feed **On**, a form feed command is sent to the printer after printing each Page. When printing a Queue of separate Pages on separate sheets of paper, set the Form Feed **On**; when concatenating several Pages onto one sheet of paper, set the Form Feed **Off** and use the '***FORMFEED**' command in the Queue.

See **The Options Section**,page 4-77, for further information about external Centronics and Parallel printers, and about the different printer types.

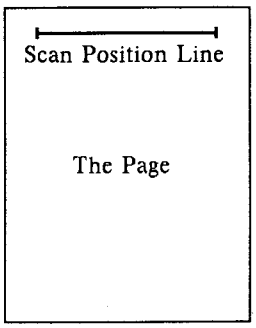
Scan

Scan

You can scan pictures directly onto the MD3 Page using MD3's optional scanning hardware, or using the original Creative Technology ProSCAN image scanning system. The scanner uses a hand-held scanning head (or an Amstrad Fax machine, models FX9600T and 9600AT only) to capture images onto the Page: the images can then be edited and combined with MD3 text and other pictures.

The Scan Position

When you select **Scan**, you will see a horizontal bar appear across the Page.



The length of this bar represents the width of the scan, and it will vary according to the dots-per-inch ("dpi") setting on the scanning head. Because the scanner always scans a 4" wide strip, different dpi settings give a different number of dots in the overall scan width: a 4" scan at 200dpi is 800 dots wide, but a 4" scan at 400dpi is 1600 dots wide.

When you have set the dpi, use ☑ or [Enter] to begin scanning: the screen now switches to a 1:1 display. If you are using a hand-held scanning head, press the scan

Scan (cont)

button on the head, and move the head slowly over the image. (If you are using an Amstrad fax, insert the paper you want to scan, then press the Fine and Copy buttons together to begin scanning.) You should now see part of the image appear on the screen: if it is too light or too dark, adjust the controls on the scanning head, then press [Can] to start scanning again. The screen is not wide enough to display the whole of the image as it is scanned, so you will see only the left edge.

When you have finished scanning, press any key to return to the normal Layout screen. You will then see the scan appear on the Page. If you continue scanning until you reach the bottom of the Page, the program will stop scanning and return to the Layout screen automatically.

See appendix 2 for more detailed information about the scanner.

SavePAGE

SavePAGE

This is a simple operation which Saves the current contents of the page, along with information about the Page format, in a Page file. You can choose the file-name, but the suffix will always be '**.MDP**'). Page files are data-compressed, but can be over 100K in size if there is a large amount of fine detail on the Page: it is even possible to create a Page which cannot be Saved on a 180K disc. See page 4-7 for more information about Page files.

LoadPAGE

LoadPAGE

This operation loads a Page (**.MDP**) file. Pages are ALWAYS loaded in Opaque mode, and the program will change the current Page format to suit the new Page if necessary (after a confirm stage): **all information on the current Page will be lost when a new Page is loaded.** See page 4-7 for more information about Page files.

Load & Save AREA

LoadArea and SaveAREA

These operations are identical to those in the Typeset Section: see pages 4-31 to 4-32.

Key-Functions

Special Key Functions in the Typeset and Layout Sections:

[Doc/Page]	centres the cursor on the Page.
[Relay]	alternately displays or hides any operation menu which appears in the Bottom Window.
[Extra]+[Space-bar]	reduces the Frame size to zero during Block and Shape and Line operations.
[Extra]+⊞	re-selects the previous operation.

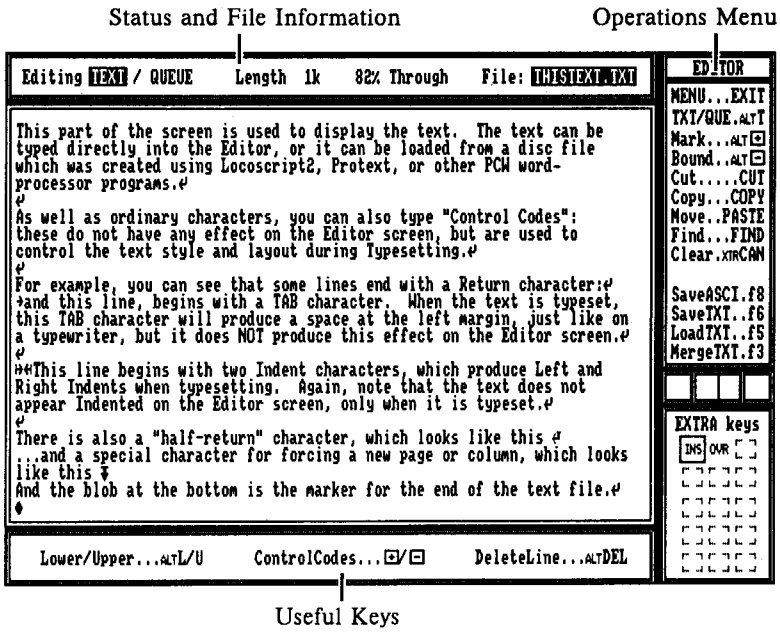
THE TEXT EDITOR SECTION

Text Editor Section

The Text Editor is a built-in word-processor which allows you to enter text, or load files of text from disc. These files can be created beforehand using another word-processor program such as LocoScript2 or Protext, if you wish. The Editor text can then be placed on the Page using the **Typeset** Operation, and/or saved to disc as an MD3 text file.

The Editor section screen looks like this:

The Screen



The Operations Menu contains the Text Editor operations.

Percentage Through

Above the Text screen is a strip giving information about the text file. This includes a readout of the name of the last file loaded or saved, and the space used by the current file. The current position of the cursor in the file is expressed as a 'Percentage Through': this means for example that if the cursor is one third of the way between the beginning and the end of the file, it is '33% Through'.

Below the text screen is a panel showing some useful key-functions in the Editor.

Mouse in the Editor

Mouse in the Editor

Although a mouse can be used to select the Editor Operations from the Operations Menu as normal, you cannot use the mouse to position the cursor in the text itself.

Memory & Text Files

Memory and Text File Size

The Editor normally has a capacity of 16Kb, which means that you can load a text file of up to 16K into it. However, you can use the System Options to re-allocate to the Editor an extra 16K of memory which is normally reserved for the fonts: see Options, page 4-78.

16K of text is about four pages of normal typescript (at 10cpi, 6 lines per inch), although it can be typeset much smaller or much larger in MD3. If a text file is too big to fit into the Editor, it will be truncated as it is loaded, and the program will give you a warning that the file is too big.

TEXT EDITOR OPERATIONS

Editor Operations: TXT/QUE

TXT/QUE

The Queue Editor

This operation switches the Editor function between editing the normal Text file (TXT), and editing the Print Queue (QUE). The Print Queue is discussed in detail on page 4-59, but it is edited, loaded and saved just like a piece of text. The top left corner of the screen shows whether the Editor is currently displaying the Text or the Queue. In 'Queue' mode, the LoadTXT and SaveTXT operations are replaced by **LoadQUE** and **SaveQUE**. While Text files can be loaded and saved from disc using any file-name or suffix, Print Queue files always have the suffix '**.MDQ**'.

Switching between Text and Queue does not affect the contents of either file, and you can make the switch safely at any time.

Block:

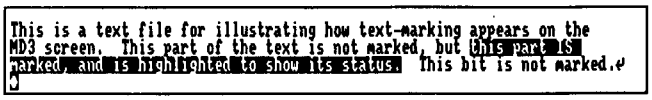
Block Marking and Block Operations

MicroDesign's Text Editor allows a section of the text to be marked as a Block. This block can then be Moved, Copied or Cut (Deleted) using the Editor operations. When a Block has been marked, it appears on the Editor screen in reverse video, or white-on-black.

Mark & Bound

Mark marks the beginning of the Text Block at the current cursor position.

Bound marks the end of the Text Block at the current cursor position.



Cut deletes the Marked Block from the text: **BEWARE!** This operation cannot be UNDOne.

Block Cut

Copy reproduces the Marked Block at the current cursor position: note that you cannot Copy a block of text to any cursor position which lies within the Marked Block.

Block Copy

Move moves the Marked Block to the current cursor position: note that you cannot Move a block of text to any cursor position which lies within the Marked Block.

Block Move

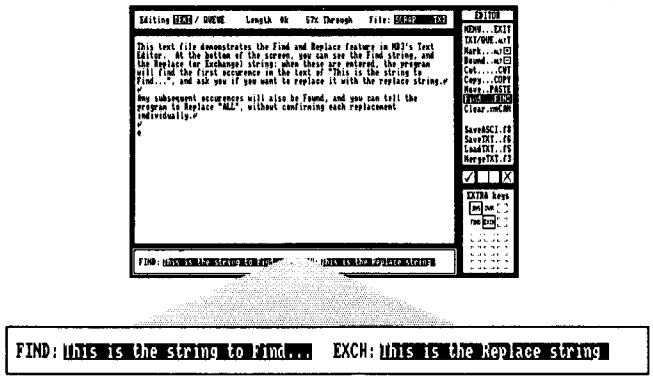
Find/Exchange

The Find operation has two functions, as set by Extra Row 4: FIND EXCH

Find allows you to enter a sequence (or "**string**") of up to 30 characters. When the Find string has been entered (use ☑ or [Enter]), the program will search through the text, and find each occurrence of the string. Each time it finds the string, it will stop and display a message at the bottom of the screen: "**FIND NEXT? Y/N**". If you cancel the Find using ☒ or [N], the program leaves the cursor at the point where it found the string, ready for editing.

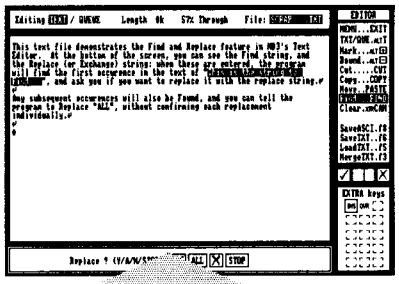
Find & Exchange

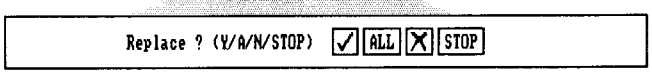
Exchange, like Find, asks for a string of characters, but it also requests a second string, the Exchange string. If you select the operation by pressing [Shift]+[Find] instead of [Find], the Exchange option will be selected automatically.



Find & Exchange (cont)

Each time the program finds the Find string, it will ask you whether you want to replace it with the Replace string:





When you select Yes or No, the program acts on this instruction, then searches forwards through the text for the next occurrence of the Find String, where it will stop again. If you select ALL, the program will continue through the text, replacing all the occurrences of the Find String with the Exchange string without confirming each one separately.

Find Strings

Find Strings

A Find string can include any Editor characters, including control and formatting codes: only the Return (↵), Half-Return (↵), and Column Marker (▼) characters cannot be Found. The program always remembers the last Find string, and whenever you press [Alt]+[Find] in the Editor, it will search forward from the current cursor position for the next occurrence of the string. This means that you do not have to select the Find operation every time you want to Find a string, but only when you want to change the Find string, or use the Replace facility.

Search Direction

NOTE THAT 'FIND' ONLY SEARCHES FORWARDS FROM THE CURRENT CURSOR POSITION: if you want to find all the occurrences of a string in the whole text file, you must move the cursor to the beginning of the file (press [Alt]+[Shift]+[Doc]) before selecting **Find**.

Clear

Clear

This operation empties the current section of the Editor. If you are editing the Text, all the text is lost, but the Queue is not affected: likewise, if you are editing the Queue, the text is not affected.

Cut deletes the Marked Block from the text: **BEWARE!** This operation cannot be UNDOne.

Block Cut

Copy reproduces the Marked Block at the current cursor position: note that you cannot Copy a block of text to any cursor position which lies within the Marked Block.

Block Copy

Move moves the Marked Block to the current cursor position: note that you cannot Move a block of text to any cursor position which lies within the Marked Block.

Block Move

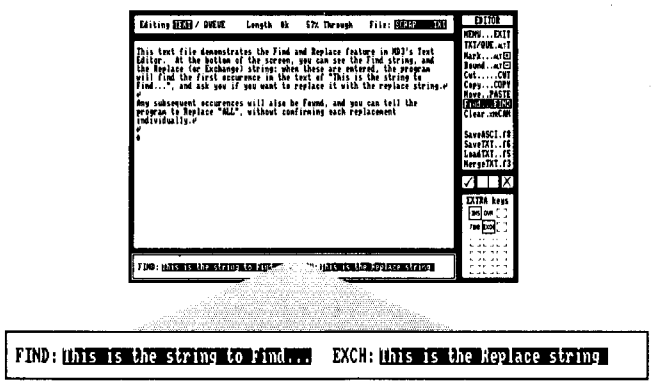
Find/Exchange

The Find operation has two functions, as set by Extra Row 4: FIND EXCH

Find allows you to enter a sequence (or "**string**") of up to 30 characters. When the Find string has been entered (use ☑ or [Enter]), the program will search through the text, and find each occurrence of the string. Each time it finds the string, it will stop and display a message at the bottom of the screen: "**FIND NEXT? Y/N**". If you cancel the Find using ☒ or [N], the program leaves the cursor at the point where it found the string, ready for editing.

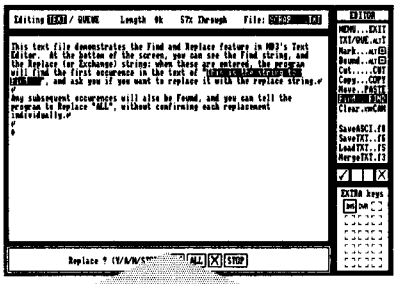
Find & Exchange

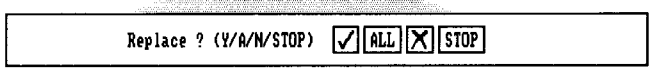
Exchange, like Find, asks for a string of characters, but it also requests a second string, the Exchange string. If you select the operation by pressing [Shift]+[Find] instead of [Find], the Exchange option will be selected automatically.



Find & Exchange (cont)

Each time the program finds the Find string, it will ask you whether you want to replace it with the Replace string:





When you select Yes or No, the program acts on this instruction, then searches forwards through the text for the next occurrence of the Find String, where it will stop again. If you select ALL, the program will continue through the text, replacing all the occurrences of the Find String with the Exchange string without confirming each one separately.

Find Strings

Find Strings

A Find string can include any Editor characters, including control and formatting codes: only the Return (↵), Half-Return (↵), and Column Marker ([]) characters cannot be Found. The program always remembers the last Find string, and whenever you press [Alt]+[Find] in the Editor, it will search forward from the current cursor position for the next occurrence of the string. This means that you do not have to select the Find operation every time you want to Find a string, but only when you want to change the Find string, or use the Replace facility.

Search Direction

NOTE THAT 'FIND' ONLY SEARCHES FORWARDS FROM THE CURRENT CURSOR POSITION: if you want to find all the occurrences of a string in the whole text file, you must move the cursor to the beginning of the file (press [Alt]+[Shift]+[Doc]) before selecting **Find**.

Clear

Clear

This operation empties the current section of the Editor. If you are editing the Text, all the text is lost, but the Queue is not affected: likewise, if you are editing the Queue, the text is not affected.

Filing Operations

SaveASCI

Save ASCII

This operation saves the text as an ASCII file: all formatting and style codes will be removed. ASCII files can be used in CP/M's "SUBMIT" system: see your CP/M manual for more information.

SaveTXT

Save Text

This operation saves the Text as a MicroDesign text file, with all control codes left intact.

LoadTXT

Load Text

This operation clears the current contents of the Editor, and loads into it a text file from disc. This may be a LocoScript2, Protext, MicroDesign or normal ASCII text file.

MergeTXT

Merge Text

This operation loads a text file into the Text Editor at the current cursor position, without overwriting the current text file. This allows two or more files to be joined together, as long as there is enough memory available in the Editor to hold both files.

LoadQUE, SaveQUE, and MergeQUE

Load, Save & Merge Queue

These operations work in exactly the same way as the Text filing operations, but they are used with Print Queue files, and they appear in the Editor Operations Menu when the Queue is being edited. The Queue filing operations can only be used with files whose names end in the suffix "**.MDQ**".

See the chapter on **Filing Operations** on page 3-1, for more information about text and Queue files, and about how to use the filing operations.

KEY FUNCTIONS AND CONTROL CODES

Key-Functions in the Editor

The Text Editor key functions and control codes are designed to resemble those in LocoScript 2, wherever possible. Normal text characters are entered from the keyboard as usual, but there are some characters in the MD3 character set which are not included on the standard PCW keyboard, and there are several Control Codes which can only be entered using special key-combinations. There are also special combinations of keys used to move the cursor around the text.

Keyboards and Characters

PCW9512 Keyboard ¼ & ¾

Exceptions

The MD3 character set includes almost all the characters which are printed on the PCW keys themselves. The only exceptions are the 9512 keyboard "1/4" and "3/4" characters, which appear as 'curly brackets', and the "Section Marker" (§) character, which does nothing in MD3.

Additional Characters

Additional Characters

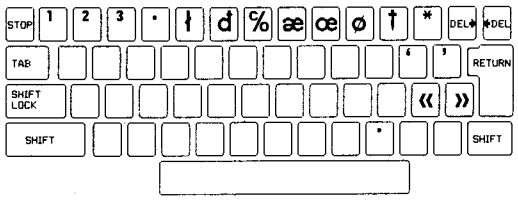
There are 32 characters in the MD3 fonts which are not printed on the keys: the full character set is listed below. If you have a non-UK keyboard with different key-tops, selecting the correct Keyboard Language during the MD3MAKE process should ensure that your keys produce the correct characters: see appendix 4 for more information about non-UK keyboards. The additional characters are all accessed by pressing an [Alt] or [Alt]+[Shift] key-combination, as shown on the keyboards below: note that these work on the UK keyboard only: see appendix 4 for details of non-UK keyboards.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

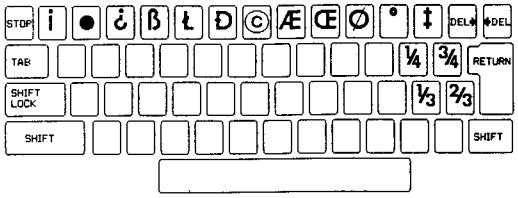
a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - = - + ! " £ $ % ' & * ( ) [ ] { } ◇ ; : # , . / ? ½ @

¹ ² ³ · ł đ ‰ æ œ ø † ⁺ « » ‘ ’ ¡ • ¿ ß Ł Đ © Æ Œ Ø ° ‡ ¼ ¾ ⅓ ⅔



[Alt]



[Alt]+[Shift]

Accents

Accents

To type a letter with an accent, type the accent first, then the letter. For example, to type a letter "e" with an "acute" accent, type [Extra]+[E], then [E].

The sixteen MD3 accents are typed in by holding down the [Extra] key, and pressing letters, as follows:

ACCENTS (shown on "e") must be typed BEFORE the character

é Acute	EXTRA [E]	è Grave	EXTRA [T]
ê Circumflex	EXTRA [U]	ë Umlaut	EXTRA [W]
ě Hacek	EXTRA [I]	ê Ring	EXTRA [A]
ẽ Tilde (Nenya)	EXTRA [P]	ė Overdot	EXTRA [Q]
ē Macron	EXTRA [O]	ĕ Breve	EXTRA [S]
ȇ Double-Acute	EXTRA [R]	ė Apostrophe	EXTRA [K]
ẹ Underdot	EXTRA [H]	ę Comma	EXTRA [G]
ę Cedilla	EXTRA [D]	ę Ogonek	EXTRA [F]

"Double Quotes"

Quotation Marks

There are no double-quotation marks (" & ") in MD3 fonts. If you type two adjacent single quotes, they are kerned together to make double-quotes, so that ' ' and ' ' in the text become " and " on the Page. Note that this does NOT work with the TYP fonts, or with MD2 fonts. If you want to use the double-quotes in an MD2 font, type Guillmets (« », French quotes) in the Editor.

Hyphens

Hyphens

One other extra character is the upper-case hyphen, typed by pressing [Shift]+[-]. This is used in place of the lower-case hyphen for upper-case (capital) letters, and for numbers. It should always be used in mathematical typesetting as the "minus" symbol.

Cursor Movement

Cursor Movement

The usual cursor keys are used in the Editor, plus the following:

[Alt]+[←]	Go to start of line
[Alt]+[→]	Go to end of line
[Alt]+[↑]	Go to top of screen
[Alt]+[↓]	Go to bottom of screen
[Doc/Page]	Scroll down one page
[Alt]+[Doc/Page]	Scroll up one page
[Shift]+[Doc/Page]	Go to end of file
[Alt]+[Shift]+[Doc/Page]	Go to beginning of file
[Alt]+[Del←] or [Alt]+[Del→]	Delete current line

Case Changing

Case Changing

Pressing [Alt]+[L] will force the character indicated by the cursor to become lower case: if it was a CAPITAL LETTER, it will be changed to its lower-case equivalent, but if it was already a lower-case letter, it will be left intact. Pressing [Alt]+[U] works in a similar way, but it forces characters to become UPPER-CASE (CAPITAL). Both these key-functions are listed in the help-screen which appears below the text.

Both the case-change functions also move the cursor forward by one character, so to change a whole line of text from lower to upper case, move the cursor to the beginning of the line, and hold down [Alt]+[U]: the cursor will travel along the line, converting any lower-case characters to upper-case. Punctuation, numbers and control codes are not affected, although upper- and lower-case hyphens are converted appropriately.

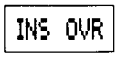
Relay

Relay

Pressing the [Relay] key re-organises the Editor display into complete lines from the current cursor position onwards. This does not change the text itself in any way: it merely changes its appearance on the Editor screen. Text files are automatically Relayed when they are loaded.

Insert / Overwrite

Extra Features in the Editor Section



Extra Row 5 is used to control the Insert / Overwrite mode for text editing. This is not a feature of any Operation, but of the Editor itself.

CONTROL CODES

Control Codes

Like any word-processor, MD3's Text Editor has a number of Control Code characters for controlling the appearance and layout of the text. In a word-processor, these codes are usually acted upon when the text is printed, but in MD3, these effects are created on the Page during typesetting. Some of them are universal to all text systems (*eg* **Bold Text** and TABulation), but some are more specialised. Most Control Codes appear as special symbols on the Text Editor screen, but do not have any effect on the appearance of the text until the text is Typeset. A full list of special characters in MD3's text system is given on the following pages: the Codes are divided into four groups, for Paragraph Format, Line Format, Font control and Style control.

The ⊞ and ⊟ Keys

Some Control Codes are placed in the text by pressing one of the two Control keys, ⊞ and ⊟, followed by a key letter. The ⊞ and ⊟ keys are located at either end of the Space-bar on the 8256, 8512 and 9256 keyboards, and at the extreme bottom left of the 9512 and 9512+ keyboards.

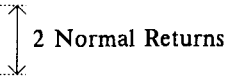
Paragraph Formatting Codes

Returns

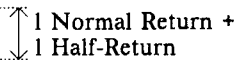
Return Characters are entered by pressing the [Return] key. A Return will terminate the current line, and begin the next line at the left margin position, one line-feed further down the Page. The Return character, unlike most of the special characters, has the same effect on the Editor screen as it does during Typesetting.

Half-Returns

Half-Return Characters are placed in the text by pressing [Extra]+[Return]. Instead of moving down the Page by a whole line, they move only half a line. This effect is most useful for creating a blank line which is only half-height: the gap between this paragraph and the next is created using two normal Returns:



The Half-Return character can be used after a normal Return to create paragraphs which are spaced like this:



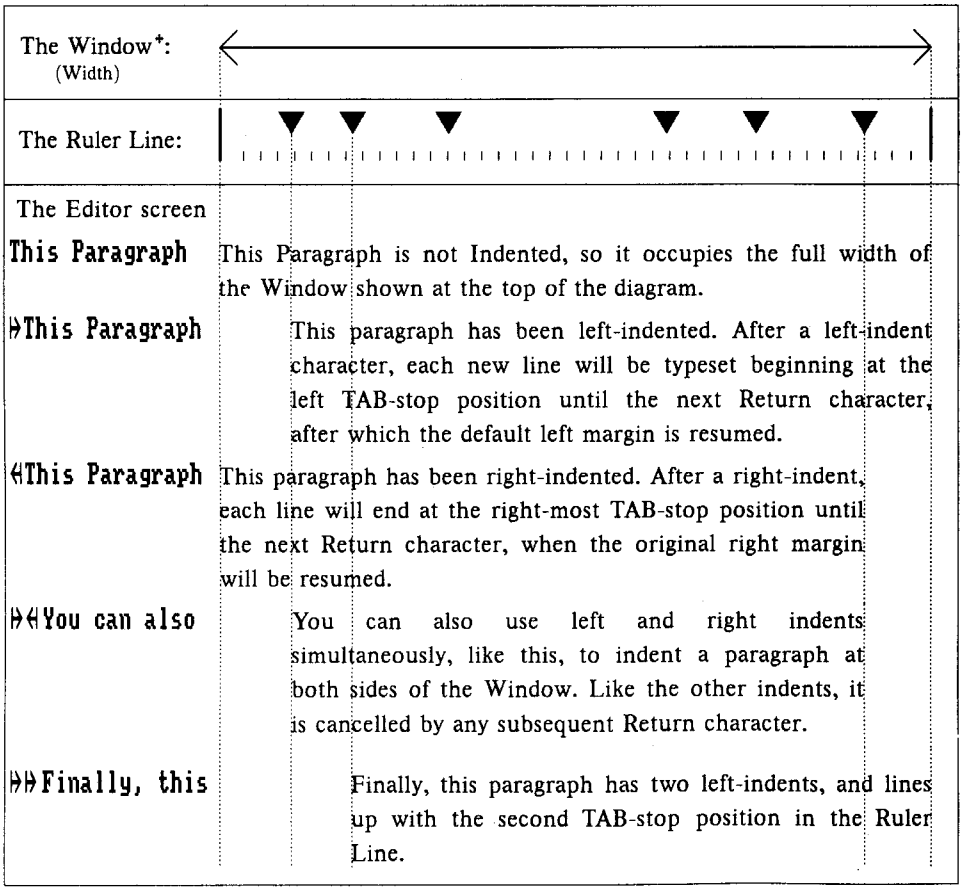
The Half-Return appears in the Text Editor Section as a '⊡' symbol, and on the Editor screen, it has the same apparent effect as a normal Return.

TABs

TABs are entered using [Tab], and force the next character to be typeset at the next TAB-stop across the column: the positions of the TAB-stops are set in the Ruler Line, using the **SetWindow** operation. See SetWindow, page 4-23.

Left-Indents & Right-Indents

Left-Indent Characters are placed in the text by pressing [Alt]+[Tab], and **Right-Indent Characters** by pressing [Alt]+[Shift]+[Tab].



*or column in a Multi-Column Window.

Page/Column Marker

Page/Column Markers are placed in the text by pressing [Alt]+[Return]. During Typesetting, a Page/Column Marker will always force the typsetting to begin a new column, or if there are no more columns, to stop the Typeset operation.

Line Formatting Codes

Line Format Codes

The Line Format, or 'Justification', can also be controlled from within the text file. By default, the alignment of Typeset text is controlled by the Line Format setting in the Typeset Format Menu: however, like the Character Style overleaf, the Line Format setting can also be changed during typesetting by inserting Control Characters into the text file. There are four Formats: Left-Aligned, Right-Aligned, Centred and Justified text. The effects of these settings are illustrated under 'Typeset', on page 4-27. The codes themselves are entered in the text by pressing the ⊞ or ⊟ key, followed by the initial letters [L], [R], [C] and [J].

Justification

⊞L, ⊞R, ⊞C, ⊞J

Note although each Line Format setting has ON (⊞) and OFF (⊟) markers, only one setting can operate at once. Any Line Format ⊞ code (⊞L, ⊞R, ⊞C, or ⊞J) cancels the existing setting. Any Line Format ⊟ code (⊟L, ⊟R etc) restores the option which was set before the previous ⊞ code, so to use the ⊟ codes properly, you must always be aware of the previous setting: in practice, it is usually simpler to use the ⊞ codes wherever possible. You should also avoid switching Justification on or off (⊞J or ⊟J) in the middle of a line.

Non-Break Character

Non-Break Character: there is a special way of marking any character as a 'non-break' character. The typesetting system has a list of characters which it can allow to be the last character in a typeset line: the most common is [Space], but lines are also broken after full-stops, commas, colons, and semi-colons. The problem arises when you want to use one of these characters in a position where it should not be allowed to break a line: for example, using a comma in a number (10,000), or using a space between the two parts of a post-code (ST14 7AG). If you want to prevent the program from splitting a line after one of these characters, you can mark it as a "Non-Break Character" by pressing [Extra]+[N] before typing the character itself. Non-Break characters are indicated on the Editor screen by putting a line above them:

Soft Hyphens

Soft Hyphens are rather like the opposite of non-break characters: they are used to place line breaks in long words. The typesetting system will treat soft-hyphens as normal hyphens if the word in which they occur would otherwise be moved onto the subsequent line, but it will ignore them altogether if they occur in the middle of a line. Soft hyphens are typed by pressing [Extra]+[-], as in LocoScript. Note that very long words can contain more than one soft-hyphen: when the word is typeset, the program will use the most sensible hyphen, and ignore the others.

See **Typeset**, page 4-28, for more details.

Font Control Codes

Font Control Codes

These are used for switching between the three fonts during typesetting. They use the ⊞ key, followed by the font number, [1], [2] or [3]. You can use these codes to change font at any point in the text, even halfway across a line: you can use this system to switch easily from one font to another.

Fonts and Returns: the Line Pitch

Fonts and Returns

If you are switching between fonts of different sizes, they will probably have different Line Pitch settings. This means that the vertical distance between lines will vary according to whichever font is selected when the lines are typeset. For example: if you have a large font loaded into slot one, and a small font loaded into slot two, you can do either of the following:

1: A Big Headline
Then some small text

(⊞1 A Big Headline ⊞2↵)
(Then some small text)

2: A Big Headline
Then some small text

(⊞1 A Big Headline ↵)
(⊞2 Then some small text)

In example 1, the Return character was typeset in font two, producing a small line-pitch. In example 2, the Return was typeset in font one, giving a bigger line pitch.

Style Control Codes

Style Control Codes

When the text in the Editor is Typeset, there are six different *styles* which can be used to alter or emphasize each character, and these style effects can be switched on and off using Control Codes. The Text Editor supports control codes for **Bold**, Double-strike, Highlight, *Italic*, Outline and Underline effects. Most of these Styles are available in LocoScript, Protext and other word-processors, and where appropriate the codes used by these programs will be correctly converted when the document is loaded into MD3: this means that text which is marked as Bold or Italic in a LocoScript document will be typeset correctly when the file is imported. Styles which are not usually supported by word-processors (for example Highlight and Outline) can sometimes be imported using special codes: see appendix 3.

Start ⊞ and End ⊟ Markers

All the Style effects operate between Start and End markers, which are placed in the text using the ⊞ and ⊟ keys. For example: to mark one word in **Bold**, place the cursor at the beginning of the word and type ⊞ followed by [B] (for bold) to position a Start Bold marker. Then move the cursor to the end of the word and press ⊟ followed by [B] to position the End Bold marker.

These codes affect only the current Font: MD3 remembers a separate set of styles for each Font, so style changes made with one Font selected will not be evident after changing to a different Font.

CONTROL CODE LIST

Control Code Listing

The complete list of Control Codes and special characters, and the symbols which are used to represent them on the Editor screen, are as follows:

	Key-letter or Key	ON Symbol	OFF
Bold	⊞ or ⊟ [B]		
Double	⊞ or ⊟ [D]		
Highlight	⊞ or ⊟ [H]		
Italic	⊞ or ⊟ [I]		
Outline	⊞ or ⊟ [O]		
Underline	⊞ or ⊟ [U]		
Left-align	⊞ or ⊟ [L]		
Right-align	⊞ or ⊟ [R]		
Centre text	⊞ or ⊟ [C]		
Justify L+R	⊞ or ⊟ [J]		
Select Font 1	⊞ [1]		
Select Font 2	⊞ [2]		
Select Font 3	⊞ [3]		
TAB	[TAB]		
Left Indent	[Alt]+[Tab]		
Right Indent	[Alt]+[Shift]+[Tab]		
Carriage Return	[Return]		
Half-Return	[Extra]+[Return]		
Page/Column marker	[Alt]+[Return]		

THE MICRODESIGN3 CHARACTER SET

Character Set Listing

The complete set of characters used in the MicroDesign3 text system, and the keys used to type them, is illustrated on the following pages. The characters are shown as they appear in the Text Editor, and their "numbers" indicate the byte values used to store them in MD3 Text files.

When importing text from word-processor files, most characters will be converted to their nearest equivalent in the MD3 character set: see appendix 3 for more information.

Number	Editor symbol	Name/Comments	Keys (Default UK Keyboard)
08	⇤	Left Indent	ALT Tab
09	→	Tab	Tab
11	↵	Half-Return	EXTRA Return
12	↧	Page-Column Marker	ALT Return
14	↵	Hard Return	Return
22	⇥	Right Indent	ALT SHIFT Tab
31	¬	Soft Hyphen	EXTRA Hyphen
32	Space		
33	!	Exclamation	
34	"	Quotes, Inches	
35	#	Hash	
36	$	Dollar	
37	%	Percent	
38	&	Ampersand	
39	'	Apostrophe, Feet	
40	(		
41	)		
42	*	Asterisk (large)	
43	+	Plus	
44	,	Comma	
45	-	Hyphen (lower-case)	Hyphen
46	.	Full-Stop	
47	/		
48	0		
49	1		
50	2		
51	3		
52	4		
53	5		
54	6		
55	7		
56	8		

Number	Editor symbol	Name/Comments	Keys (Default UK Keyboard)
57	9		
58	:		
59	;		
60	<		
61	=		
62	>		
63	?	Question-Mark	
64	@	At-Each @	
65	A		
66	B		
67	C		
68	D		
69	E		
70	F		
71	G		
72	H		
73	I		
74	J		
75	K		
76	L		
77	M		
78	N		
79	O		
80	P		
81	Q		
82	R		
83	S		
84	T		
85	U		
86	V		
87	W		
88	X		

Number	Editor symbol	Name/Comments	Keys (Default UK Keyboard)
89	Y		
90	Z		
91	[		
92	'	Close Quote (Apostrophe)	ALT]
93	]		
94	½	Half	
95	-	Hyphen (upper-case), Minus	SHIFT Hyphen
96	`	Open Quote	ALT [
97	a		
98	b		
99	c		
100	d		
101	e		
102	f		
103	g		
104	h		
105	i		
106	j		
107	k		
108	l		
109	m		
110	n		
111	o		
112	p		
113	q		
114	r		
115	s		
116	t		
117	u		
118	v		
119	w		
120	x		

Number	Editor symbol	Name/Comments	Keys (Default UK Keyboard)
121	y		
122	z		
123	{		
124	»	Close Quotes (French)	ALT (
125	}		
126	«	Open Quotes (French)	ALT)
127	£	Pound (UK)	
128	B	**Bold On**	⊞ B
129	B	Bold Off	⊟ B
130	D	Double On	⊞ D
131	D	Double Off	⊟ D
132	H	Highlight On	⊞ H
133	H	Highlight Off	⊟ H
134	I	*Italic On*	⊞ I
135	I	Italic Off	⊟ I
136	O	Outline On	⊞ O
137	O	Outline Off	⊟ O
138	U	Underline On	⊞ U
139	U	Underline Off	⊟ U
140	L	Left-Align On	⊞ L
141	L	Left-Align Off	⊟ L
142	R	Right-Align On	⊞ R
143	R	Right-Align Off	⊟ R
144	C	Centre On	⊞ C
145	C	Centre Off	⊟ C
146	J	Justify On	⊞ J
147	J	Justify Off	⊟ J
148	1	Font 1	⊞ 1
150	2	Font 2	⊞ 2
152	3	Font 3	⊞ 3
160	Ø	O 'Slash'	ALT 0
161	¹	Superscript 1	ALT 1

Number	Editor symbol	Name/Comments	Keys (Default UK Keyboard)
162	²	Superscript 2	ALT 2
163	³	Superscript 3	ALT 3
164	·	Decimal Point	ALT 4
165	¼		ALT 5
166	đ		ALT 6
167	℅	Care-of	ALT 7
168	æ		ALT 8
169	œ		ALT 9
170	Ø	Capital O slash: NOT Zero	ALT SHIFT 0
171	¡	Inverted Exclamation	ALT SHIFT 1
172	■	Bullet	ALT SHIFT 2
173	¿	Inverted Question-Mark	ALT SHIFT 3
174	ß	Double-S (German)	ALT SHIFT 4
175	Æ		ALT SHIFT 5
176	Đ		ALT SHIFT 6
177	©	Copyright	ALT SHIFT 7
178	Œ		ALT SHIFT 8
179	Ø		ALT SHIFT 9
180	†	Dagger	ALT Hyphen
181	*	Small Asterisk	ALT =
182	°	Degrees	ALT SHIFT Hyphen
183	‡	Double-Dagger	ALT SHIFT =
184	¼		ALT SHIFT [
185	¾		ALT SHIFT]
186	⅓		ALT SHIFT (
187	⅔		ALT SHIFT #
221	¯	Non-Split Marker	EXTRA N

(This marker can be added to a space, full-stop, comma, colon or semi-colon. It ensures that a line will not be broken at the marked character.)

Number	Symbol		Name/Comments	Keys (Default UK Keyboard)
ACCENTS (shown on "e") must be typed BEFORE the character				
224	é	é	Acute	EXTRA E
225	è	è	Grave	EXTRA T
226	ê	ê	Circumflex	EXTRA U
227	ë	ë	Umlaut	EXTRA W
228	ě	ě	Hacek	EXTRA I
229	e	ė	Ring	EXTRA A
230	ẽ	ẽ	Tilde	EXTRA P
231	ė	ė	Overdot	EXTRA Q
232	ē	ē	Macron	EXTRA O
233	ĕ	ĕ	Breve	EXTRA S
234	ő	ő	Double-Acute	EXTRA R
235	e	e	Apostrophe accent	EXTRA K
236	ẹ	ẹ	Underdot	EXTRA H
237	ę	ę	Comma	EXTRA G
238	ę	ę	Cedilla	EXTRA D
239	ę	ę	Ogonek	EXTRA F

Non-UK Keyboards

Note that the table on the preceding pages shows only the UK keyboard configuration. For non-UK keyboards, any characters which appear on the key-tops will produce the corresponding character in the MD3 Editor, and the accents should be typed on these keyboards in the same way as they are entered in LocoScript. Characters which do not appear on the key-tops must be typed using combinations of [Shift], [Alt] or [Extra]: see Appendix 4 for a full list.

THE PRINT QUEUE EDITOR

The Print Queue Editor

The Queue Editor is dedicated to the creation and editing of the Print Queue. The Queue is used as a control system for the Print operation in the Layout section of MD3: it allows the automatic printing of a sequence of Pages. Use the **TXT/QUE** operation to switch between the Text and Queue Editors.

What It Does

What is a Print Queue?

As an alternative to simply printing the current Page, MD3 can load and print a Queue, or list of Pages, if you type the filenames for the pages into the Queue Editor. When you Print the Queue, MD3 looks at the first line of the Queue Editor for the name of the first Page or Area file to be printed. This file is then loaded from disc onto the Page, and printed: **note that the current contents of the Page are normally lost when the Print Queue is used.** When the Page has finished printing, the program looks on the next line of the text in the Editor for a second filename, and this process continues until no more valid filenames are found.

Page and Area Files

The Queue normally works with Page (**.MDP**) files: when entering the name of a Page file in the Queue, you must include the **.MDP** suffix. The Queue can also use Area files: you must also include the suffix (**.MDA**) of any Area files you use.

Writing a Print Queue

All filenames or commands in the Print Queue **must** begin with a '*' (large asterisk) character. This is followed by the (optional) drive letter and colon (**A:**, **B:**, etc), then the file-name, the suffix, and finally a Return (↵) character. If there is no drive letter in the name, the program tries to find the file on the last drive which was used (before printing the Queue) for loading a file of that type.

If the program finds a blank line or an invalid filename in the queue, or if it fails to find the specified file, the print run ends.

A simple Print Queue for printing a sequence of three **.MDP** Page files, the first two from drive A and the third from drive B, would appear in the Editor like this:

***A:PAGEONE.MDP↵**
***A:PAGETWO.MDP↵**
***B:PAGETHRE.MDP↵**

PRINT QUEUE COMMANDS

Print Queue Commands

As well as entering file-names in a Print Queue (see previous page), there are also a number of Commands for controlling the printer, and sending special code sequences to it. All the Queue Commands must begin on a new line, and must be prefixed by a "*" character. Note that the precise effect that a particular command will have may depend on your printer, so if you have an inexplicable problem with the Print Queue, check your printer manual. Some commands should be followed by numbers or letters: a single number is shown in the text as "***n***", and a sequence of numbers or letters as "***n n n***", separated by spaces.

*CURRENT

***CURRENT** simply re-prints whatever is on the Page at the point where the command occurs. This is normally the previous file-name listed in the Queue. The Current command is useful for repeating a Page in a Queue without needing to load the Page again, or for printing whatever was on the Page when you began printing the Queue.

*CODES

CODES *n n n You can send Control codes directly to the printer at any point in the Queue using this command. It gives you direct control of any printer features, but what these features are depends entirely on the printer you are using: consult the printer manual for details. Printer codes are numbers from 0-255 (ie single "bytes") separated by spaces, as shown by "***n***". You can also include ASCII characters in the codes string: ASCII data sent in the Queue must be enclosed in upright double-quotes marks ([Shift]+[2] on UK keyboard) if it includes numbers or spaces.

Printer Control Codes

The ability to send codes and characters directly to the printer is a very powerful feature of MicroDesign, but you should consult your printer manual carefully to find out what you can do and exactly which codes should be sent. Printer instructions usually take the form of 'Escape' codes, which are strings of codes beginning with 27, the code for the 'Escape' character. For examples of Escape sequences, see overleaf.

You can also use ***CODES** to send ASCII data to your print. For example, a page number can be printed in the printer's own Font at any point in the Queue using the line...

```
*CODES "MicroDesign Manual Page 1-2"↵
```

Please note that Printer Codes vary widely between different printers. Please do NOT ring our support line to ask what codes you should use: your printer manual will tell you what codes to use for different effects, and we are unlikely to know what codes to use on your particular printer!

***FORMFEED** sends a Form-Feed character to the printer. If the Print Menu "FmFeed" setting is switched OFF, use ***FORMFEED** to tell the printer that the current sheet is finished, and it should eject it and load another.

*FORMFEED

NEW** ***n selects a new Page Format: this is exactly like the **New** operation in the Typeset and Layout sections of MD3, and it must be followed by a single-digit number for the new Page Format. If you are printing Page (MDP) files, the Page format will be changed automatically when the file is loaded, but this does not happen with MDA Area files. See **New**, page 4-30, for more details.

*NEW

MARGIN** ***nn sets the left Margin as in the Print menu, in units of about 0.1"

*MARGIN

GAP** ***nn moves the paper forwards (or backwards if the printer is capable of it) by "***nn***". The distance "***nn***" can be followed by either "**mm**" (millimetres) or "**in**" (inches): if no units are given, "***nn***" is assumed to be the standard line-feed for the current printer (ie 1/216" for 9-pins, 1/300" for Deskjets and lasers, or 1/180" for 24-pins and Bubblejets. If you place a "minus" sign (or hyphen) before the number, the printer will feed the paper backwards if it has this capability.

*GAP

PAPER** ***nn sets the Paper length: see your printer manual for an explanation of exactly what this means on your printer. The units "***nn***" are the same as for ***GAP**, but rounded to the nearest "line", or 1/6". A4 Paper is 70 "lines" long, while 11" Continuous paper is 66 lines long. This setting over-rides the Paper Length setting in the Options section (see page 4-82).

*PAPER

PRINT QUEUE EXAMPLES

If you want to print two A5 Portrait Pages (stored on a disc in drive B) onto a single sheet of A4 paper, the Print Queue might look something like this...

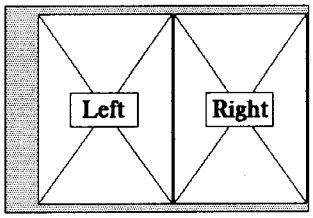
Print Queue Examples

```
*B:PAGERITE.MDP
*B:PAGELEFT.MDP
*FORMFEED
```

Remember that if you are printing more than one file on a single sheet of paper, you must switch off the **FMFEED** setting in the Print Menu, and use ***FORMFEED** to eject the finished sheet from the printer.

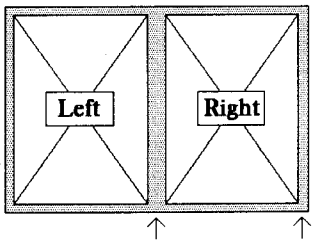
Print Queue Examples (cont)

Now imagine that when you try printing this Queue, the first page is printed too close to the top of the paper, and the second is printed too close to the first, so that it looks like this:



The solution is to insert two Gaps into the Queue, say a half-inch gap before printing the first Page, then a three-quarter-inch gap to separate the Pages.

```
*GAP 0.5in
*B:PAGERITE.MDP
*GAP 0.75in
*B:PAGELEFT.MDP
*FORMFEED
```



Gaps: ¾" ½"

Uni-Directional Printing

A simple example of using an Escape sequence with ***CODES** is as follows. Some 24-pin printers can print "Bi-Directionally" (*ie* it prints each line in alternate directions), but this often gives poor results when printing vertical lines on an MD3 Page: these lines have a "stepped" appearance. You can usually instruct these printers to switch to "Uni-Directional" printing by sending them the Escape sequence "Esc U 1". In the Print Queue, to send this sequence and then print the current Page, use...

```
*CODES 27 U 1        (Note that this is NOT the same as 27 U "1")
*CURRENT
```

Colour Separations

The final Queue example prints three different "colour separations" on a colour dot-matrix printer. First, design your Page and save separate Page files for each colour: here, these files are called REDBITS.MDP, BLUEBITS.MDP, and BLAKBITS.MDP, and they are stored on drive A. The Codes sequences are correct for most types of colour dot-matrix printer, but this is not intended as a "worked example", merely as an illustration of how to use the Print Queue.

```
*CODES 27 r 1        Select Red printing
*A:REDBITS.MDP       Load and print the Red separation
*CODES 27 12         Wind the paper back to the beginning
*CODES 27 r 2        Select Blue printing
*A:BLUEBITS.MDP      Load and print the Blue separation
*CODES 27 12         Wind the paper back to the beginning again
*CODES 27 r 0        Select Black printing
*A:BLAKBITS.MDP      Load and print the Black separation
*FORMFEED            Eject the finished printout.
```

THE GRAPHICS SECTION

The Graphics Section

The Graphics Section controls most of the operations for drawing on the Page. In the Graphics Section, the Main Screen displays a 'Window' through which you can see an area of the Page at full scale, rather than the reduced-size picture of the Page which appears in the Layout and Typeset sections. All Graphics operations work within this Window. **It is not possible to use the Graphics Section to draw anything on an area of the Page which is not visible within the Graphics Window at the time.**

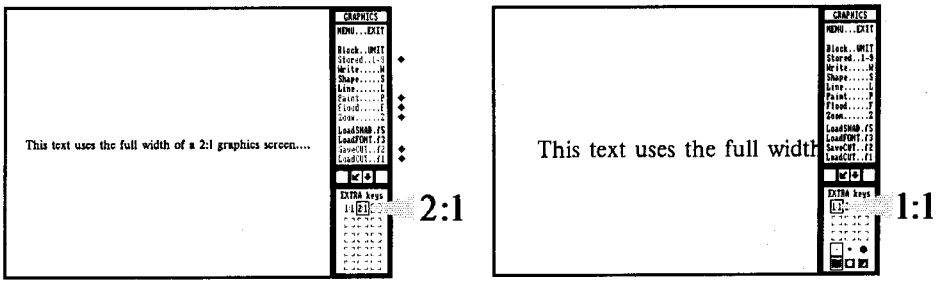
The operations available in the Graphics Section are listed in the Operations Menu on the right of the screen.

The Graphics Scale

View-Scale: 2:1 and 1:1

The Page in MD3 is composed of dots, or "pixels", just like the PCW screen. When you look at the Page in the Layout or Typeset sections, you are not looking at an exact dot-for-dot representation of the Page contents, because the PCW screen does not have enough dots to do this: instead, each dot on the Layout and Typeset screens represents a square of 8x8 actual dots on the Page.

The Graphics section gives you a more detailed view of a part of the Page, by displaying it at a higher magnification. At the top of the Extra menu in the Graphics section, there is a setting for the View-Scale: you can use this to display a small area of the Page at the full 1:1 View-scale, where one dot on the screen represents one dot on the Page; you can also select a 2:1 view-scale, which allow you to see four times as much of the Page on the screen, but in less detail.

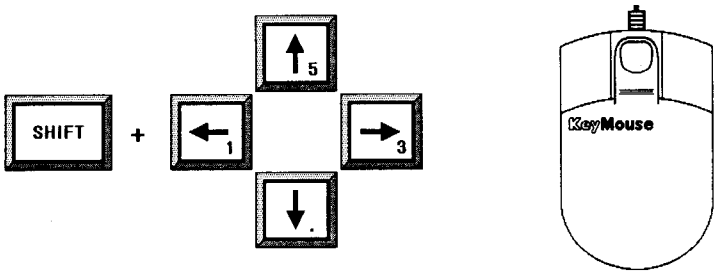


Not all of the Graphics operations can be used at the 2:1 View-scale: Paint, Flood, Load and Save CUT, Zoom, and some Block operations are only available at 1:1. If an operation is not available at 2:1, it appears in the menu in 'grey', rather than the usual black lettering: these menu entries are marked (•) in the 2:1 diagram above.

Scrolling the Graphics Window

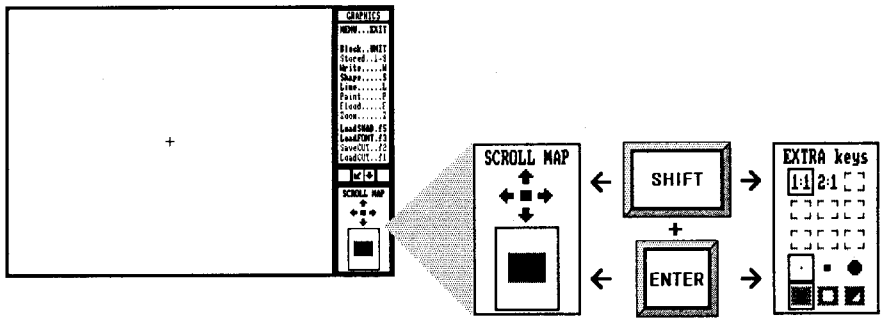
Scrolling the Graphics Window: The Scroll Map

"Scrolling" means moving the position of the Graphics Window around the Page. You can Scroll the Window in any direction by pressing [Shift]+[↑↓←→], or by holding down the mouse middle button and moving the mouse.



Scroll Map

The Extra menu in the Graphics Section can be switched between two functions: it can display either the Extra Features for the current operation as usual, or it can display the **Scroll Map**. This Map is a picture of the whole page at a very reduced scale, with the current position of the Graphics Window indicated as a rectangular shadow on it.



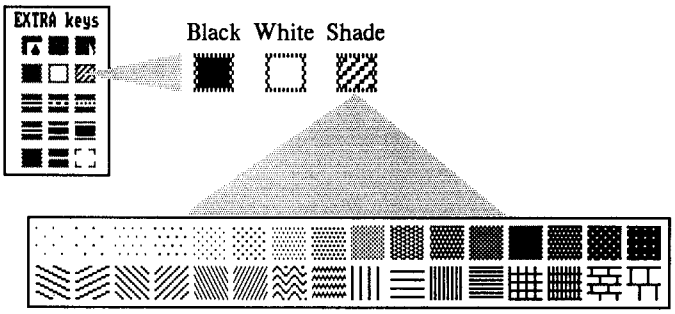
Scrolling with a 2-Button Mouse

The Scroll Map is displayed by pressing [Shift]+[Enter], or (with the mouse) by clicking over the ⊡ symbol which appears beside the mouse ☑ symbol below the Operations Menu. Pressing [Shift]+[Enter] or clicking over ⊡ again brings back the Extra Features. There are four arrows above the Scroll Map: clicking over these arrows with the mouse left button scrolls the screen, so that you can scroll even with a two-button mouse. Pressing [Shift]+[Doc/Page] or clicking over the mark in the centre of the four arrows centres the Graphics Window on the Page.

Shades and Fill-Patterns

Fill-Patterns & Shades

The Graphics section has several operations which can cover an area of the screen with "ink": examples include Shapes, which can 'fill' the inside of a rectangle or circle, and Paint, which places ink on the Page using a 'brush'. All these operations can use solid Black or White ink, but they also have a third option, called **Shade**.



The Shades Menu

The Shades are a set of 32 pre-defined patterns, which are loaded when MD3 is run. You can display the Shades menu at any time: just press [Relay] or click over ☑. You can choose a Shade from the Shades menu by clicking over it, or by using [↑↓←→]. When you have selected a Shade, click over ☑ or press [Relay] again to remove the Shades menu and return the cursor to the Graphics screen.

Several different sets of Shades are supplied in the MD3 Library as Shades files: they have the file-suffix "**.MDS**". You can load a new set of Shades using the **LoadSHAD** operation: see Filing, page 4-1.

Plotting Points

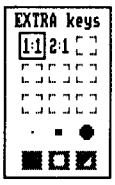
Plotting Points: Freehand Drawing

If the View-Scale is set to 1:1 and no Operation is selected, dots can be plotted at the current cursor position by pressing the mouse left button, or [Space]. If you move the mouse while holding down the left button, or press the cursor keys while holding down [Space], the program draws a line: plotting points is the simplest way of drawing freehand in MD3.

When you draw with the mouse, the program does not begin plotting points as soon as you press the button: a short delay makes it possible for you to position the cursor without marking the Page if you want to. The Mouse Plot setting in the Options section can be used to switch off this delay, making it easier to draw freehand with the mouse.

Extra Features

You can select the dot size using Extra row 2, and the Ink colour (Black, White or Exor) using Extra row 1. If you change the View-scale to 2:1 using Extra row 5, the plotting options will disappear, because you can only use them in the 1:1 View-scale.



GRAPHICS SECTION OPERATIONS

BLOCK

Block

This operation defines a rectangular area of the Page, or "Block". When you have defined the Block, you can Erase or Invert it (black-white swap), Move or Copy it to a different part of the Graphics Window, Re-scale it to a different shape or size, or Store it in memory for use later. When you select **Block**, the program displays a frame on the Graphics screen. You can change the size and shape of the Block frame using the mouse left and right buttons, or [↑↓←→] and [Space]. The border of the frame is always included in the Block.

Marking Blocks

When you have positioned the frame around the Block you want, select a Block Operation from the menu by pressing one of the keys listed, or by clicking over the operation you want.

Destination Frame

Destination Frame

When you select the Copy or Re-scale operations, a second frame appears on the screen over the first. This is the Destination frame, and it indicates where the Block will be 'stuck down' when it is Copied or Re-scaled.

Block Operations

Erase

Block Erase simply erases the area bounded by the Block, leaving white space.

Invert

Block Invert changes all black pixels within the Block to white, and all white ones to black.

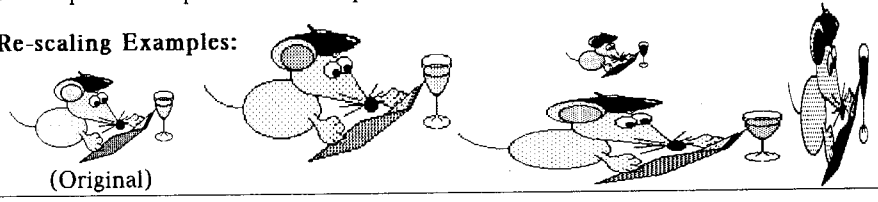
Copy & Move

Block Copy: a copy of the original marked block is Copied or Moved to a new position. Choose between Move and Copy using the Extra Features: see opposite. Use the left button or [↑↓←→] to position the Destination Frame, then ☑ or [Enter] to complete the Copy.

Re-scale

Block Re-scale allows anything drawn within the block to be stretched or shrunk horizontally or vertically to any size. Use the mouse left and right buttons, or [↑↓←→] and [Space] to change the size and shape of the Destination Frame, then ☑ or [Enter] to complete the operation. This operation is only available in the 1:1 view-scale.

Re-scaling Examples:



(Original)

Store

Block Store enables you to store an area of drawing in one of nine numbered "slots" in memory: these slots are numbered 1-9, and are selected using the number keys. Stored Blocks can be recalled instantly, and 'stuck down' anywhere on the Page as many times as you like. To Store a Block in slot number 1, for example, position the block cursor around the area you want to store and press [1]. This operation is only available in the 1:1 view-scale.

Remember that as Stored Blocks are kept in memory, they will be lost when you leave MD3.

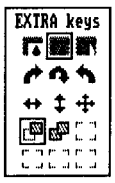
"TOO BIG" to Store

The amount of memory space available for Stored Blocks is limited: if the program tells you that your Block is "TOO BIG", use the **SaveCUT** operation described later in this chapter to store the area on disc. You can then re-load it later using **LoadCUT**.

Positioning the Destination Frame

Note: when you Copy or Re-scale a block, you will not see what the Destination Block actually looks like in its new position until the operation is Fixed using ☑ or [Enter]. If you do not like the result, you can always UNDO the operation using ☒ or [Word/Char], adjust the position or shape, and then ☑ or [Enter] again.

Extra Features for Block Copy and Re-scale Operations



Extras: Reflect and Rotate

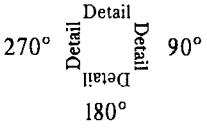
Extra Row 5 select modes Opaque, Transparent or Exor for the Destination block;
Row 4 allows you to Rotate the Destination Block through 90°, 180° or 270° (1:1 View-scale only)
Row 3 allows you to Reflect the Destination Block in the X, Y, or both planes (1:1 View-scale only);

Move / Copy

Row 2 selects the options for leaving the original block intact (a 'Copy' operation) or erasing it (a 'Move' operation).

Rotating & Loss of Detail

Note that the Rotate and Reflect options cannot be set simultaneously. If you try to use the Rotate feature with a Block which is too large to fit on the screen after rotating, a warning tone sounds and the Rotate feature is not acted upon. Detail is always lost when a Block is rotated through 90° or 270°, and this is especially noticeable on small text: it can be repaired using Zoom. No detail is lost when Blocks are rotated through 180°, or reflected.



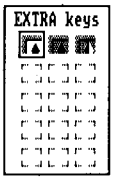
Stored

Stored

This operation (1:1 View-scale only) is used to 'paste down' an area of the Page previously **Stored** in a **Block** operation. You select a Stored Block by pressing the number of the Block you want to retrieve (use number keys [1]-[9], see Block Store above). When you press a number which has a Block stored in it, you will see a frame appear on the screen: this frame shows you the size of the Block. Use the left button or [↑↓←→] to position the block, then ☑ or [Enter] to 'paste' it down on the Page.

If nothing happens when you press a number, this means that the slot-number you have pressed does not have a Block stored in it.

Extra Features



Stored Blocks can be "stuck down" in Opaque, Transparent or Exor mode, as set by Extra row 5.

Write

Write

The Write operation allows you to write text directly onto the Page from the keyboard, in a variety of sizes and styles. Type the text on the keyboard, and press [Exit] (or click over "Exit" in the Write menu) to finish Writing.

Fonts and Extra Features in Write

Selecting Fonts & Styles

In **Write**, you can select any of the three fonts using Extra row 3. You can also bring up the Font Menu for the current font by clicking over ☑ or pressing [F5]. See "Fonts", page 4-15, for details of how to use the Font menu. You can also select the style options (Bold, Italic etc) using Extra rows 4 and 5: see below. If you are using Write at the 2:1 view-scale, changing Font may change the position of the base-line by a single pixel. Always use 1:1 scale if you are changing font while Writing.

The Window

The Window: you can use the Typesetting Window to limit the area of the Page on which you can Write. The Extra menu has a setting for Window OFF or ON: if the Window is switched ON, it appears on the Graphics screen as dotted lines, and you can only Write on areas of the Page which lie within these lines. If you switch the Window OFF, you can Write anywhere on the Page.

Returns

Return Key: In Write, the [Return] key acts as a Line Feed and Carriage Return key, as on a typewriter. Pressing [Return] always moves the cursor to the left edge of the Page (or of the Window if it is switched ON), and moves down the Page by one Line Pitch (as set in the Font menu). To move the cursor instantly to the top left corner of the Window or Page, press [Alt]+[Shift]+[Doc/Page].

TABS

Tabs do not have any effect in Write.

Kerning

Kerning: the characters will be Kerned automatically as they are typed, if the Kerning setting in the font menu is switched on. If you move the Write cursor using the cursor keys, the next character will not be Kerned. Avoid using the Highlight and Underline options with the Kerning switched on: these combinations of effects can produce some strange results!

UNDOing Write

UNDOing: Write operations cannot be Undone in the usual way, but the program remembers the positions of the last 90 or so characters you Wrote. To delete these characters one by one, select Write again, and press the [←Del] key. When deleting Kerned text, always delete and re-type complete words to ensure that the Kerning is correct.

Extra Features in Write

Extra Keys: Fonts & Styles

Extra row 5 selects the **Bold**, Double-strike and Highlight options.
Extra row 4 selects the *Italic* Outline and Underline options.
Extra row 3 selects Font 1, 2 or 3.
Extra row 1 is used to switch the Window on or off.

See **SetWindow** in the Layout Section for more information about the Typesetting Window.

NOTE In Write, you can switch the six Style options (Bold, Italic etc) on and off using the ⊞ and ⊟ keys (just like in the Text Editor section, or in Locoscript), as well by using Extra keys. This works as follows:

⊞ followed by [B] switches **on** the Bold option
⊟ followed by [B] switches **off** the Bold option
⊞ followed by [D] switches **on** the Double-strike option
⊟ followed by [D] switches **off** the Double-strike option

...and similarly for

⊞ or ⊟ [H]: Highlight
⊞ or ⊟ [I]: Italic
⊞ or ⊟ [O]: Outline
⊞ or ⊟ [U]: Underline

SHAPES

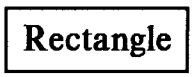
Shapes:

There are five Shapes available in MD3's Graphics Section: Rectangle, Circle, Ellipse, Diamond and Triangle. All of them can be adjusted in a similar way using the keyboard and the mouse, and all have the same set of **Extra Features**. You can select a Shape either by clicking over **Shapes**, then over one of the shape names which appear in the Shapes sub-menu, or more directly by pressing the Key-Letter for the desired shape: [R] for Rectangle, [C] for circle, and so on. When you have placed the Shape where you want it, use ☑ or [Enter] to complete the operation. If you don't like the result, remember that you can always UNDO the operation by clicking over ☒ or pressing [Word/Char].

Control Points

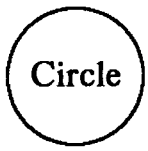
Control Points

All the Shapes are positioned using Control Points, like the frames used in the Block operations. Use the mouse left and right buttons, or [↑↓←→] and [Space], to move the control points around the screen. It is easier and quicker to use the Shape control points if you have a mouse.



Rectangle

This has three control points: two corners for changing the rectangle size, and one in the centre for moving its overall position, just like a Block frame.



Circle

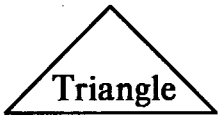
This also has three control points: the top (or bottom), the side and the centre. The centre control point shifts the position of the circle: the side control point changes the size of the circle when the cursor is moved sideways; the top or bottom control point changes the Circle size when moved up or down. Note that circles do not always appear perfectly circular on the screen: depending on the type of printer you are using, they may be pre-distorted so that they are perfectly circular on the final printout.

Ellipse

This functions similarly to **Circle**, except that the side and top control points change the ellipse shape as well as the size.

Diamond

This functions similarly to **Ellipse**. It draws a diamond shape with horizontal and vertical axes: is you want to draw a parallelogram with horizontal or vertical **sides**, you must construct it using two Triangles.



Triangle

This allows you to draw any triangle using three independent control points, so that they can be aligned in any direction. There is no central control point for Triangles.

A word about Speed

Speed of large Circles & Ellipses

In the 2:1 View-scale, large Circles and Ellipses can take a surprisingly long time to Fix, because of the mathematical complexity of the operation. If nothing seems to happen for several seconds after you Fix, don't worry!

Maximum Size for Circles and Ellipses

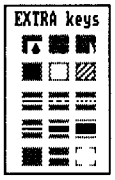
Maximum Size of Circles & Ellipses

There is a maximum size for Circles and Ellipses. If you are using the 2:1 View-scale and you try to FIX a Circle or Ellipse which has a radius bigger than 352 pixels, the program will tell you that it is "TOO BIG". If you need to use a bigger circle than this, create a half-size Circle, save it using SaveAREA, then re-load it with the 'x2' option selected: see LoadAREA.

Extra Features for Shapes

Extras: Outline and Fill Styles

All shapes have the same Extra Features: the bottom three rows (1, 2 and 3) of Extra Keys control the shape Outlines, and the top two rows control the area inside the shape, called the Fill. Either the Outline or the Fill features can be turned off altogether by selecting an option which is already selected, but you cannot switch off both the Outline and Fill simultaneously.



Row 5 selects Opaque, Transparent or Exor mode for the Fill ink.

Row 4 selects the ink used for Filling Shapes: the Fill ink can be Black, White, or Shaded (using the currently selected Shade: press [Relay] to change the Shade: see page 4-65).

Row 3 gives solid or dotted Shape Outlines.

Row 2 selects the Outline thickness.

Row 1 selects Black or White ink for the Outline.

Line

Line

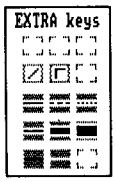
The Line operation draws a single (usually straight) line, in Black or White ink. The Line can be dotted or continuous, and you can vary its thickness.

When you select Line, nothing seems to happen. This is because the operation works by drawing a line which starts at the current cursor position: if you move the cursor, you will see the program draw a line back to where you started. Use the right button or [Space] to flip the cursor control to the other end of the line, and ☑ or [Enter] to fix it.

Right-Angled Lines

If you have selected the right-angle option (see Extra Features below), you can 'flip' the direction of the angle by holding down the left button while clicking the right button, or by pressing [Alt]+[Space].

Extra Features



Extra row 4 allows selection of a straight line between two points, or a right-angled line.

Extra row 3 selects solid or dotted lines;

Extra row 2 selects line thickness;

Extra row 1 selects Black or White ink.

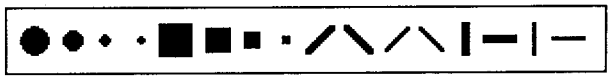
Paint

Paint

When you select Paint, you will see the paint **Brush** appear on the screen: the Brush is used for placing Ink on the Page, and it can be moved to spread the Paint around. The ink can be Black, White, or Shaded, and can be used in Opaque, Transparent or Exor modes: use the left button or [Space] and [↑↓←→] to Paint.

Paint Brushes

There are sixteen different sizes and shapes of Brushes: use the arrow symbols in Extra row 2 to cycle around them.



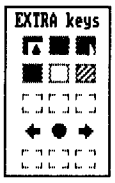
UNDOing Paint

UNDOing Paint

UNDOing the Paint operation removes all the paint which has been put on the Page since **the last time the Graphics Window was scrolled**, or since Paint was last Fixed. To get the best from the UNDO facility, do your Painting a little bit at a time: when you are happy with the result of one part, scroll the screen one step, then scroll it back again and start on the next part.

Extra Features

Extra row 5 selects Opaque, Transparent or Exor modes.
Extra row 4 selects Black, White or Shaded Paint.
Extra row 2 is used to select the Brush.



Flood

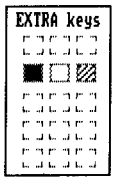
Flood

This operation is used to 'fill' a continuous area of Black or White pixels with ink: Black areas can be flooded in White, and White areas can be flooded in Black. Any area can be flooded with the current Shade.

Note that if you try to flood in Black ink beginning on a black pixel, or in White ink beginning on a white pixel, the Flood operation will do nothing. There is a (very large) limit on the number of connected 'areas' which can be flooded: if you try to flood an area which is covered in a grey-shaded pattern, for example, you may find that the complexity of the shape defeats the program's ability to flood it in a single operation.

Extra Features

Extra row 4 changes the Flood style between Black, White and Shade: see page 4-65 for more information about Shades.

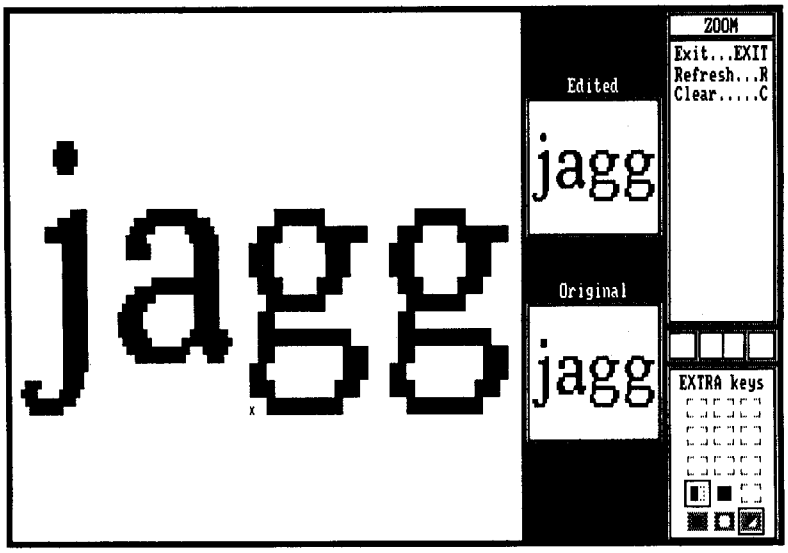


Zoom

Zoom

This operation allows you to "Zoom in" on a small section of the page, so that you can edit the finest detail. When you select Zoom, a frame is displayed on the Graphics screen: use the left button or [↑↓←→] to move this frame over the area you want to Zoom in on, and press ☑ or [Enter]. The area within the frame is magnified so that each individual dot can be edited. The **Original** sampled area and the new **Edited** version are displayed at 1:1 scale beside the zoomed area, so that you can see the effect of any changes you make.

In the example below, a small font has been re-scaled up, and the resulting loss of resolution makes the letters look jagged. The letters 'j' and 'a' have been 'smoothed' using Zoom to improve their appearance, while the two 'g's are unedited. The "Original" panel shows how the area looked when Zoom was selected, and the "Edited" panel shows the editing work that has been done on the 'j' and the 'a'.



Editing in Zoom

As with Plotting, you can change individual dots in Zoom by pressing the left button, or [Space].

Zoom Sub-Operations

Two sub-operations appear in the Operations menu:

Sub-Operations:

Refresh restores the original sample to the edit screen: to restore the original Zoomed area to the Graphics Window and abandon the Zoom operation, click over **Refresh**, then **Exit.**

Refresh

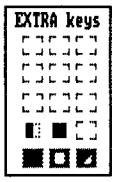
Clear empties the Zoom screen altogether: the contents are deleted, but can be restored using **Refresh.**

Clear

Selecting **Exit** from the Operations menu returns to the normal Graphics section, complete with any changes you have made.

Exit

Extra Features



Extra row 2 has an option for plotting in whole pixels, or half-pixels.

You can plot dots in Black, White or Exor inks, as set by Extra row 1.

LoadSHAD

This operation loads a new Shade ("**.MDS**") file from disc. See Filing, pages 4-1 and 4-9, for more details.

LoadSHAD

LoadFONT

This operation loads a new text Font ("**.MDF**") file from disc: see **Filing Operations**, page 4-1, for more details.

LoadFONT

SaveCUT

This operation saves an area of the Graphics Window to disc as an uncompressed '**.CUT**' file. After selecting SaveCUT, define the area to be saved using the left and right buttons or [↑↓←→] and [Space] to position the frame, then ☑ or [Enter] to bring up the Filing Window. For a full explanation of all Load and Save operations, see **Filing Operations** on page 4-1.

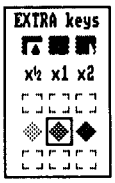
SaveCUT

LoadCUT

LoadCUT

This operation loads an area or picture from a '**.CUT**' disc file. Some CUT files may occupy an area larger than the Graphics Window: these files will be loaded automatically at half size. CUTs of any size can be loaded in the Layout Section using the LoadArea operation. See **Filing Operations**, page 4-1, for more details.

Extra Features



Extra row 5 selects Opaque, Transparent or Exor mode.
Extra row 4 selects half, normal or double size. You cannot select the double-size option if the image will not fit on the screen at double-size.

Re-scaling CUTs

Extra row 2 controls the dot-density, or 'darkness', of CUT files which are being re-scaled to a reduced size as they are loaded: see page 4-8 for details of how to re-scale CUTs. If a reduced image appears too dark after it is loaded, try loading it again with the lighter setting ([Extra]+[←]): if it appears too light, switch to the darker setting ([Extra]+[→]).

Key-Functions

Special Key-Functions in the Graphics Section

[Stop]	can usually be used to abort an operation: this is especially useful for Stopping operations which can take a long time to complete, such as Flood.
[Extra]+⊞	repeats the last operation.
[Doc/Page]	centres the cursor on the screen.
[Shift]+[Doc/Page]	centres the Graphics Window on the Page.
[Extra]+[Space]	reduces the Frame or Shape size to zero during Block and Shape operations. This is especially useful for clearing any or all of the Stored Blocks, by storing a zero-sized block.

THE SYSTEM OPTIONS SECTION

The System Options Section

This section of MD3 is used to set up the program for your own particular hardware configuration, amount of memory, printer, mouse, and so on. The Options are saved on your MD3 Working disc, and will be loaded automatically whenever MD3 is run from that disc. Most of the Options are set during the "MD3MAKE" installation process, so you should not have to change them: if you do decide to change them, read the appropriate section of this chapter to make sure that you know exactly what you are doing.

SaveOPTS

SaveOPTS

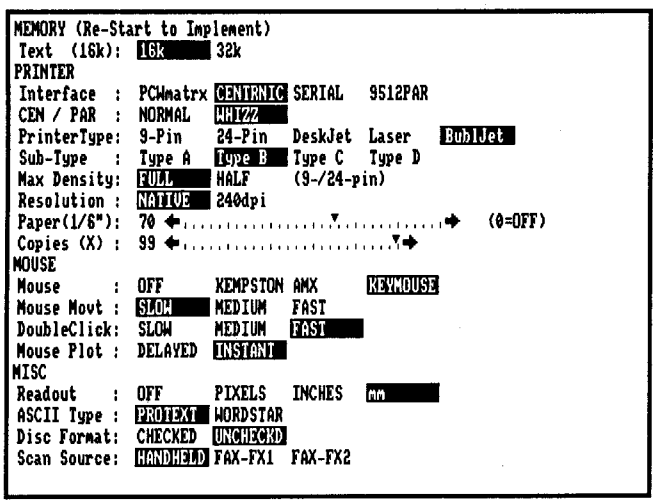
The only operation in this section is SaveOPTS, which is used to save the Options on your Working Program disc. It simply saves a complete set of Options, as they are currently displayed on the screen: the same options will then be loaded automatically whenever the program is run from that disc. Saving a new Options file always destroys the old one.

Even if you have a hard drive, the program will still ask you to insert your Working disc when you save the Options: just continue using ☑ or [Enter].

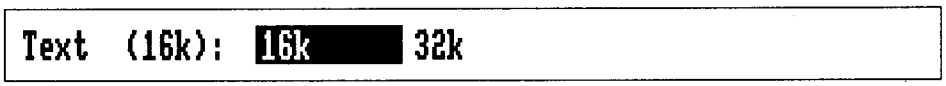
THE SYSTEM OPTIONS

Options Screen

The Options themselves are split into four groups:



Text Memory



TEXT MEMORY OPTION

By default, MD3 allocates 16K of memory to the Text Editor: this is the maximum amount of memory available for the text file and the print queue. If you want to load a text file which is bigger than 16K, you can use this option to allocate 32K to the Editor. Memory allocation can only happen as the program is started-up, so if you change this option, you must Save the options on your working disc, then press [Shift]+[Extra]+[Exit] to re-boot your computer, and run MD3 again. The figure in brackets indicates the current Editor memory allocation.

Text & Fonts

The extra 16K is taken from the font memory allocation, reducing the amount of memory available for fonts: this may mean that you are unable to load the same set of fonts you were using before. **NOTE: If you have created your own BOOT.MDT Template file, and you then change this option so that the fonts in the Template are too large to fit into the reduced font memory, the Template cannot be loaded, and MD3 will fail to run, displaying the message "Error in BOOT.MDT".** If this happens, you must use CP/M or LocoScript to delete the options file called **MD3.OPT** from your Working Disc, then run MD3, set all your Options, and save them again. If you are not sure how to set the Options, you will have to re-install the program using the MD3MAKE program on your original Master Disc: see page 1-2.

'Error in BOOT.MDT'

To make room for a 32K Editor allocation in a 512K PCW, you may have to load three small fonts (remember that you can use the blank font called **BLANK.MDF**), re-save the **BOOT.MDT** Template, and then re-boot and run MD3 again.

Printer Options

Printer Options

These options are used to tell MD3 what kind of printer you are using, and how to communicate with it. They should all be set correctly during the MD3MAKE process, but there are a number of reasons why you may need to change them later. **You cannot damage either the printer or the computer by setting these options incorrectly**, so don't be afraid to try different settings if your printer does not work.

Interface

PCW Printer

Centronics & Parallel

INTERFACE selects the communications "port" which MD3 uses for printing. The **PCWMATRIX** setting is used for the PCW 8256, 8512 or 9256 integral dot-matrix printer. If you have one of these machines but you want to use an external printer via a Centronics interface (including a RamPort), use the **CENTRONICS** option. If you have a PCW 9512 or 9512+ and you want to use a printer which is connected to the built-in parallel port, use the **9512PAR** setting. If you are using a serial printer connected via an RS232 link, set this option to **SERIAL**. Serial printers are not common: if you are using a combined Serial-Parallel interface and you are not sure whether you are using the serial or the parallel port, try the **CENTRONICS** setting first.

CEN / PAR 'Whizz' Printing

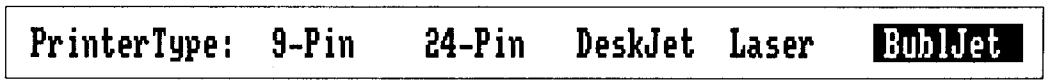
CEN / PAR: this option is effective only if you are using the Centronics or 9512PAR setting for the **Interface** option. It is used to increase the rate at which the printer information is sent, and therefore to speed up printing: it uses the printer driver routines which were supplied for use with MicroDesign2 on our Utilities Disc. To speed up your printing, try setting this option to **WHIZZ**.

Long Cables

There are two possible problems with faster printing. The first may arise if you are using a long Centronics cable, because the combination of long cables and fast transmission can cause data-corruption. The only way to find out if your cable is too long is to try it: if the program prints correctly with this option set to **NORMAL**, but does not print correctly if you select **WHIZZ**, you will have to put up with normal-speed printing (or use a shorter cable!).

SCA Printer Interfaces

The second possible problem is the new type of Centronics printer port which is fitted to SCA Systems' RamPac-Plus and Pro9256 products. Because these devices use a hardware design which is different from the original PCW Centronics port, they cannot be driven using the **WHIZZ** system, only using the **NORMAL** setting.



Printer Type

PRINTER TYPE

MD3 can use a wide range of different printers, but they fall into five main categories. The MD3MAKE installation process should set the Printer Type and Sub-Type options correctly, but if you change your printer, you may need to alter them. If you are not sure which options to select, you can always re-make your working disc using MD3MAKE. **If you change the Printer Type setting, always select an appropriate Page Format using the New operation (or run MD3 again) before trying to print.**

9-pin

9-PIN dot-matrix printers should be Epson- or IBM-compatible, and have a quadruple-density graphics capability, to work properly with MD3. If you have problems using a 9-pin printer, check the printer manual for information about graphics modes, and see **Sub-Types** opposite.

24-pin

24-PIN dot-matrix printers should also be Epson- or IBM-compatible, but should have a "Hex-Density graphics" mode: see Sub-Types opposite.

Deskjet

DESKJET means the Hewlett-Packard Deskjet range of printers, or a printer which emulates the Deskjet (eg the Olivetti JP-150 and JP-350).

Laser

LASER printers must be HP-Laserjet compatible, or the Canon LBP laser type: see **Sub-Types** opposite. **Laser printers MUST contain a minimum of 1.5Mb of memory if you want to use them with MD3.**

Bubblejet

BUBLEJET: this refers to all Bubblejet printers, which include the Canon BJ10e, BJ10ex, BJ20, BJ300 and BJ330, the Starjet SJ-48, and other Bubblejets.

Sub-Type : Type A **Type B** Type C Type D

SUB-TYPES

Printer Sub-Type

Each Printer Type has four possible Sub-Type settings **A**, **B** **C** and **D**, to cope with small variations between printers of each type. The Sub-Types for each Printer Type are as follows: if a sub-type is not mentioned (eg 24-pin D), do not select it. If you are not sure which sub-type is suitable for your printer, try each in turn, ensuring that you test both Portrait and Landscape printing.

9-pin

9-PIN: **A** is a normal Epson-compatible 9-pin printer, using codes "27 * 3" to select quad-density graphics.

B uses codes "27 Z" to select quad-density graphics mode. Some older 9-pin printers use these codes rather than the standard Epson system.

C is the IBM ProPrinter 9-pin system.

24-pin

24-PIN: **A** is Epson LQ emulation.

B is the IBM ProPrinter XL-24 system.

Laser

LASER: **A** is the standard HP-Laserjet Plus system (technically "PCL level 3"), which will work on all Laserjet-compatible printers.

B is compatible with the HP Laserjet PCL level 4 or 5. It will print much faster than the Laser A option, but will only work with Laserjet-III printers and compatibles.

C drives Canon LBP 4 and LBP 8 lasers.

Deskjet

DESKJET: **A** works on all Deskjets and compatibles, including the Olivetti and Fujitsu Deskjet-type printers.

B uses "delta-row" compression to give faster printing on the HP-Deskjet 500 models.

Bubblejet

BUBLEJET: **A** uses Epson emulation to drive the Star SJ-48 in STD mode.

B uses IBM emulation (also called "BJ" mode) on the BJ10e, BJ10eX, BJ20, and Mode 1 on the BJ300 and BJ330.

C uses Epson emulation (also called "LQ" mode) on the BJ10eX and BJ20, or Mode 2 on the BJ300 or BJ330.

D uses IBM mode on the the Star SJ-48.

If you have a different Bubblejet printer, the correct Sub-Type setting will depend on which printer it emulates. If it has an IBM emulation, try sub-types B and D: if it uses Epson LQ emulation, try sub-types A and C.

Max Density

MAX DENSITY: If your 9-pin or 24-pin dot-matrix printer does not have the correct bit-image graphics mode for use with MD3 ("quad" density and "hex" density respectively), try setting this option to **HALF**. This uses a lower-resolution printing mode (dual or triple density), and the printout quality is degraded when compared to that produced by a printer with full graphics capability, but it may enable you to use a printer which would not normally be able to print from MD3 at all.

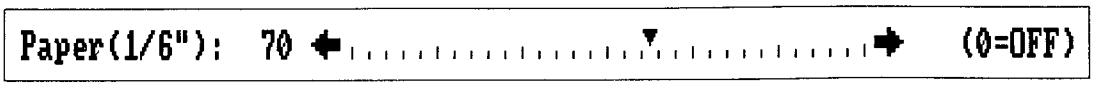
Resolution

RESOLUTION: This option allows you to select whether the Page formats are printer-specific (**NATIVE**), or the MicroDesign2-type 9-pin Page, which has a resolution of **240DPI**.

Page Formats & Memory

If you have a high-resolution printer such as a Bubblejet or 24-pin, but less than 1Mb of memory, you will find that the **New** menu does not allow you to select A4 Page formats: this is because there is not enough memory to hold all the dots on a full A4 page at the high resolution of these printers. Setting the **Resolution** Option to **240DPI** provides a way of designing a Page at lower resolution: this gives you the choice of full-sized A4 Pages in the **New** menu, but when you print these Pages, you will find that they are slightly poorer quality than the A5 printing you can achieve with the Resolution set to **NATIVE**. See page 4-17 for more information.

The best solution to this problem is (of course!) to fit more memory to your PCW, using the Creative Technology RamPort.



Paper Length

PAPER LENGTH: If you are using continuous paper in your printer, and you want to print multiple copies of a Page (see **Copies** below), you will need to tell MD3 the length of the paper. This option sets the paper length **in sixths of an inch**: the default setting is 70 for A4 paper, but you can change it to 66 if you have 11" continuous paper, or to any other length to suit the paper you are using.

If you are using an HP-Deskjet or a sheet feeder, or if you are not using continuous paper, this option should be set to 0.

Number of Copies

COPIES: When you Print, you can select the Number of Copies you want to print using the **Copies** entry in the Print Menu. This entry can be set to any number from 1-9, or to **X**: if you set it to **X**, the program will check this System Option, and print any number between 1 and 99 copies.

Mouse Options

Mouse Type

MOUSE: This selects the type of mouse you are using: we recommend KeyMouse as the best mouse for MD3 (partly because we designed it, but mostly because it is a higher-quality mouse which provides much smoother movement and higher resolution than other types). MD3 also supports the AMX and Kempston mice: set this option to the type of mouse you have, or switch it **OFF** if you do not wish to use a mouse at all.

Mouse Movement

MOUSE MOVT: This option controls the relationship between the speed of mouse movement and the speed at which the mouse arrow moves on the screen. It is sometimes known as the "sensitivity" of the mouse.

Double-Click Speed

DOUBLE-CLICK: Some operations can be Fixed and Undone by pressing a mouse button twice in quick succession. This is called a Double-Click, and it is interpreted differently from two single clicks. The time allowed between each click of a double-click is controlled using this option: set it to **SLOW** if you have trouble registering a double-click.

Mouse Plot

MOUSE PLOT: In the Graphics section of MD3, you can draw free-hand using the mouse left button. This is called **Plotting**. When you first press the button, the program does not begin drawing immediately, but gives a small delay before putting any ink onto the Page. This delay is useful for positioning the cursor without marking the Page, but it can make drawing a little awkward: set this option to **INSTANT** to remove the delay and begin plotting instantly.

Miscellaneous Options

Readout

READOUT: The Readout gives a display of the cursor position, and the height and width of any Block or Frame when appropriate. The Readout can be set using this option to display in **PIXELS** (dots), in **INCHES**, or Millimetres (**mm**). Note that you can change the Readout units at any time: press [Extra]+[X] to cycle the Readout through Pixels, Inches, Millimetres, or Off (no Readout displayed). You can also set the Readout to 0,0 at any position on the Page by placing the cursor at the position you want and pressing [Extra]+[0].

ASCII Type

ASCII TYPE: If you are using the **LoadText** operation to load Text Files from Protext or from Wordstar (New-Word is compatible with Wordstar), set this option to the correct file-type.

Disc Format

DISC FORMAT: when you use the **Format** operation in the Filing Utilities menu, this option selects whether the disc is checked (or 'verified') during formatting. Formatting is faster if this option is set to **UNCHECKD**, but there is an increased risk that some disc errors will not be detected.

Scan Source

SCAN SOURCE: MD3 can scan images directly onto the Page using the ProSCAN hardware. As in the ProSCAN program, you can scan using the normal **HAND-HELD** scanning head, or using the Amstrad fax machines (types 9600T and 9600AT only). Use this option to tell MD3 which scanning device you are using: if you are using a fax scanner, try the **FAX-FX1** setting first, and if this does not work properly, try the **FAX-FX2** setting. See appendix 2 for more information about the scanner.

Appendix 1: TROUBLESHOOTING

Trouble-Shooting

This appendix anticipates some of the problems which may arise when using MD3, and offers some hints on how to cure them.

Running MD3: The BOOT Template

The BOOT Template

When MD3 is loading, it must be able to find a Template file containing three fonts, otherwise it cannot run. It looks for a Template called **BOOT.MDT**, which is created on your Working disc during the MD3MAKE process. If you change your BOOT Template by loading some different fonts and saving a new Template called BOOT on your Working disc, MD3 will load this during start-up instead. However, there are two potential pitfalls associated with changing the BOOT Template.

Blank Fonts

The first possible problem is that you may erase the Template from your Working disc altogether. You should NEVER erase files from a Working disc, but if you do so by mistake, MD3 will fail to find the BOOT Template, and will start-up with a Blank Template, which uses three blank fonts (ie the font **BLANK.MDF** loaded into all three font slots). To restore your BOOT Template, load the three fonts you want, select a new Page format (use **New**), and use **SaveTMPL** to save the Template under the name BOOT.

If MD3 will not run...

"Error in BOOT.MDT"

The second possible problem is that your BOOT Template may not fit into the memory available. If you create your BOOT Template on a PCW with extra memory, then try to use the same Working disc on a PCW without extra memory, the BOOT Template may be too big to load, and MD3 will abort with the message "**Error in BOOT.MDT**". This can also happen after changing the Memory Option from 16K to 32K. If you encounter this error, use CP/M or Locoscript to delete **BOOT.MDT** from the disc, then run MD3 again: it will then run with the Blank Template, as above, and you can then load some proper fonts to create a new BOOT Template.

Printer Problems

Printing

There are several Printer Options in the System Options section. If you have any problems using **Print**, check the settings of these options.

Printer Interface Option

Printer Interface Option

If you try to use the **Print** operation and nothing happens at all, check that the **Printer Interface** selection in the Options Section is set correctly. If you are using the integral dot-matrix printer supplied with the PCW 8256, 8512 and 9256, set the Printer Interface to **PCWMATRIX**: this option should NOT be selected when you are using a PCW9512 or 9512+, or an external printer.

Serial & Centronics Printers

A **SERIAL232** printer is connected to an RS232 interface, and a **CENTRONICS** printer is connected to an external Centronics interface. 9512 and 9512+ users should note that the **Parallel** interface fitted to these machines is not the same as an **external** Centronics interface: when a printer is connected to the 9512/9512+ Parallel socket, the Printer Interface Option should be set to **9512PAR. NOTE: due to an error in some early versions of the 9512 CP/M operating system, the PAR connection may not work unless the 9512's own daisy-wheel printer is still connected to the computer.** This does NOT apply to the PcW9512+ or 9256, or to updated versions of the 9512 CP/M.

See the Options Section, pages 4-79 to 4-82, for more details of printer options.

CEN, PAR AUX & LPT: "Not Ready"

If you have set your options correctly but Print still does nothing, wait for about 30 seconds after printing should have started, and look in the bottom left corner of the screen for one of these error messages:

CEN NOT READY and **PAR NOT READY** indicate that the printer connected to the Centronics or Parallel port is not ready, perhaps because it has no paper in it, or because it is switched Off-Line, or even because you have set the wrong Printer Interface option: check the printer and the options, as above.

AUX NOT READY means that you have selected the Serial printer option, and there is no printer connected to the Serial port. If you get this message, you have probably selected the wrong Printer Interface option: see page 4-79.

LPT NOT READY means that the PCW's own dot-matrix printer is selected in the Options (PCWMatrix), but is not ready to print (or is not connected).

When one of these printer errors is displayed, the only way to cancel it and return to MD3 is to press [C] for Cancel, then **very quickly** press [Stop] to stop printing.

Laser Printers

Laser Printers: laser printers must contain enough RAM to store a full page of Graphic data (generally about 1.5 Megabytes).

Other printer problems may include:

Stretched Printouts

The **auto line-feed** setting on external dot-matrix printers: if printouts appear stretched vertically, then the printer may be executing an extra line-feed at the end of each line. Check the printer DIP-switch settings and consult the printer manual.

Form Feed & "Waiting for Paper"

Form-feeds and '**Waiting for Paper**' with the PCW's own dot-matrix printer: when printing multiple copies or using the **Queue**, the PCW may stop after each Page and display a 'Waiting for Paper' message on the Printer Status line at the bottom of the screen. There are two ways to prevent this. You can use the CP/M program called

'PAPER.COM' before running MD3: with your CP/M disc in drive A, at the CP/M **A)** prompt, type...

PAPER C PAPER OUT DEFEAT ON DEFAULTS↵

Controlling the PCW Printer

...then insert your MD3 working disc in the same drive and type

MD3↵

Alternatively, you can use the Print Queue to send the following codes before printing (see page 4-60):

***CODES 27 c** sets Continuous Paper (cf. "PAPER C"), so that the printer does not go into its "Waiting for Paper" mode at the end of each sheet;

***CODES 27 "8"** disables the printer's Paper Out detector (cf "PAPER OUT DEFEAT");

More codes for controlling printers can be found on page 4-63, and (for the PCW printer) in your PCW's CP/M manual.

Wrong Page Length

Wrong Page Length: if you are using continuous paper and try to print multiple copies of an MD3 Page on successive sheets of paper, you may find that the printer does not wind the paper the correct distance between each sheet. This can be cured by setting the **Paper** option in the Options section, to tell the program how long your paper is: see page 4-82.

White Stripes

White Stripes in the top line of your printout:

This is caused by 'slack' in the printer mechanics. It can be solved by using the Print Queue command ***GAP**: just send the line...

***GAP 5mm**

to wind the paper forward 5mm before printing. See page 4-60 for information about Print Queue Commands.

24-pins: Bi-Directional Printing

Uneven Vertical Lines are sometimes produced by **24-pin printers in Bi-Directional Printing Mode**. You can sometimes set Uni-Directional printing using the printer dip-switches (see your printer manual), but if there is no dip-switch for controlling this feature, you may also be able to set Uni-Directional printing using ***CODES** in the Print Queue. The most common code is "Esc U 1": see page 4-62 for more information.

Print Queue

If you try to print a Queue and nothing happens, make sure that you typed the Queue into the Queue Editor, not the Text Editor!

Graphics

Shapes or Lines do nothing

Shapes or Lines do nothing

If you use the drawing operations such as Line or Rectangle, and nothing appears on the Page when you Fix, the Ink colour is probably set to White.

"TOO BIG": Circle & Ellipse

Circle or Ellipse "TOO BIG"

There is an upper limit on the size of the Circle and Ellipse: the radius must be less than 352 pixels. If you try to FIX a shape which exceeds this limit, the program will display the message "TOO BIG".

"TOO BIG": Block

Block "TOO BIG to Store"

There is a limited amount of about 6K of memory available for Stored Blocks, even though there are nine "slots" in which different Blocks can be Stored. If when you try to Store a Block, the program displays the message "TOO BIG", the total amount of memory used by the other Stored Blocks does not leave room for the one you are trying to Store.

Blocks are stored in data-compressed format: the more detail there is in the Block, the more memory it will occupy. Storing a complete screen with no detail takes up hardly any space, but a single Block with lots of fine detail can still be "TOO BIG", even if it is smaller than the screen.

Text

ASCII Files

ASCII files

Most PCW users generate their text files using Locoscript2, Protext, Wordstar or New-Word. For those who want to use other word-processor programs, MD3 will import ASCII files into its Text Editor section.

This is a useful feature, but it may require a little adjustment to get the best results. For example, you should be aware of how your word-processor formats a document before saving it: every effort has been made to preserve as much formatting information as possible when files are loaded, but the different ways in which different packages store the text data may produce ASCII codes or formatting information that MD3 does not recognise, or may misinterpret.

If, for example, the document has a Left Margin, this may appear in the file as Space or Tab characters: these may appear anywhere in the text after it is typeset, instead of at the beginning of the lines where the word-processor intended them to be.

Removing & Replacing Un-Wanted Characters

Remember that you can use the **Find/Exch** facility in the Editor to find all the occurrences of a particular character, control code, or sequence of characters and codes, and to substitute a different sequence (or to Exchange a blank sequence, which acts as a "Find-and-Delete"). This is handy if your word-processor uses an unusual control code system, or if you find that your file has multiple spaces or TABs scattered through it.

Typesetting

The Typeset Start Cursor and the Top of the Window

The Top of the Window, & the Typeset Start Cursor

When you select Typeset, the Typeset Start Cursor is positioned at the top left corner of the Window. The program always allows enough space above the Start Cursor to fit the tallest font you have loaded into the top line. This means that typesetting will always work properly from the default Start Cursor position. However, if you move the Start Cursor closer to the top of the Window before typesetting, and use a large font in the top line of the text, the program will try to typeset characters outside the Window. Typesetting characters outside the Window is not permitted, so the program will Beep and omit all the characters which do not fit.

Stopping and Re-Starting: the Line Pitch

Uneven Lines

Line Pitch and Ruled Lines

If the vertical spaces between your typeset Lines appear to be uneven when they are printed, this may be because you Stopped in the middle of a typeset operation (or in the middle of UNDOing a typeset), then re-started the typesetting. If you are using a Line Pitch setting which is not a multiple of 8, stopping and re-starting a typeset can cause the lines to be unevenly spaced: you must UNDO back to the top of the page or column, and re-do the whole column. Alternatively, use the Ruled Lines system to ensure that the text is correctly aligned: see page 3-11.

Scanning

Vertical Lines

Scanning

If you find that vertical lines appear on the screen when you scan, there is probably a bad connection between the computer and the ProSCAN interface. Try cleaning the edge-connector: see appendix 2.

General

9512 and 9512+ Keyboards

Keyboards

The PCW9512 and 9512+ keyboard layouts, and the Teqniche replacement keyboard, all differ substantially from the 8256, 8512 and 9256 keyboard, but the letters and symbols written on the keys correspond very closely. Most illustrations in this manual show the 8256-style keyboard, but even if your keyboard is different, you should have no problem using the keys listed in the Menus and in this manual. The keys marked 1/4 and 3/4 will produce the '{' and '}' Curly Bracket characters.

Non-UK Keyboards

Non-UK Keyboards

During the MD3MAKE copying process, you will be asked to enter the nationality of keyboard you are using. MD3 supports all the different PCW keyboards, and the letters written on the key-tops will always be generated in the Editor. Other characters which are not printed on the keys must be generated by pressing key-combinations: full details of the different keyboards are given in appendix 4.

If you are using a non-UK keyboard and you have a problem with keyboard characters appearing incorrectly in the Editor Section of MD3, do let us know by writing to us at the address given in the front of this manual. Also, remember that text files created by non-English word-processor programs may not be correctly imported by MD3, although LocoScript2 and Protext files should work properly.

Re-Logging Discs

Disc Anomalies

After inserting a new disc and selecting a filing operation, you may find that the Disc Free Space figure given in the Filing Window is incorrect, or that files which you know to be on the disc are not listed. If this happens, re-initialise the disc (press [Alt]+[A] for drive A, [Alt]+[B] for drive B, etc) so that the disc directory is re-logged.

Missing Disc Files

Missing Files

The maximum number of disc files which MicroDesign can list in any filing operation is about 90. If you use a search string which should display more than 90 file-names, the most recently saved files will be missing from the list. Use a more specific search string to display a smaller number of files.

If there are fewer than 90 files listed but some files still seem to be missing, try re-initialising the disc, as described in "Disc Anomalies" above.

Vortex & ASD Hard Discs

Vortex/ASD Hard Discs and the Amx Mouse

There is a hardware incompatibility between the Vortex and ASD hard disc drives and the AMX mouse. It is impossible to use the AMX mouse with these hard discs, and the Vortex is also incompatible with the KeyMouse: for these (and other) reasons, we recommend the Cirtech hard discs for use with MD3.

Appendix 2: THE IMAGE SCANNER

The Scanner

MD3 supports an image-scanning system, and this appendix explains how to fit the scanner hardware to your PCW, and how to use the scanner in MD3. (The scanner hardware is identical to the ProSCAN system: if you have a ProSCAN package, the manual includes most of this information, but scanners supplied with MD3 do not include a separate manual.) If you bought the scanner along with MD3, we recommend that you complete the MD3MAKE process before trying to connect the scanner: make and test your MD3 Working Disc before following the instructions in this appendix. If you already have ProSCAN, leave the scanner hardware connected while you install MD3.

The scanner system uses a hand-held **Scanning Head**, which is four inches wide, and can operate at resolutions of 200, 300 and 400 Dots-Per-Inch (DPI). This head is connected to the PCW via an **Interface** box, which fits onto the PCW's Expansion connector, at the back of the computer.

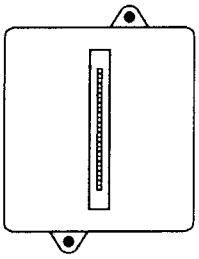
Amstrad Fax

As well as using the hand-held head, MD3 can also scan a full A4 sheet at 200dpi using an Amstrad FX9600T or FX9600AT Fax machine. If you are using an Amstrad Fax scanner, you should have been supplied with a special cable to allow you to connect the scanner output socket on the back of the fax to the scanner interface.

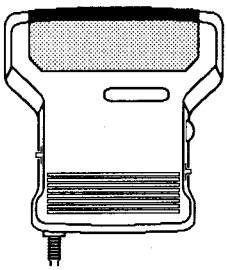
The scanner is very simple to fit to your computer, and very straightforward to use. However, we strongly recommend that you follow these installation instructions VERY CAREFULLY, because it is quite possible to damage your computer if you make a mistake.

The illustration below shows the Scanning Head, and the Interface through which you can connect the scanning head to your PCW:

The Interface



The Scanning Head



FITTING THE SCANNER HARDWARE

Fitting the Scanner & Interface

REMEMBER THAT YOU SHOULD ALWAYS TURN OFF THE POWER AND DISCONNECT THE COMPUTER FROM THE MAINS BEFORE CONNECTING OR DISCONNECTING ANY HARDWARE PERIPHERALS OR INTERFACES.

Plugging the Scanning Head into the Interface

First, connect the scanning head to the interface. The interface has a small round socket for the scanning head connector, and you must ensure that you check the orientation of the plug to make sure that its pins line up with the holes in the socket. When you first push the plug carefully into its socket, you may find that it is a little stiff.

AMSTRAD FAX CONNECTION

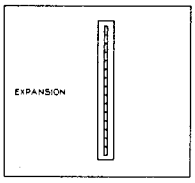
If you are using an Amstrad Fax instead of a hand-held scanning head, use the cable supplied to connect the scanner interface to the round socket on the back panel of the Fax machine.

Connecting the Interface to the Computer

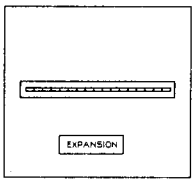
If you do not have any other interfaces attached to your PCW...

Expansion Connector

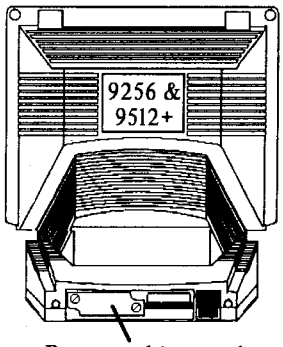
The scanner interface must be connected to the narrow strip of circuit-board, labelled EXPANSION, which sticks out of the back of the PCW: this is oriented horizontally on the PCW9512, and vertically on the 8512 and 8256. On the 9256 and 9512+ models, the Expansion connector is mounted horizontally, and is covered by a plastic cover:



8256/8512



9512



Remove this panel

9256s & Export Models

IF YOU HAVE A 9256, the interface will not plug directly onto the expansion connector: a short extension cable is required. **IF YOU HAVE A PCW WHICH WAS ORIGINALLY DESTINED FOR EXPORT** (to Europe or the US), the Expansion connector may be surrounded by a plastic or metal socket. If so, you will need an extra adaptor plug to connect the scanner interface. Contact Creative Technology at the address given at the beginning of this manual for details of how to obtain these cables.

If you have never attached an interface to your PCW before...

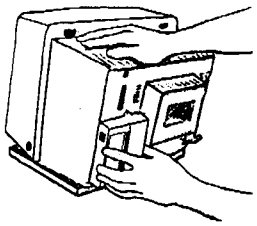
Cleaning the Expansion Connector

Some of the expansion connector's 'tracks' may have become a little dirty. This can cause problems with the electrical connections, so it is a good idea to clean it before going any further. Wipe it with a piece of cotton-wool dipped in surgical or methylated spirit.

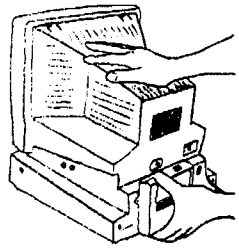
If you think that your edge connector may still be dirty, or if you are re-fitting the interface because it did not work properly the first time, try pushing the scanner interface on and off the connector ten or twelve times to scrape any residue off the tracks.

Fitting the Interface

Now position your scanner interface so that its slotted socket lies over this strip of circuit board: **ensure that the writing on the scanner interface is facing away from the back of the computer, and that the interface is the correct way up** (see diagram). Next, push the interface gently against the computer, so that the circuit board slides into the slot. Push it firmly and squarely, but **DO NOT FORCE IT**: if it will not connect properly, take it off and try again.



8256 / 8512



9512 / 9512+

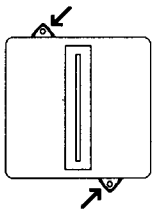
The Expansion Connector on the 9256 is oriented in the same direction as on the 9512 and 9512+ models.

Securing the Interface

Securing the Interface

You should see that on the interface, there are two mounting tabs with holes for the mounting screws, and two corresponding holes in the PCW casing. You should now use the two screws supplied with the package to attach the interface securely to the computer.

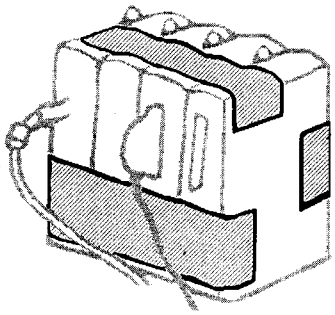
Screw holes:



Securing Several Interfaces

If you already have another interface(s) attached to your PCW...

With the power switched off and the PCW disconnected from the mains, remove the interface(s) from the back of the computer. Next, attach the scanner interface to your other interface(s), **making sure that they are both the right way round:** the printing on the scanner interface should indicate the correct orientation, and should face away from the back of the computer. Ideally, the scanner interface should be closest to the computer, since it has to transfer data at much higher rates than most other interfaces. We recommend that you secure your interfaces together using some kind of adhesive tape (such as masking tape), as illustrated in the diagram below: it is important that the interfaces are well-supported, because if they move or slip off while the power is turned on, the computer may be damaged. You could also secure several interfaces by tie-wrapping them together, or in any other way you can think of!



When the interfaces are securely joined together, plug them onto the circuit-board labelled EXPANSION which sticks out of the back of the computer (see diagrams on previous page). Again, it is most important to ensure that they are both the correct way up. Finally, use the screws to attach the interface which is closest to the computer firmly to the computer casing.

Switching on the Power...

Switching on...

When you are ABSOLUTELY SURE that the interface is correctly connected, you can connect your PCW to the mains. If you are using an Amstrad Fax machine instead of a scanning head, switch on the power to the Fax machine before continuing.

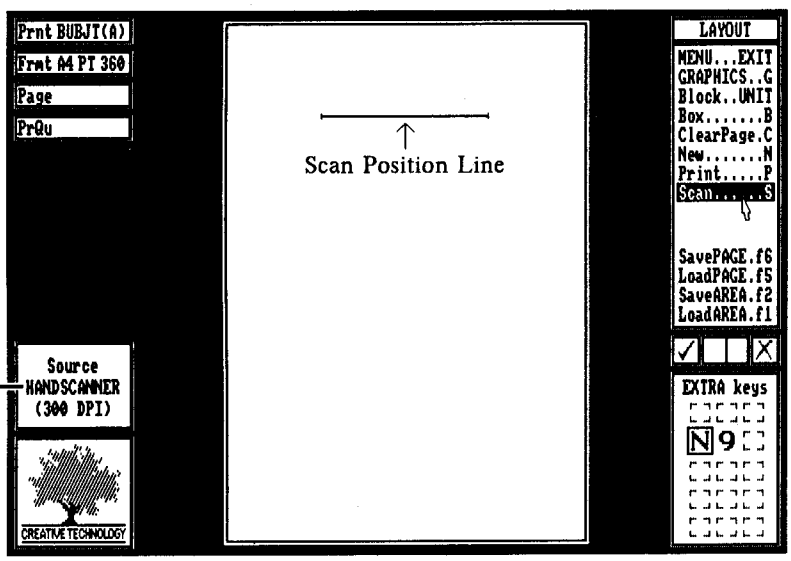
Switch on the computer and insert your MD3 or CP/M Start-of-Day disc.

If the computer doesn't start up as normal, **SWITCH IT OFF AGAIN IMMEDIATELY.** There may be a problem with the hardware installation you have just done, so go back to the beginning of this appendix to check every step of the installation process.

USING THE SCANNER

Scanning

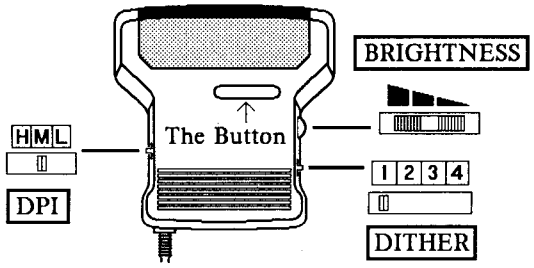
To test the scanner, run MD3 and move to the Layout section via the Main Menu: if you are not sure how to do this, consult the Introduction to this manual, page 1-6. Once in the Layout section, select the **Scan** operation by clicking over Scan in the Operations menu, or by pressing [S]:



Using a Hand-Held Scanning Head

When you press [S], you should see the SCAN entry in the Menu light up, and the green light in the scanning head should switch on, so that you can see it shining out of the bottom of the head. (If the scanner fails to light up, switch off the computer

and check the installation process again, making sure that you clean the Expansion Connector as instructed.) You should also see a horizontal line appear at the top of the Page: this line represents the width of the scan, and the line length depends on the current setting of the Scale switch on the left side of the scanning head. This switch has three positions, labelled H, M and L: we will deal with what this means later, but for the moment, set it to M.



The Scanning Head Controls

On the right side of the scanning head, there is a rotary control, and another switch with positions labelled 1, 2, 3 and 4: set the rotary control to the centre position, and the switch to position 1.

Now press [Enter]. The screen should go blank, and a single line should appear across the top to tell you that the program is ready to scan. To test the scanner, try scanning a line-drawing or a piece of printed text: if you like, you can even scan this page.

Position the head with the transparent part at the top of the image, and make sure that you can roll the head easily over the paper with no obstructions.

Scanning Speed

The next step is to activate the scanning head itself. On the top of the head is a large grey button (see diagram): the scanner will not actually start working until you push this button. Push it now: you should see a red light switch on beside the button, indicating that the scanner is active. Roll the head slowly over the paper, and watch the scanned image appear on the screen. If the computer makes a clicking noise as you roll the scanning head, you are moving it too fast.

Troubleshooting: if it doesn't look quite right...

Adjusting the Scanner Controls

When the scanning head is operating, the program provides a **Scan Restart** facility: this allows you to scan a part of the image, see how it looks, and start the scan again after adjusting the scanner controls to improve it. Press the [Can] key each time you want to restart.

If the image is approximately correct, the first thing you might notice is that it is too dark, or too light: in extreme cases, you may not be able to make out any image at all. The light/dark setting is a rotary control situated on the right side of the scanning head: try changing the darkness by moving this control, then press [Can] to restart and scan again. If nothing appears on the screen as you scan, check that the red light in the scanning head is switched on: if it isn't, press the button on the top of the head. Try adjusting the brightness control as you scan, and see the effect on the image.

If the screen is filled with complete rubbish, particularly straight vertical lines, then there is a problem with the Expansion connector at the back of the computer. Switch off, remove the interface, and start the installation again, remembering to clean the connector as detailed earlier in this appendix.

Using the Amstrad Fax

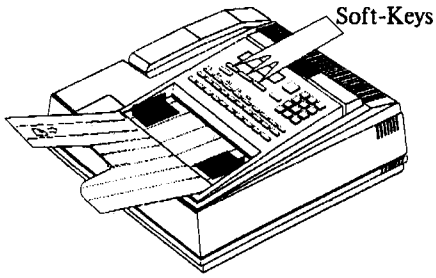
Using an Amstrad Fax

If you are using an Amstrad Fax machine for scanning, after pressing [S] to launch the Scan operation, press [Enter] to start scanning. Next, find a sheet of A4 paper which you would like to scan. Push the sheet into the Fax machine face-down in the normal way, and press the FINE and COPY buttons together. The Fax should now scan the sheet, and you should see the left edge of the scan appearing on your screen.

Using 'Setup'

If it doesn't look quite right...

If the image is too dark or light, you will have to use the Fax's SETUP system to change the Document Density. Use the three buttons below the display, called 'SOFTKEYS':



Brightness

First, press buttons 1 and 3 together to enter SETUP. Next, press button 1: the words 'Document Density' should appear on the display. Press button 2 to change the Density: the display will now show the words 'Threshold Level', and a number from 0-7. Now the confusing bit: to make your scan appear **Lighter**, you have to make the threshold level **Darker** (button 1), and if your scan is too light, make the threshold level lighter (button 3). When you have set the new threshold Level, press button 2 to select it, then buttons 1 and 3 together to end the SETUP procedure.

Grey-Scales & Half-Tones

Grey-Scales

You may wish to use the half-tone facility provided in the Fax scanner: half-tones, also called Dither Patterns, are used to simulate grey-shades in scanned images. You may find that different half-tone settings work better with different types of image, and different types of printer, so it is best to experiment.

GETTING THE BEST RESULTS: SCANNING TIPS

Scanning Hints & Tips

This section contains a detailed description of the scanning head itself, and how to use the different controls on it to produce the best results.

In order to help you see the effect of varying the scanning head controls, the program allows you to re-start a scan at any time by pressing the [Can] key. You can also vary some of the controls as you scan, to see their effects: note that the image which appears on the screen as you scan is the **left edge** of the complete scan.

The Scanning Head Controls

Scanning Head Controls:

The Scanning Head has three different controls, as illustrated on the previous page.

Brightness

Brightness

The lightness (or darkness) of any scan depends on the brightness of the original image, and on the setting of the Brightness control. Try varying this control while scanning, and see the effect.

When scanning a photograph or grey-scale picture, the best way to set the brightness control is to move the scanning head onto the darkest part of the image, and move it backwards and forwards over this area while reducing the Brightness gradually, until the dark area just appears black. Alternatively, use a similar technique with a white area.

The Scanning Scale: Dots Per Inch (DPI)

DPI Switch

The size at which the image is scanned into the computer can be varied by the dpi switch: this is the switch on the left side of the head, labelled H, M, and L. This switch allows you to change the number of dots which are used to represent one inch of the image when scanning. Changing the dpi changes the size of the scanned image.

The three switch positions give dpi settings as follows: L means 200dpi, M means 300dpi and H means 400dpi. If you scan the same image on the H and L settings, the H scan will be twice as big as the L scan. To see the effect of this, try scanning an image onto different parts of the Page, using the different dpi settings: scan the first part, press any key to Fix the scan, then re-launch the Scan operation, change the dpi setting, move the scan starting line to a different part of the Page, and scan again. When you compare the images, you should find that they are different sizes.

Dither-Patterns & Grey-Scales

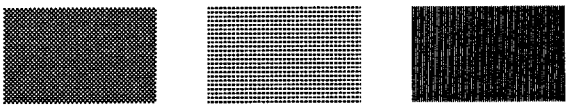
Dither Patterns

The Dither switch has four settings, numbered simply 1 to 4. The switch is used to alter the way in which the scanner treats the 'grey' parts of the image: from the scanner's point of view, 'grey' areas are those parts of the image which are not bright enough to be white, but not dark enough to be black.

With the Dither-switch in position 1, the scanner considers every part of the image to be either black or white: the 'boundary' between the two is set by the Brightness control.

With the Dither switch in positions 2, 3 or 4, the scanner introduces divisions between black and white, creating a "Grey-Scale" of different levels of Brightness. The scanning system detects 16 different levels of 'grey', from nearly black to nearly white. 'Greys' are reproduced as patterns of dots, called "Dither Patterns": the darker the grey-shade, the more dense the dots in the dither-pattern.

Switch positions 2, 3 and 4 all have the same number of grey-scale divisions, but they use different dither-patterns to represent them. Different types of dither-patterns work well on different printers, and you may well find that you need to use different dither-switch settings to produce the best results from different images. Remember that the dither-patterns which looks best on the screen may not give the best image on the final printout. You can vary the dither-switch setting as you scan, and then re-start the scan when you have selected the best setting.

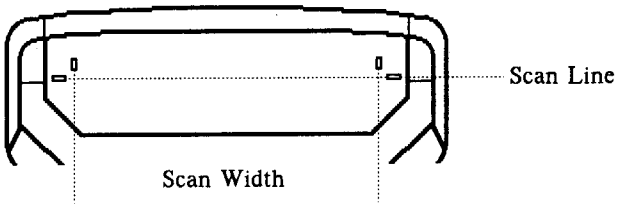


Examples of Dither-Patterns (magnified)

Scan Position Markers

The Scan Position Markers

In the translucent window in the top of the scanning head, you should be able to see two pairs of position indicators. These show the limits of the scan, and the scanning position: they will help you to position the scanning head accurately.



Scanning Different Images

Different Types of Image

The dither-switch is used to select scanning methods for two very different types of image. Position 1 should be used for line-drawings or text, where there is only black and white. Images which contain shades of grey, such as photographs, should be scanned on settings 2, 3 or 4: trial and error is the only way to show which setting works best on your printer for that particular image. Even colour photographs can produce excellent results, provided that the Brightness is set carefully: see below.

Creating a Smooth Surface

Scanning Surface

If the surface on which the image is printed is uneven or slippery, or just too small for the scanning head to roll over it smoothly, it can sometimes be useful to place a sheet of clear plastic or acetate over the image before scanning. You can also use the type of A4 document wallet which has a transparent cover.

Changing the DPI Setting

Brightness & DPI

If you change the dpi setting, the apparent Brightness of the image also changes. Always re-adjust the Brightness control on the scanning head after changing the dpi.

The Scanning Height

Scanning Height

The height at which the scan head rolls above the paper has a powerful effect on the image brightness. This means that you must be careful not to press downwards on the head as you scan, and that if you are scanning from a book, you must not let the rollers fall off the edge of the book while scanning.

Lighting

Lighting

Because the scanner works by shining its own light on the image and measuring the brightness of the reflection, you must make sure that there are no bright lights shining on the image or on the top of the scanning head. Changes in the ambient lighting level can also affect the scanner.

Scanning Wide Images

Scanning Wide Images

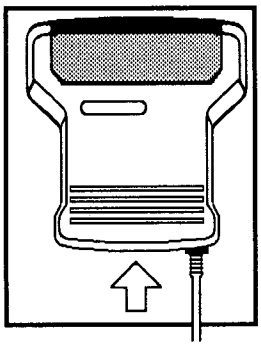
If you need to scan an image which is wider than 4" with the hand-held scanning head, try scanning in two parallel strips and then joining them together: you will need to define a wide Page format if you want to produce parallel scans at 300 or 400dpi. Scanning two parallel images is quite difficult: try using a ruler to guide the scanning

head, or using the Scan Position Indicators in the scanning head itself to follow any vertical lines on the page. When joining the images together, you will find that you can achieve the best results using the Block operation in the Graphics section to move small parts of the image, rather than trying to join the two images in one operation in the Layout or Typeset sections.

Scanning Close to the Edge

Scanning close to the edge...

If you need to scan close to the bottom edge of, say, a page in a book, you will find that you cannot roll the scanning head smoothly over the image because the back half of the scanner falls off the page.



Try turning the paper around, and "pushing" the scanning head away from you so that it scans backwards. The image will be "reflected" horizontally, as if viewed in a mirror: if the image is small, this can be cured using the Reflect option in the Graphics Section Block operation, but if the image is too large for the Graphics screen, you will need to use the Tweak program.

Appendix 3: WORD-PROCESSORS AND TEXT FILES

Text Files & Word-Processors

MD3's Text Editor can load text files generated by word-processor programs such as LocoScript2 or Protext. Because the character-sets used by all these programs differ slightly, and because the programs use different control codes for text style and formatting control, word-processor files must be "translated" into MD3-compatible characters and control codes as they are loaded.

CP/M & ASCII Characters

Most CP/M programs (such as Protext and Wordstar) use the standard CP/M character set, most of which is also available in MD3. LocoScript2 has a much bigger character set, and not all LocoScript characters can be imported, but wherever there is a close equivalent in MD3, the LocoScript character is converted to it. Files which contain only standard ASCII characters (Nos. 32-127) present no problems, and will always be imported correctly.

Style Codes

As well as converting characters, MD3 can recognise the style and text formatting control codes incorporated in word-processor files: this means that text marked in the word-processor file as Bold, or lines which have been Centred on the page, will still appear Bold or Centred correctly when typeset in MD3. Unfortunately, different word-processor programs use different markers or 'Control Codes' to represent these options, so it is important for MD3 to know when it imports a file which word-processor was used to generate it.

Text File Formats

The four text file formats which MD3 uses are as follows:

MD3 format (saved from MD3's own Text Editor);
LocoScript 2 format;
Protext format;
Wordstar format (also used by **New Word**).

'ASCII Type' Option

When you have selected a text file to be loaded (using **LoadText** in the Editor section), MD3 checks to see if it is a LocoScript 2 file, or a text file saved from MD3 itself: both these types of file can be detected automatically because of special "header" data at the beginning of the file. If the file is not one of these two types, the program then checks the **Text Files** option in the **System Options** section: if no System Options file has been saved, this option defaults to Protext format. Users of Wordstar and NewWord should set this option correctly and save the Options file, so that when they run MD3 again, the program will default to the correct format: see page 4-77 for information about the Options.

It should be stressed again that ordinary ASCII files, or files specifically saved as ASCII files from word-processors, will be loaded automatically, although these files cannot contain any style or formatting codes.

Importing Text

Importing Text from Word-Processor Programs

The MD3 text system can import almost all of its character set from word-processor files. No word-processor has exactly the same character set as MD3, but wherever possible, characters in word-processor files are converted to their closest equivalent in MD3.

Accents

ACCENTS

No word-processor supports all the MD3 accents, but any accented character which is available in your word-processor program will be converted to its nearest MD3 equivalent when it is imported. LocoScript2 does use one or two (very rare) accents, such as the double-grave, which cannot be imported into MD3.

LocoScript1

LOCOSCRIPT1

MD3 cannot recognise LocoScript1 files, and will not import them correctly. However, you can save Loco1 files as ASCII files, and import these into MD3: ASCII files (see previous page) cannot contain any control codes for style or formatting, but ordinary English text will be imported correctly.

LocoScript2

LOCOSCRIPT2

While MD3 will import almost all the characters typed using the standard LocoScript2 keyboard, the special characters which are entered using "Super-Shifts", including the Greek and Cyrillic characters, cannot be imported. The only characters in these sets which have MD3 equivalents are the super-script numbers 1, 2 and 3: if you want to import these from Loco2, create the Loco version using the 'circled' numbers (which are typed in Loco by pressing [Extra]+[1], [Extra]+[2] and [Extra]+[3]), rather than the normal Loco superscripts.

User Groups

User Groups

When Loading a LocoScript file, remember that LocoScript's Groups are the same as MD3's User Numbers. If you have saved a document in group 2 on your LocoScript disc, MD3 will not be able to find this file until you select User Number 2 in the Filing Window: see page 4-2 for more information about Loading files.

"File Not Found"

File-Suffix

File Suffix

All CP/M and LocoScript file-names have eight letters, then a full-stop, and finally three more letters. These last three letters are the File Suffix. When loading a LocoScript file into MD3's Editor, ensure that you type both the file-name and the suffix correctly, otherwise MD3 will not be able to find the file. See also **Groups** above.

Control Codes

Style and Format Control Codes

The complete lists of the control codes which can be incorporated into word-processor text files for use by MD3's Typesetting system are shown below: **Note that some of these codes are not used by the word-processor programs themselves: they only work when the file is typeset in MD3.**

In LocoScript2

Style Codes

BOLD	⊞/⊟ **B**	
DOUBLE	⊞/⊟ **D**	
HIGHLIGHT (REVERSE)	⊞/⊟ **RV**	
ITALIC	⊞/⊟ **I**	
UNDERLINE	⊞/⊟ **UL**	

Formatting Codes

RIGHT-ALIGN	⊞ **RA**	*(One line only)*
CENTRE	⊞ **CE**	*(One line only)*
RIGHT-JUSTIFY	⊞/⊟ **J**	

In Protext

Style Codes

BOLD on/off	**(Alt-X B)**	
DOUBLE on/off	**(Alt-X D)**	
HIGHLIGHT on/off	**(Alt-X H)**	*(Not used by Protext)*
ITALIC on/off	**(Alt-X I)**	
OUTLINE on/off	**(Alt-X O)**	*(Not used by Protext)*
UNDERLINE on/off	**(Alt-X U)**	

Command Lines

CENTRED LINE	**>CE**	
RIGHT-ALIGNED LINE	**>RA**	*(Not used by Protext)*
RIGHT JUSTIFY on/off	**>RJ**	

In Wordstar

Style Codes

BOLD on/off	**(Alt-P B)**	
DOUBLE on/off	**(Alt-P D)**	
HIGHLIGHT on/off	**(Alt-P W)**	*(User Patch 2)*
ITALIC on/off	**(Alt-P Q)**	*(User Patch 1)*
OUTLINE on/off	**(Alt-P E)**	*(User Patch 3)*
UNDERLINE on/off	**(Alt-P S)**	

Appendix 4: KEYBOARDS AND NATIONALITIES

MicroDesign3 supports nine different PCW keyboard languages, all of which have slightly different keyboard layouts. The keyboard language is selected during the MD3MAKE process. The different language versions of the PCW keyboard have different key-layouts: if you are not sure which language option to select in MD3MAKE, compare the letters printed on your key-tops with the diagrams in this appendix.

As long as the correct language is selected during installation, the letters printed on the key-tops (the 'Normal' and 'Shift' keys) work properly in all languages. There are three additional keyboard states, which generate different characters if you hold down the [Alt], [Extra] or [Shift]+[Alt] keys. Wherever possible, these have been designed to use the same keys as LocoScript.

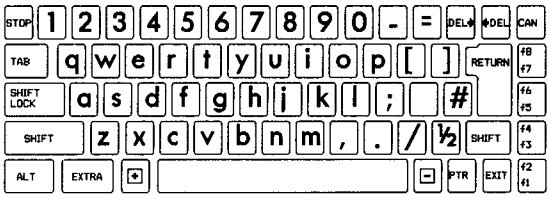
The following pages show a complete list of all the different keyboards, and all the characters which can be typed in MD3's Text Editor, or in the Write operation. Note that the Symbol fonts produce different characters: see appendix 5.

The keyboard languages appear in the following order:

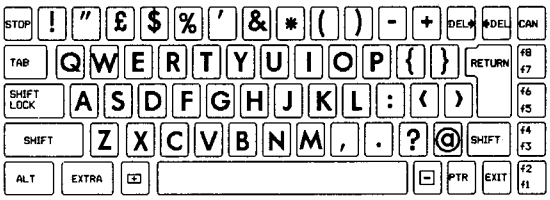
English
German
French
Italian
Portuguese
Spanish
Danish
Swedish
Norwegian

English

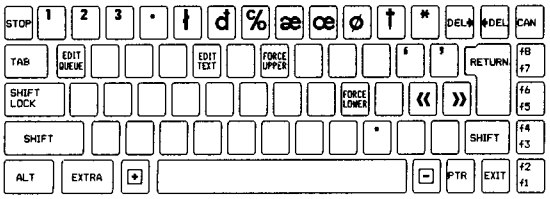
ENGLISH



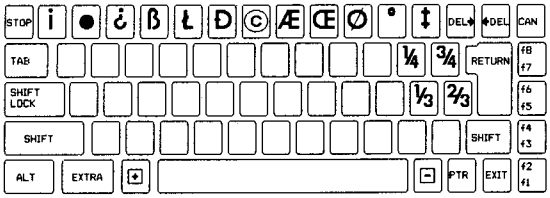
Normal



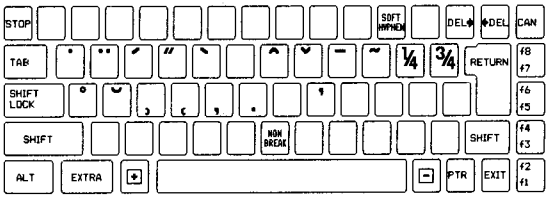
Shift



ALT



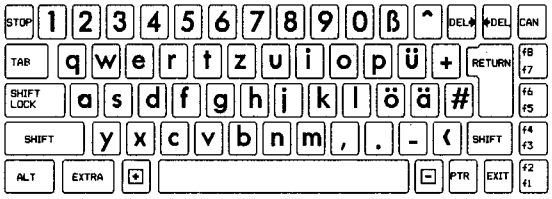
ALT + Shift



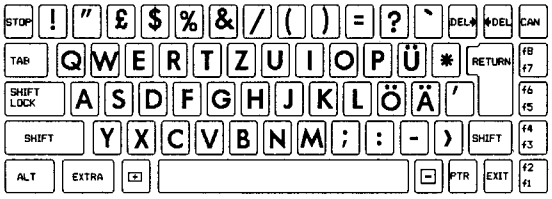
EXTRA

GERMAN

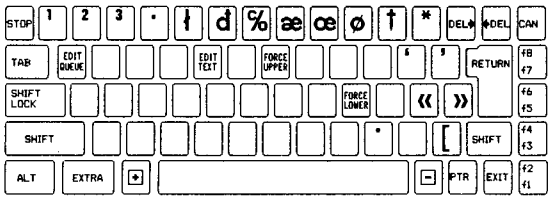
German



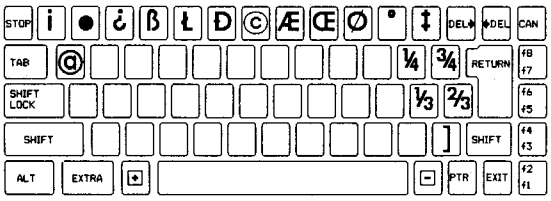
Normal



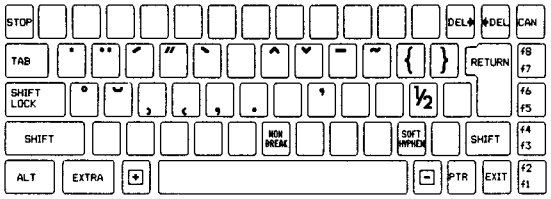
Shift



ALT



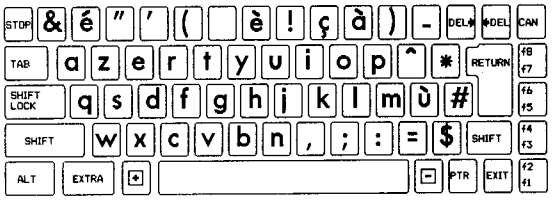
ALT + Shift



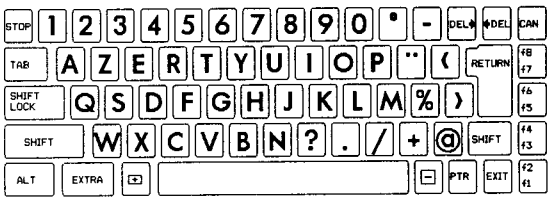
EXTRA

French

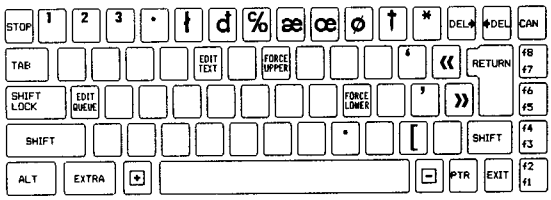
FRENCH



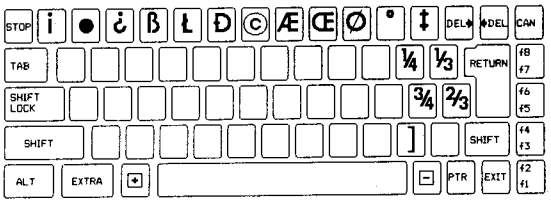
Normal



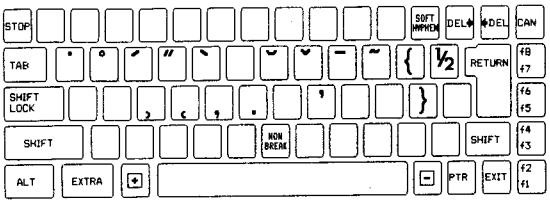
Shift



ALT



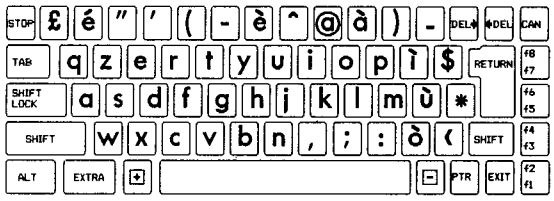
ALT + Shift



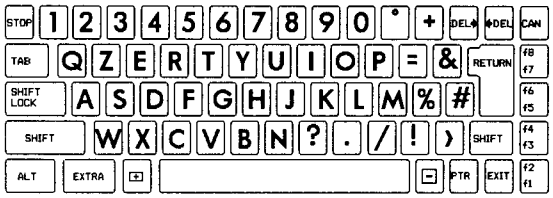
EXTRA

ITALIAN

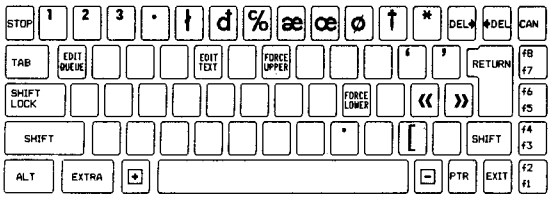
Italian



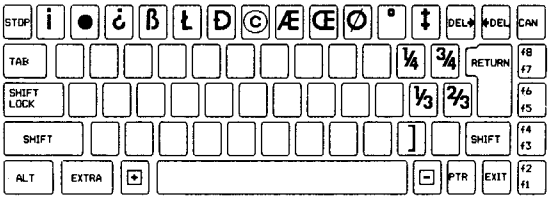
Normal



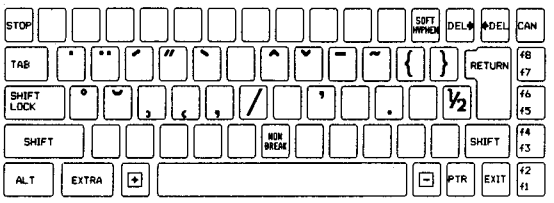
Shift



ALT



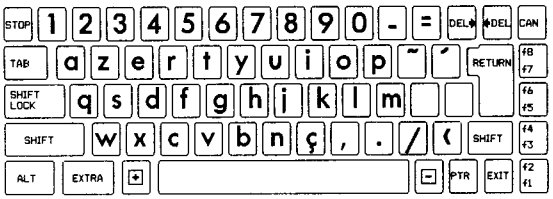
ALT + Shift



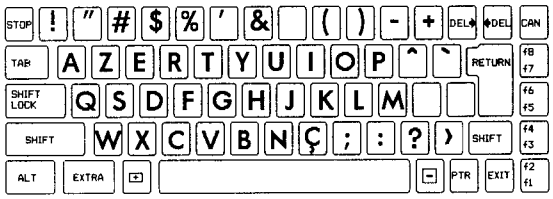
EXTRA

Portuguese

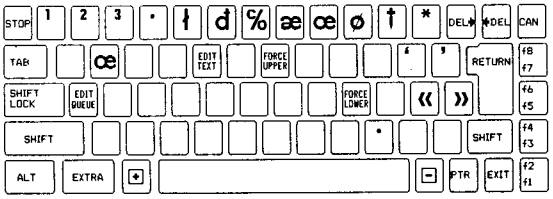
PORTUGUESE



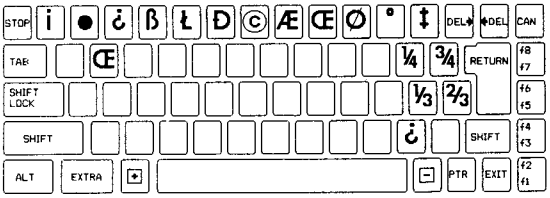
Normal



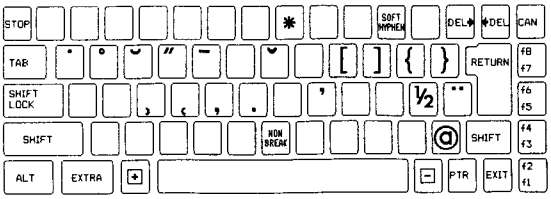
Shift



ALT



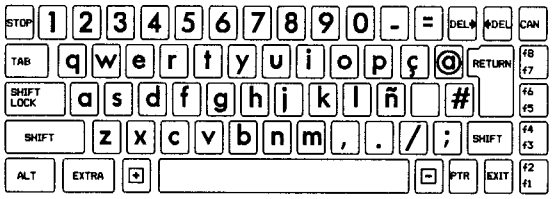
ALT + Shift



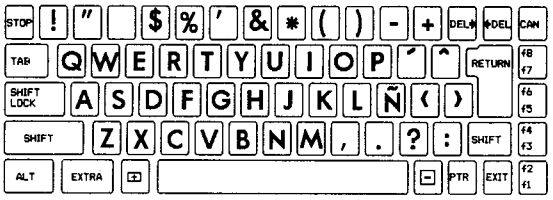
EXTRA

SPANISH

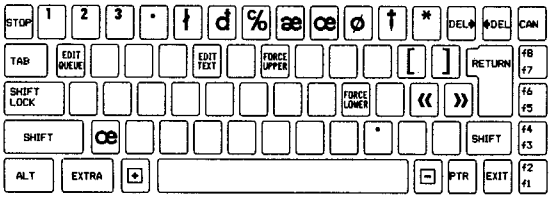
Spanish



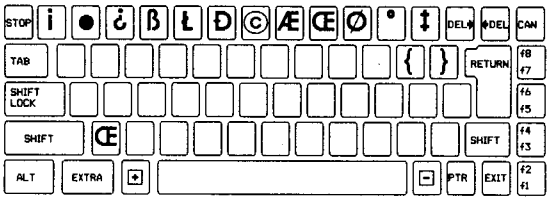
Normal



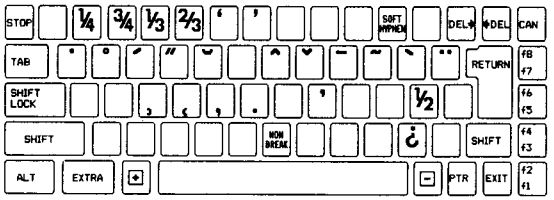
Shift



ALT



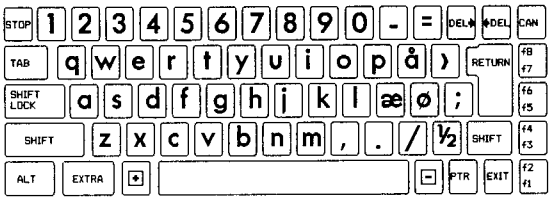
ALT + Shift



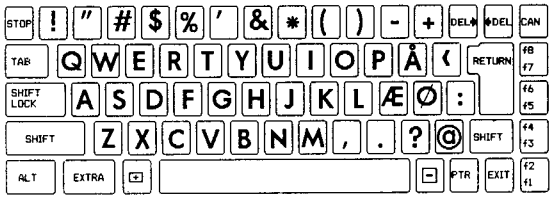
EXTRA

Danish

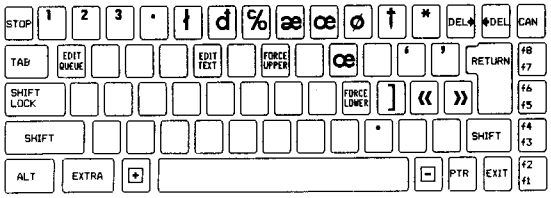
DANISH



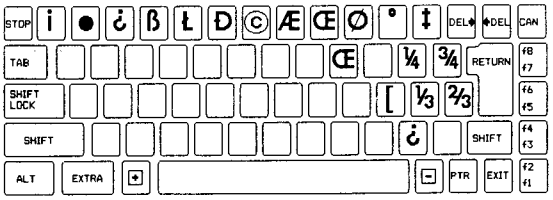
Normal



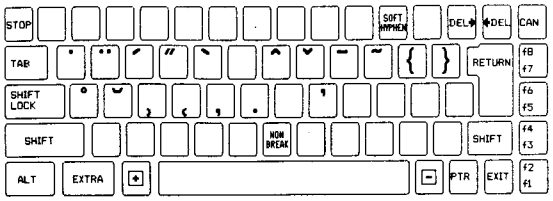
Shift



ALT



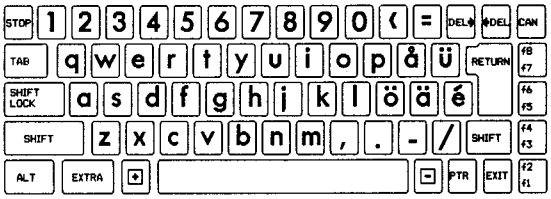
ALT + Shift



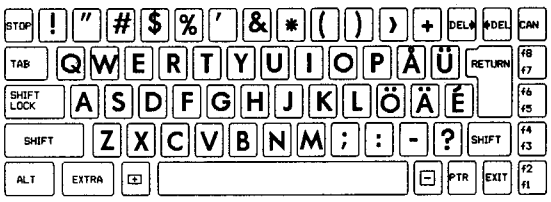
EXTRA

SWEDISH

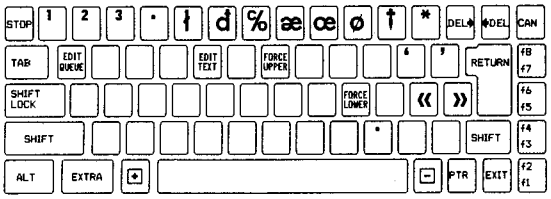
Swedish



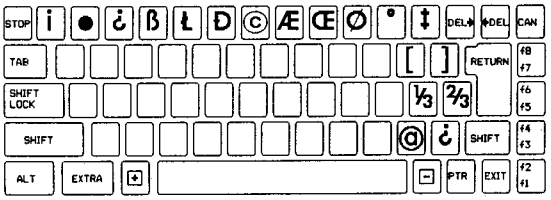
Normal



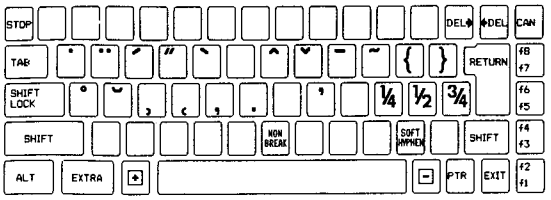
Shift



ALT



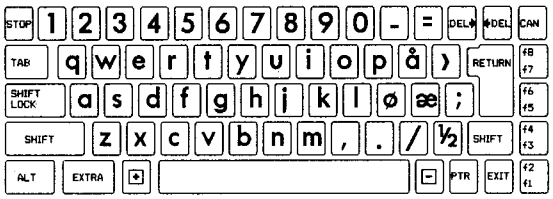
ALT + Shift



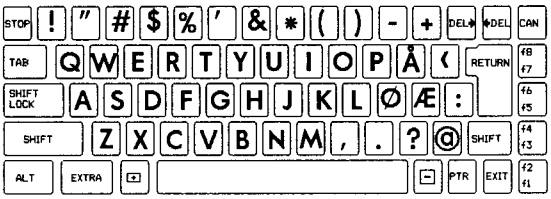
EXTRA

Norwegian

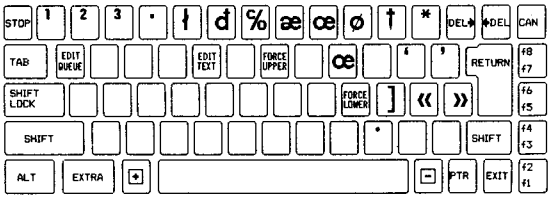
NORWEGIAN



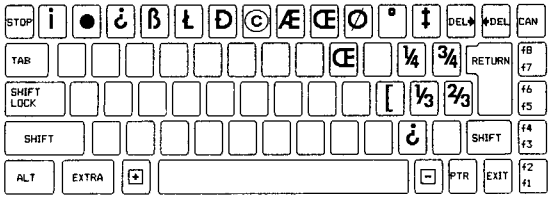
Normal



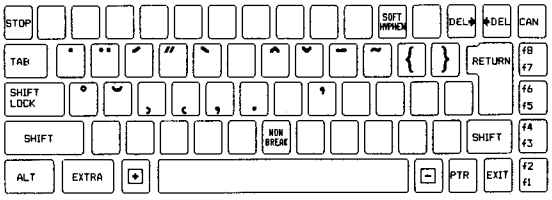
Shift



ALT



ALT + Shift



EXTRA

Appendix 5: FONTS, SHADES AND TYPOGRAPHY

This appendix begins with a catalogue of the Font and Shade files supplied in the MD3 Library, then continues with a some pages of typography tips and examples.

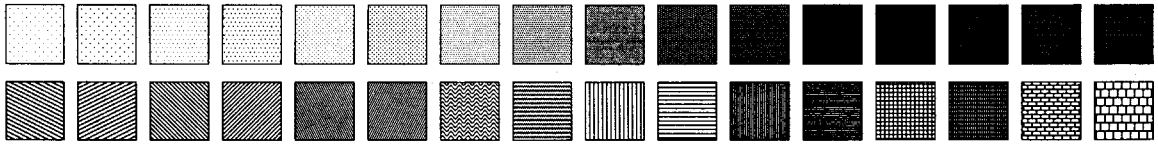
THE SHADES FILES

The SHADES

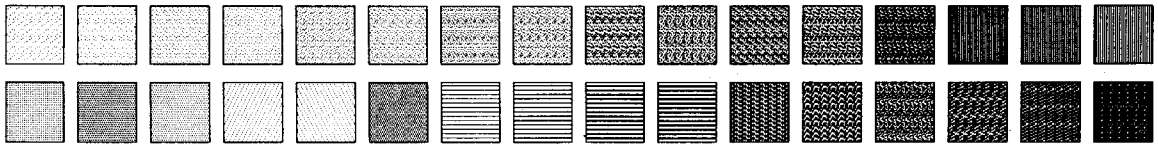
Shades are sets of patterns which are used in the Graphics section for Painting, Flooding, and Filling Shapes. They can be selected using the Extra Keys, and an illustration showing the default set of Shades is given on page 4-65.

The MD3 library also includes two extra sets of shades, which can be loaded using the **LoadSHAD** operation in the Graphics sections. The three sets, including the BOOT set which is loaded automatically when MD3 is run, are shown below. To see the Shades on-screen, press the [Relay] key while in the Graphics section.

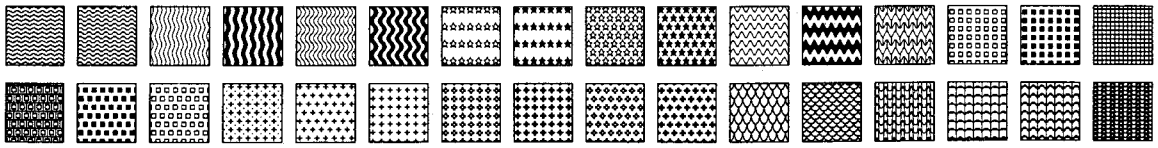
BOOT.MDS



TEXTURES.MDS



SHAPES.MDS



The appearance of the different Shades varies significantly when they are printed on different printers. To find out what they look like when printed on your printer, try printing your own 'catalogue' of all the different sets of Shades.

FONTS

THE FONT FILES

Font Sizes

The sizes of the font illustrations in this section will not be the same as the fonts which are printed out on your MD3 Pages. This manual was printed on a laser printer (300dpi), then reduced to 84% for printing.

Fonts and Memory

The following fonts are all supplied in the MD3 library. Remember, though, that if your PCW has less than 1Mb of memory, you may not be able to load the larger fonts: see page 4-14 for an explanation of how this works.

FRANK Family

FRANK12L
FRANK13B
FRANK15
FRANK17C
FRANK17L
FRANK19L
FRANK23

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[]{}<>;:#,./?½@
¹²³·ŧđ℅æœøţ*«»“ı■¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëěåẽėēĕťǫęçę

Frank is a variant of the standard Helvetic typeface. Three different styles are included: the "L" fonts are Light, the "B" fonts are Bold, and the "C" font is Condensed. Condensed fonts are slightly compressed horizontally in order to fit more words on a line, so they are especially suitable for typesetting in narrow columns.

PAUL Family

PAUL17L
PAUL18
PAUL23
PAUL35
PAUL45
PAUL66

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[]{}<>;:#,./?½@
¹²³·ŧđ℅æœøţ*«»“ı●¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëěåẽėēĕťǫęçę

Paul is a Futura style. It is a simple geometric design, and is very easy to read. PAUL17L is a light version. PAUL66 is incomplete: it has all the alphabetic characters, accents and numbers, but the only characters included from the [Alt] and [Alt]+[Shift] keyboards are the open and close quotes ‘ and ’, and the Decimal Point·.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[ ]{}◇;:#,./?½@
¹²³·łđ℅œæøø†⁺«»“”¡●¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëěêêèēěéťǫęçę

Stan is a version of Times Roman. It can be used in conjunction with the italic fonts from John (see below).

STAN Family

STAN13
STAN16
STAN22
STAN32
STAN44
STAN56

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[ ]{}◇;:#,./?½@
¹²³·łđ℅œæøø†*«»“”¡●¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëěêêèēěéťǫęçę

JOHN Family

JOHN14
JOHN16
JOHN20
JOHN32
JOHN46

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&()[ ]{}◇;:#,./?½@*
¹²³·łđ℅œæøø†«»“”¡●¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔*
éèêëěêêèēěéťǫęçę

John14I
John16I
John20I
John32I

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890-=-&!"£$%'&⊕0[]{}◀▶;:#,./?½Ⓐ
¹²³·ŁĐ℅ÆŒØ©=«»“”¡●¿ssŁĐ©ÆŒØº*™¶§®
ÉÈÊËĚÉÊÈĒĚÉŤǪĘÇĘ

JOHN Small Caps

JOHN20SC

John is a version of the classic Baskerville typeface, with separate italic fonts which are particularly stylish. JOHN20SC is a special font, with small capitals instead of lower-case characters. The brackets and some of the punctuation matches the small caps, rather than the normal upper-case characters, and there are also one or two special characters included in this font which are not available in the normal MD3 character set.

BOLDEN Family

BOLDEN17
BOLDEN22
BOLDEN33
BOLDEN42
BOLDEN66

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[ ]{}();:#,./?½@
¹²³·¦d%æœø†⁺«»"¡●¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëėèēĕěťọęçę

Bolden is normally known as Cooper Black. It is used for posters and headings, often just in capitals. The 66-pt size is incomplete: the only characters included from the [Alt] and [Alt]+[Shift] keyboards are the open and close quotes ' and ', the Decimal Point ·, the Degrees symbol °, and the † reference marker.

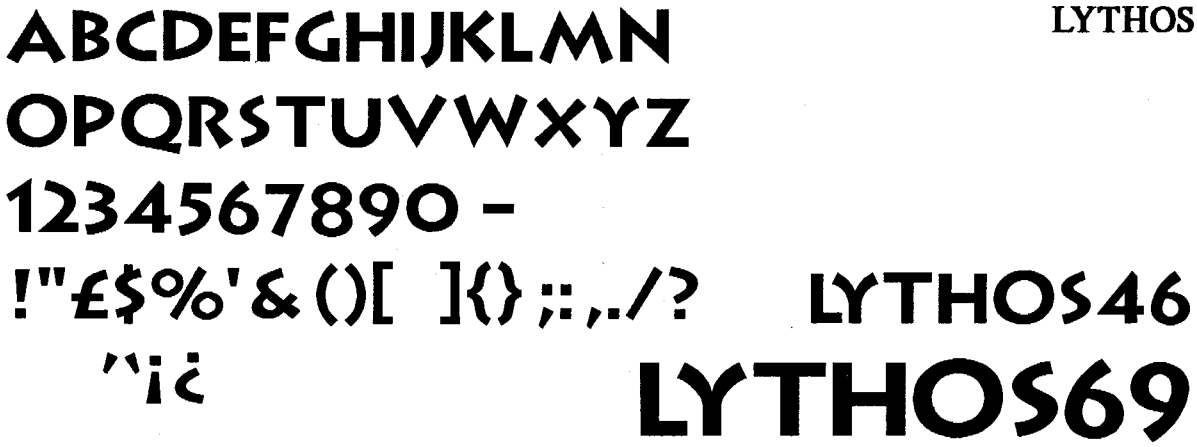
GUARDIAN Family

GRDIAN22
GRDIAN29
GRDIAN44
GRDIAN66

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=-+!"£$%'&*()[ ]{}();:#,./?½@
¹²³·¦d%æœø†⁺«»"¡■¿ßŁĐ©ÆŒØ°‡¼¾⅓⅔
éèêëėèēĕěťọęçę

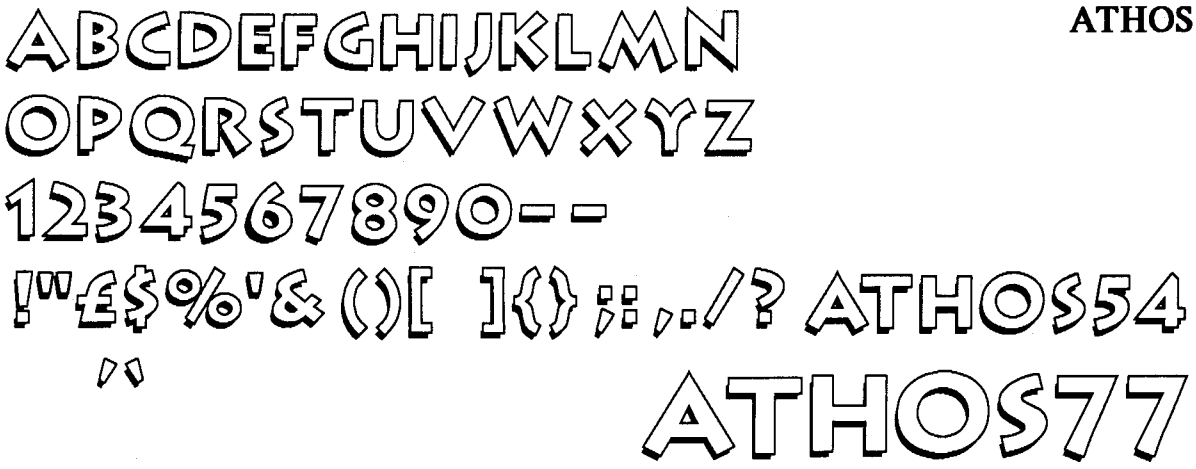
Guardian is a relative of Frank, because it is based on the Helvetic extra-bold (or "black") used by the Guardian newspaper. The 66-pt size is incomplete. It lacks the $, [,], {, }, <, >, @ and / characters from the standard keyboard, and the only characters included from the [Alt] and [Alt]+[Shift] keyboards are the open and close quotes ' and ', the Decimal Point ·, and the Degrees symbol °.

LYTHOS



Lythos is a display font. It has only capital letters and no accents, as shown above. Any character which is not shown in the diagram is not included in the font.

ATHOS



Athos, like Lythos, is a display font with no lower-case characters or accents. The larger size, ATHOS77, has even fewer characters than ATHOS54, but it does include capitals, numbers, and some punctuation.

MONOGRAM

Monogram is a display font, with no accents. MONOGM48, the smaller size, includes all the characters shown in the diagram. The larger size is supplied as two different fonts: MONOGM65 has upper- and lower-case characters but no numbers, and MONGM65# has no lower-case characters, but does have numbers. Both versions include the punctuation shown in the diagram.

'TYP' Family

TYP10P18
TYP12P15
TYP13P12
TYP17P10
TYP19P8

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890-=—+!"£$%'&★()[]{}<>;:#,./?½@
¹²³.łđ‰æœø†‡«»‘’¡●¿ßŁĐ©ÆŒØ°♯¼¾⅓⅔
éèêëěéẽéēěéťǫęçę

TYP fonts are typewriter-style non-proportional or fixed pitch designs. They are really intended for typesetting word-processor files in which tabulation has been done using spaces. When used for body-text, they do not look as good as the proportional MD3 fonts. The last figure in the font name is the Pitch, or number of characters per inch, when the font is used with a 300dpi printer, so that TYP13P12 prints out at 12 characters-per-inch on a Deskjet or laser printer. If you want to print at the same size using a 360dpi printer such as a bubblejet or 24-pin, use a TYP font which is one size bigger, in this case TYP17P10 for 12cpi. With a 9-pin printer, use a font which is one size smaller than the named size, in this case TYP12P15 for 12cpi.

SYMBOL FONTS

SYMBOLS

As well as the normal characters, the library also includes three Symbol fonts. These fonts do not have letters, but instead have a wide variety of symbols as shown in the diagram. The symbols can be 'typed' by loading a symbol font, and pressing the appropriate key(s) to type the letters listed beside them in the table. The Symbol font comes in three sizes, suitable for use with (approximately) 45-point, 33-point and 22-point fonts.

Typography Tips & Examples

TYPOGRAPHY TIPS & EXAMPLES

The following example pages are not intended to be Inspiring Works of Design: far from it. They just show the appearance of some of the MD3 font families when they are typeset onto Pages, and some of the ways in which different fonts can be combined.

The text on the pages is a (rather disorganised) set of notes and tips about different typesetting effects and styles. It contains some very useful information, and is well worth reading!

[**Editor's Note:** *The text used in the following pages to illustrate different layout styles includes various comments and tips about typography. While all of the statements about using MD3 are guaranteed to be accurate and (hopefully) useful, other general comments about typography may not be universally accepted by all printers and publishers. Issues of style and layout are, at the end of the day, a matter of personal taste, and this appendix is NOT trying to tell you what you should like. It merely explains and illustrates a few useful ideas: please DON'T ring us up just to tell us that you disagree with it! We are also aware that the manual itself does not always follow all of the advice in this appendix, but this is quite deliberate. We would not want to bore you by offering you only one opinion!*]

THE "TYP" FONTS

Typewriters can only move the the paper a standard distance after each letter, no matter whether the letter was a comma or a capital M, so all typed characters must be the same width. Real printing doesn't have this problem, because the letters can be made of different widths, to suit each character. This is called "Proportional Spacing", and it is the system used for most of MD3's fonts. However, for those who particularly need to print fixed-pitch typewriter-style text, MD3 also has five fonts which use a non-proportional design: these are the fonts whose names begin with "TYP", and they resemble the standard "Courier" typeface used on almost all computer printers. All MD3 font sizes are shown by the number in the font-name, but the names of the TYP fonts contain two numbers, separated by the letter P. The first number is an MD3 Point size, like those used on the other fonts. The second number, is the Pitch, or number of horizontal Characters-per-Inch, if the font is used on a 300dpi Page. For instance, the font called TYP13P12 is a thirteen-point font which prints out at 12 characters-per-inch ("cpi") on a Deskjet or Laser printer. If you are using a 24-pin or bubblejet printer, the fonts are smaller, so you will need to use TYP17P10 for 12cpi, or TYP19P8 for 10cpi. If you are using a 9-pin printer, the fonts are bigger, so use TYP12P15 for 12cpi, or TYP13P12 for 10cpi. It's not really a good idea to use TYP fonts unless you really need to imitate a typewriter. They are harder to read than proportional fonts, and they certainly take up much more space!

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There you have it: the same text, the same letter height (point size), and the same column width. The columns look different because the proportional font fits manages to fit more words on a line, and there is less empty space. John and Paul will take up a little more space than a comparable size of Stan, but Frank fits even more words into the same space.

This page is not an example of a layout, but an explanation of the **TYP** fonts. It also illustrates the difference in space required for proportional and non-proportional typesetting.

Headline: STAN44
Sub-Head: FRANK19L (Bold)
Body: FRANK15

Three-column layouts normally use a Roman typeface, but Frank is quite useful for fitting a lot of information in a small space. Remember to avoid using Half-Returns in a multi-column layout like this: see ✱ in the right-hand column.

This page includes some VERY USEFUL information about Kerning and hyphens!

'Quotes' & Dashes—

Kerning Tricks for Clever Users

When you use 'Find-Exch', be careful to anticipate **all** the results of what you do. For instance, if you decide to change 'and' to '&' wherever it occurs, you should put a space before and after both the found and replaced words. If you don't, words like bandstand will finish up as b&st&, not quite as under-st&able as it could be!

'DON'TS'

If you are used to typing, you may have acquired some bad habits. Avoid using letters l&O instead of figures 1&0, because in many fonts they are quite different. Do not use two space characters between sentences, or the line-wrap might not work properly. Try to remember to use proper apostrophies and quotes (' ' " ") instead of feet and inches (' ") and do not space out indented paragraphs using the space-bar: using spaces for formatting is almost **always** a bad idea in MD3. Use Tabs, Indents and the Ruler-Line instead. MD3 seems not to allow the typing of double quotes directly, but two single quotes will do the trick, and double quotes in other imported documents will be translated into a pair of singles (which is in any case what 'proper' printers have to do). It's usually better to use single quotes consistently, with doubles only for quotes within quotes. If you use parentheses ( ) and brackets [ ] a lot, use an established set of rules, such as ( ) for the author's comments etc, and [ ] for editor's notes and additions needed to make sense of an edited quote, such as—

> *Mr Brown (Green Party) said 'How can she say "Typical of the Greens" when she hasn't read my paper? She has only read his [Mr Jones'] letter.'*

DASHES

Dashes are more versatile than you might imagine, if you use hyphen characters to create them: MD3's 'Kerning' makes hyphen characters overlap each other, so that a sequence of hyphens becomes a continuous line, called a 'Printer's Dash'. Dashes can be used as follows:

Single hyphen - to divide words which might look odd or confusing (co-operate, remark or re-mark), for some prefixes (pre-Raphælite) and when a long word is carried over to the next line. (Typists should remember that line breaks on the Editor screen do not usually correspond with those in Typeset text.)

'n' dash – [use two hyphens with kerning on] used after a colon etc to say 'as follows'(:–)

'm' dash — [use four hyphens & kerning] is used in quotations—and more casual writing—instead of parentheses, to represent faltering speech, and in glossaries to avoid repeating the headword.

'Two-m' dash —— [eight hyphens & kerning], used in place of an offensive word (and much less obtrusive than a row of asterisks) or when a sentence is broken off in mid——.

A further refinement in MD3, particularly useful with tall fonts like Bagdad, is the upper-case hyphen character, which is typeset at a height suitable for numbers and capital letters. This is typed using Shift-hyphen. Use it also two at a time between dates (1066—1189), or as a 'minus' sign in mathematics. You can even make your own arrows using two or three of these high-phens and the < and > symbols —→ ←, as you can see, all the above kerning tricks work here too to create longer or shorter versions. Remember that because these techniques use kerning, they will not work with MicroDesign2 fonts.

When using dashes, remember that to separate two sections of text, traditional printers often use a short line centred on the page. This feature can be achieved within the text of an MD3 document by using a Return, the centre flag [+C] and a row of hyphens, an end-centre flag [–C], and another return. The same idea can be used to set off headwords, with higher dashes if using all caps, as at the head of this section. (Kerning must be on, and of course you still get gaps in TYP or MD2 fonts.)

What is 'Typography'?

Headline:
JOHN46 (Bold)
Body: PAUL18

The term 'Typography' covers an enormous range of options open to users of type, including the choice of particular type 'faces' and sizes used, the layout of the page, and details of the text itself. MD3 allows much more choice than the typewriters we have all struggled with, more even than the word-processors which have almost replaced them. This means more opportunity to get it right, but also, of course, more chance of getting it wrong, too. We will examine the different areas of Typography in turn, but first a general word on style. These remarks apply more to 'body' text, rather than 'display' setting of large letters and headlines, where convention applies less rigorously.

This is difficult to read: there are too many words on each line, and the lines are packed too close together. There are two solutions:

> As in many other spheres, there are a few absolute rules, and lots of optional ones. (For example, you would not think of changing conventions like starting at the top left and working right- and down-wards, or of neglecting the basic rules of grammar.) There are certainly Typographical conventions and established guidelines, based on long experience. There are also one or two things which are just 'accepted' (like not having red wine with fish, or not wearing brown boots at a funeral). The trick is to discover the conventions, find out why they work, and then you will be in a position to deviate safely—when you need to—from the path others have trodden out. In the final analysis, your work behind the scenes should not distract from the intention of the document, which is, quite simply, to be *read*; the aim should be a result which attracts no comment! Frustrating, really!

Making the columns narrower reduces the number of words on each line, increasing legibility;

The more of your design work you do in the Editor section of MD3, the easier it is both to achieve consistent results, and to rearrange things when you need to. Delete something in Layout and it is gone forever, but undo your typeset and you can change page size, font size, spacing, margins, and so on, and leave it to the program to fit it all together again when you re-typeset.

Increasing the gaps between the lines, called the "Line Pitch", makes the same line-length easier to read.

Headlines:
BOLDEN42 (top)
JOHN32I (Bold) (bottom)
Body: PAUL17L

The other example pages are simple layouts in traditional styles.

This is a more "modern" example of page design, using a sans-serif font for the body-text, and ragged margins. It is certainly more interesting, and looks less like everyone else's attempts at DTP!

It is usual with designs of this type to leave more white space on the page, but we have a lot to say in this appendix, and not enough pages!

The comment about combining typefaces (bottom left) is important: on this page, either of the headline faces go well with Paul, but using them both together looks a little odd.

Choice *of* Typeface

This can be a minefield, especially since many designs appear very similar at first sight. Beginners ask why there are so many, while experts seek out every catalogue to find just the effect they need. The choice of fonts in MD3 is more limited, but here are a few pointers:

Avoid using two faces which seem similar (like Stan and John) side by side. Use no more than three type designs on a page. Plain, bold and italic from the same family all count as one face, and you can certainly mix sizes of the same design. If you must change font to suit the context, try to make the two sections different in other ways, too, perhaps by putting a box round one of them. This is how advertisers manage to avoid making a page look over-fussy when every box contains someone else's idea of perfection. It is tempting to use all the fonts you have, a shame to waste them, but you wouldn't wear two pairs of shoes at once however many you owned, would you?

...but do resist the temptation to use lots of different fonts on a page. Three is a sensible maximum, and they should be good companions: not all font combinations work well together.

DON'T BE AFRAID TO EXPERIMENT WITH STYLE AND LAYOUT...

As to which face matches which sort of copy, be advised by what you see around you. Books are almost always set in a roman face, upright, with some stress (thick & thin strokes), and serifs to end the strokes. All these are aids to legibility. Stan is based on the most commonly used design for everyday text, neat, tight, almost neutral in tone: it used for most of this manual. John is more elegant, more stylish, and also takes up quite a lot more space, so it is suitable for text of a relaxed nature, not quite so businesslike.

Sans serif fonts (no little spikes on the corners, as Paul [this one], and Frank) tend to be used for technical text, sometimes even for whole books. In large chunks they can be tiring to read, but they are excellent for shorter sections and captions. For the asymmetric style, Paul has a classical yet up to date look, while Frank is less stylish, more down to earth, designed to pack the text into a small space. Just the thing for the small-print which is not really supposed to be read. Avoid mixing Paul and Frank, but either makes good headings for Stan.

Page Design Probe!

There are limits on the number of words you can safely put on one line. Too few and you get rivers of white, or very ragged edges, both difficult to read. Too many words on each line make it hard to find the next line when reading, so you finish up reading some lines twice and some not at all. Aim for between ten and twelve words per line and you won't be far out. If you do put more words on the line, increase the Line Pitch to compensate. At first it may be tempting to get as much on one page as possible, with narrow margins all round, leaving no space at all. Readers will not bless you for this, as the space around the text helps to frame it, whatever style you use, and (prosaic but true) it gives you somewhere to hold the page without your thumb getting in the way. The top margin should be a bit smaller than the bottom one, and the inner margin of a folded opening less than the outer, except where the binding is restrictive or tight. Leave room for ring binding or file-punching if there is anyone who might treasure your printouts, and want to keep them. With ragged edge setting you can afford to make the margin fairly narrow on the ragged side, as few lines will fill the measure. Centred headlines rarely look right on ragged text, as the program centres on the measure, not on the text. If you want to try this, be prepared to adjust things optically by moving the headline across where needed; the resolution provided by the Typeset and Layout sections is good enough for this.

Multi-Columns

This requires care in the text, as it works best if lines align across all columns. Avoid half line spaces ([Extra]+[Return]), and try to use a line-spacing which is divisible by eight so that you can move text up and down in Layout without columns getting out of phase. Also to be avoided are changes of font which do not have the same line pitch, (or ensure that the Ruled Lines feature is on). The margins are always equal on both sides of each column, so remember if you change the setting to give a different margin width down the page, the outer edges will also move in or out.

Widows & Orphans

Odd isolated lines at the bottom of a column (orphans) or at the top of a column (widows), and hyphens going from one column or page to another, are frowned upon. Orphans are easily sorted in Typeset; as soon as you see one, use Stop to halt the operation, and go back and take the offending line over to the next column. Take out any separating dashes which come at the beginning or end of a column in the same way. Use [Extra]+[Delete] to go back (Undo the Typeset) one line at a time, and [Alt]+[Return] in the Text to force text to the new column or the next page. If this is in the first column, make sure the next one is the same length. If not it can be awkward to correct the odd column lengths. One way is to increase the line-space between paragraphs, another is to put an extra word or two in the text to fill out the line(s), but this can only be done if the text is yours to mess about, and it requires some editorial skill if the results are not to be noticed. Widows can also be corrected by taking out a word or two, but in the previous column, so Undo the Typeset for the whole column, and try to shorten the text a bit. Sometimes a simple (soft) hyphen in a word can be all that is required to avoid an odd word on a new line at the end of a paragraph. There is no word for the opposite of a widow or orphan, but if you use line-spacing to separate paragraphs, look out for blank lines at the top or bottom of a column if the paragraph happens to end there.

New Pages

Start a new page (a right page in a folded book) whenever there is a serious change in the content (such as a book chapter), and if you are setting poetry, try to get every poem complete on as few pages as possible. If you are left with only a few lines isolated on a page, go back and look for a space that can be varied, or a useful slot for an illustration. Keep a scrapbook of line drawings of flowers, feathers, cottages, and similar things for this purpose, or raid your clip art discs. (The proper printing term for such an illustration is a cliché, and printers had them first.)

'Headers'

Headlines (or headers as word-processors know them) can be used wherever a page might be taken in isolation, as well as in book layout. No one will notice the heading 'Burton Ale Tasters' on every page of your club newsletter until an odd page appears on a notice board somewhere, when it can be very useful.

Changing Font

It is important to be careful exactly where you put the Change-Font symbols when using different letter sizes within a document. A heading which is set as

[↵][+2]New Pages[+1][↵]

might be spaced out quite differently from

[+2][↵]Multi-Column[↵][+1]

because the Return always moves down by the Line Pitch of the current font: an illustration of this is given on page 4-50.

Headline: GRDIAN66

Sub-Head: PAUL23

Body: STAN13

This is a more usual style for a newspaper, with Roman body-text, sans-serif sub-headlines, and big black headlines. Sub-heads may also be Bold, and / or typeset in a large Roman font.

Title: STAN56 Bold)
Headlines:
STAN32 (Bold)
Body: STAN13

Someone once said that page design is 10% originality and 90% plagiarism. The design of this page is not even 10% original! The Times newspaper, on which it is based, normally uses an 8-column layout, but in all other respects, this design is authentic. Note especially the sub-heads below the headlines: these use initial letters from a larger font, and caps from a smaller one, giving the appearance of a small-caps font without going to all the trouble of designing one.

THE DATES

No. 1 SUNDAY APRIL 1 1999 250 ECUS

Paragraphs and Lists

FROM OUR TYPOGRAPHICAL CORRESPONDENT

Paragraph layout is largely a matter of fashion, but here is a suggestion for a basic style to build on. In the tradition of newspapers like The Times, text is laid out in justified columns, with a Tab used to start each new paragraph (except after a linespace, or an inset section).

MD3 allows the use of indents on both sides of a paragraph, multiple columns, and for text to be aligned to the left or right, or centred, automatically. Use these facilities in your Editor text, and the layout will sort itself out even if you modify details like the column width or the font size halfway through the task. Conventional typing lacks these facilities, relying instead on fixed spacing for all characters: this requires 'M' and 'i' to be the same width, a styling give-away MD3 helps you to avoid. If you have a document which uses spaces already prepared in a word-processor and no time to rearrange the alignment, use one of the fonts supplied (prefixed TYP) which are designed around fixed spacing in imitation of typewriters. Remember, though, that TYP fonts are not kerned, so you cannot make double-quotes by kerning pairs of single quotes as described earlier; use single quotes wherever possible with these fonts.

LISTS are index-numbered in lower-case roman figures followed by a full-stop (eg i. ii. etc), or by lower case letters in parentheses (eg (a) (b) etc). Indexing involves arabic numbers, sometimes in a sort of decimal system in which sub-paragraphs are numbered as decimals of the main text (eg 2, 2·1, 2·1·1, 2·1·2, 2·2, etc). These numbers can be in a narrow column of their own, perhaps with each subdivision tabbed across in succession to indicate the hierarchy clearly. The first tab must leave room in the first column for the longest decimal in use, the rest can be set to 3 or 4 to give a square space. Bullets (•, [Alt]-[Shift]-[2]) are sometimes used to begin lines in this style but as they were not available in the distant past, they tend not to be used in the traditional centred style.

Forms

Many users use MD3 to make up forms, and in Edit you can make life a bit easier when positioning the response boxes. Use brackets spaced out [ ] to define your box (use a large font), and use [+R] or a Tab to line them all up. You may want to join up the tops and bottoms of the boxes later, but this method should make certain that each box aligns exactly, vertically and with its text, however many times you undo and re-typeset.

Numbers

As a rule, numbers below 100 in text are set in letters, with large numbers in figures. But of course, there are **thousands** of exceptions: the important thing is to be consistent.

NEXT WEEK

Next week, how the royal family began producing their own in-palace newsletter with MicroDesign3.

Typefaces have Personalities!

BY OUR ONLY OTHER CORRESPONDENT

TYPEFACES have a personality, and to use them properly you must get to know them. In keeping with his ancestry, John is choosy about his company. There was no such thing as a 'Display' face in 1757, when Baskerville first appeared, so using John with a poster font like Athos, or with a lot of symbols, might look inappropriate. Frank is very prosaic design, ideal for labelling and small print, but less suitable for a wedding invitation. For presentation work, Stan very rarely looks wrong, but John can look better. Paul looks stylish if used with a modern page-layout, but is also a typical "School Exercise Book" font. Newspapers usually use a Stan-type font, but many magazines (especially those with an eye for style) use a sans-serif design. If you are creating a formal page, avoid the poster fonts (Athos, Lythos, Monogram, Bolden), but don't be afraid to contrast light and heavy type. If you are designing a poster, be more adventurous: avoid Justified columns, and leave plenty of white space.

If you need more variety, contact Creative Technology for details of the MD3 Extra Fonts Library. All the MD2 fonts will import straight into MD3, but without all the new symbols or accents, and without the kerning that can make an MD3 page look so even-textured. If you need a particular font which is not in the library, we may even be able to design it for you!

Always remember that it is the work of a few moments to change fonts and typeset a page to see the effect, as long as the text contains all the setting instructions. When you find a combination of features you really like, save it as a Template for next time.

Initial Letters

INITIAL letters are often dropped capitals, with the rest of the first word in caps, followed by a word or the rest of the line in small-caps. This style works best with a serif font, and the MD3 typeface John is provided with a small-caps version to assist with this; alternatively a smaller font from the same family as the rest of the text may serve. Headlines and titles are centred, or aligned left, and boxes and borders are used to pretty-up display work.

Importing Text

YOU should have no problem importing text from *Locoscript* or *Protext*, although neither allows you to use all the MD3 codes (for font changes, for instance). MD2 textfiles can also be imported, but there may be a problem with double quotes " ", which will be imported as *guillemets* (French quotes « »). If you use MD2 text files, look out for these, and use *Find-and-Exchange* to correct them.

Capitals

CAPITAL letters are normally used to honour the great and the good, for titles, and to distinguish a special use of a word from its ordinary meaning. No two style guides agree on detail, though! Remember that [Alt]+[U] will change a character to upper-case (*caps*) and [Alt]+[L] changes it to lower-case, both in the Editor and in the Typeset F1 Window.

Punctuation

PUNCTUATION follows fashion, like many other details. Currently 'Open' punctuation is in vogue, with as few stops and commas as possible. In older documents there were stops after initials & abbreviations (*e.g. 46 B.C., etc.,*) which can look fussy. There are strict rules in the SI metric system laying down that stops are not to be used after dimensions (3m long, 45Nm torque), as well as the use of capitals and other symbols, so if you are typesetting technical text, be sure that the author is clear about what is required. (1mV is hardly detectable, 1MV is a serious business.)

Reference Marks

THESE come in two styles: *Numerical* ^{123} (use ALT and 123) and *Symbolic* $^{*}\dagger\ddagger\|$ (use Alt=, Alt-hyphen, ShiftAlt=, and a pair of brackets). Symbols are preferred in mathematical work to avoid confusion with powers, otherwise you take your pick. (If you insist on needing more than three numbers, use ^{3} for all of them, and replace each one after typesetting is complete by *Writing* ordinary figures from a smaller font (at 1:1 view-scale). An extra space instead will not necessarily work, because the program ignores a space after any word that happens to fall at the end of a line.)

Ellipsis

ELLIPSIS (...) is used to indicate that a part of a quotation has been omitted, to show a pause in dialogue, or as an indication that you could say more but discretion forbids (know what I mean...) Normally three full stops are used, with no spaces before or after. Kerning will force the stops a sensible distance apart.

Headlines: JOHN20SC

Sub-Heads: JOHN20I

Body: JOHN16 & JOHN16I

This page illustrates the classic Baskerville typeface called John. John has special italic versions which are used as separate fonts, so that instead of switching into Italics, you should switch to a different font number.

The JOHN20SC font is so-called because it has small-caps instead of the normal lower-case letters. The lines above and below each headline are the "=" and "+" characters. In JOHN20SC, these characters have changed to asymmetric lines = and =, and when these characters are repeated, they are kerned together to make continuous lines.

CODA...

Having illustrated a number of different styles and described even more, it must be said that there are many occasions when you might like to use a bit of each. No reason why not, but only your eye for style can tell what works, and this eye can only be developed by practice, looking not just at your own work, but also at what works in books, magazines, adverts, even on breakfast cereal packets. When you begin to notice what doesn't work, you are making progress; when you can say why it doesn't work you are really getting somewhere. Be consistent and simple and you won't go far wrong.

...AND A FINAL WORD OF WARNING

Talking of breakfast cereal packets, we must point out that excessive study of typeface designs and typography can lead to a condition called 'Typosis'. Typosis sufferers become unable to actually understand anything which is printed, because their minds are completely distracted by the shapes of the letters, the layout of the page, the kerning deficiences in the text, etc etc. You may catch yourself staring at the words on the aforementioned cereal packet for several minutes, then realise that you haven't read any of it: you have been looking at the particularly nice font the packet designers have chosen, or the subtle variations of type-size in the list of ingredients. You may even begin to find street name-plates fascinating, or stare for hours at a single word on a road-sign. These are all sure signs of an imminent typosis attack.

If you are the victim of a typosis attack, there is only one cure. You will have to go searching deep in the back recesses of your cellar or garage, where you should find an ancient and sadly neglected device called a 'pen'. This should be used in conjunction with 'paper' (which normally lives in your printer), to 'write' a letter to an elderly relative or friend. 'Hand-writing', as this is called, is the only way to re-focus your mind on the **content** of a piece of text, which is, after all, the important bit.

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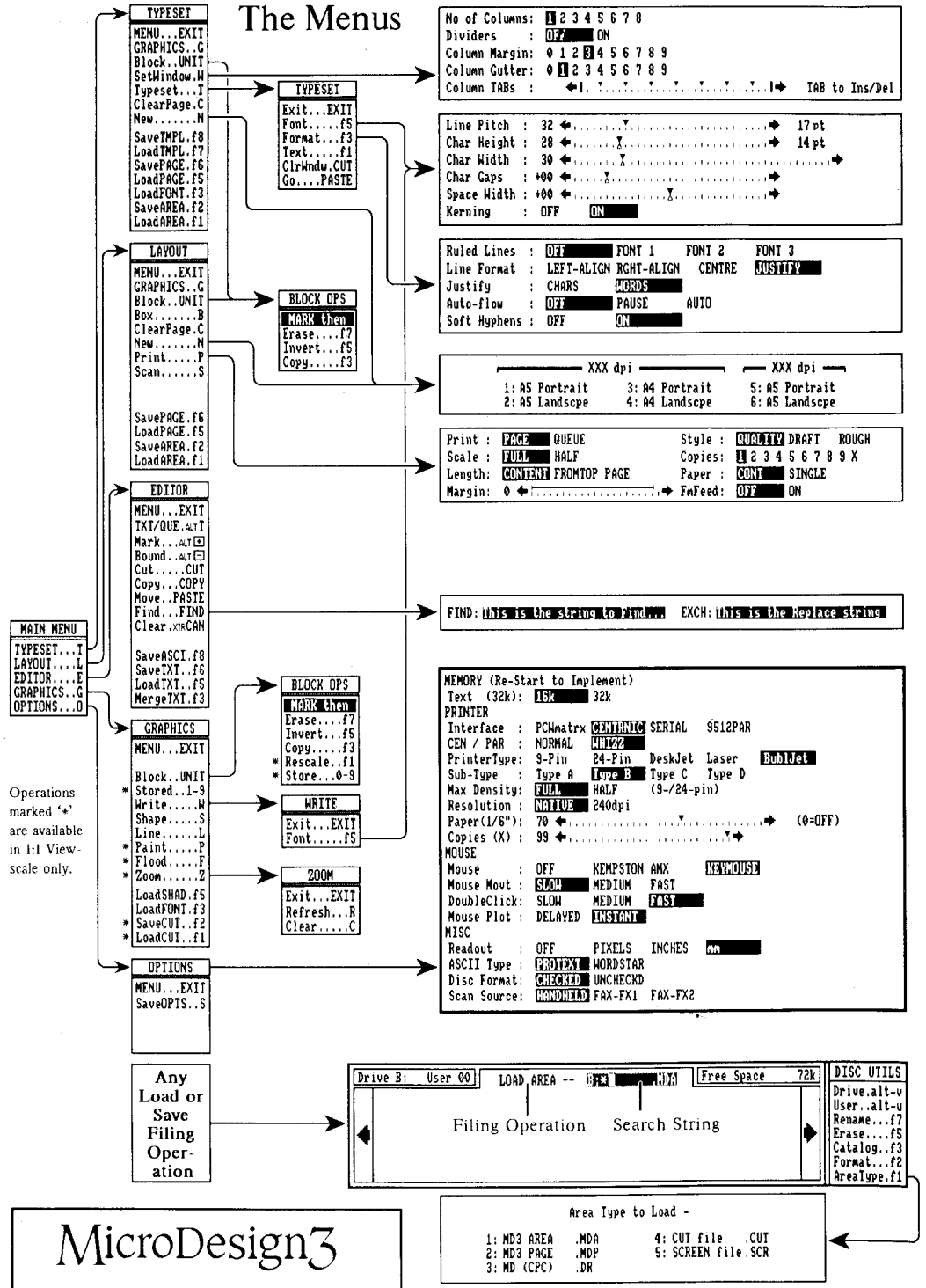

MicroDesign3

QUICK REFERENCE SHEET

Key Functions

Typeset, Layout and Graphics Sections

[Alt]+[↑↓←→] gives fast cursor movement.
[Enter] is used to Fix operations. (p.1-9)
[Word/Char] is the UNDO key. (p.1-9)
[Stop] can usually be used to abort an operation: it is especially useful for stopping Typeset, Print or Flood.
[Alt]+[Stop]: at almost any point in the program, pressing [Alt]+[Stop] cancels the current operation and selects the Main Menu.
[Extra]+[X] changes the Readout status. (p.1-8)
[Extra]+[0] zeros the readout at current cursor position. (p.1-8)
[Doc/Page] centres the cursor on the screen (Graphics), or on the Page (Layout/Typeset).
[Shift]+[Doc/Page] (Graphics) centres the Graphics Window on the Page.
[Relay] alternately displays or hides any operation sub-menu which appears in the Bottom Window.
[Space] switches Control Points in any operation which uses them.
[Extra]+[Space] reduces the Frame size to zero.
[Alt]+[Space] switches the direction of a right-angled Line. (p. 4-72)
[Extra]+⊞ repeats the previous operation.
[Shift]+[Enter] (Graphics section) displays the Scroll Map. (p.4-64)
[Shift]+[↑↓←→] scrolls the Graphics window. (p.4-64)
[Alt]+⊞ and **[Alt]+⊟** (Typeset [F1] window only) place the Typeset Start and End markers in the text. (p.4-28)

Text Editor Section

The usual cursor keys [↑↓←→] are used to move the cursor in the Text Editor, plus the following:

[Alt]+[←]: go to start of line.
[Alt]+[→]: go to end of line.
[Alt]+[↑]: go to top of screen.
[Alt]+[↓]: go to bottom of screen.
[Doc/Page]: scroll down one page.
[Alt]+[Doc/Page]: scroll up one page.
[Shift]+[Doc/Page]: go to end of file.
[Alt]+[Shift]+[Doc/Page]: go to beginning of file.
[Alt]+[←Del] or [Alt]+[Del→]: delete current line.
[Alt]+[L] & [Alt]+[U]: force UPPER & lower case – see (p.4-46).
[Relay]: relay text (p.4-46).
⊞ **and** ⊟: place Control Codes (p.4-52).
[Alt]+⊞ & [Alt]+⊟: Mark and Bound text for Cut, Copy and Move operations (p.4-40).
[Extra]+⊞ & [Extra]+⊟: place the Typeset Start and End markers. These are not visible in the Editor, only in the Typeset operation [F1] text window.

Mouse Buttons

Left button: select operation / drag cursor.
Centre button: scroll Graphics window. (p.4-64)
Right button: switch control points during operation.
Left Double-Click: Fix / Repeat last operation.
Right Double-Click: Abort / Undo current / last operation.

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