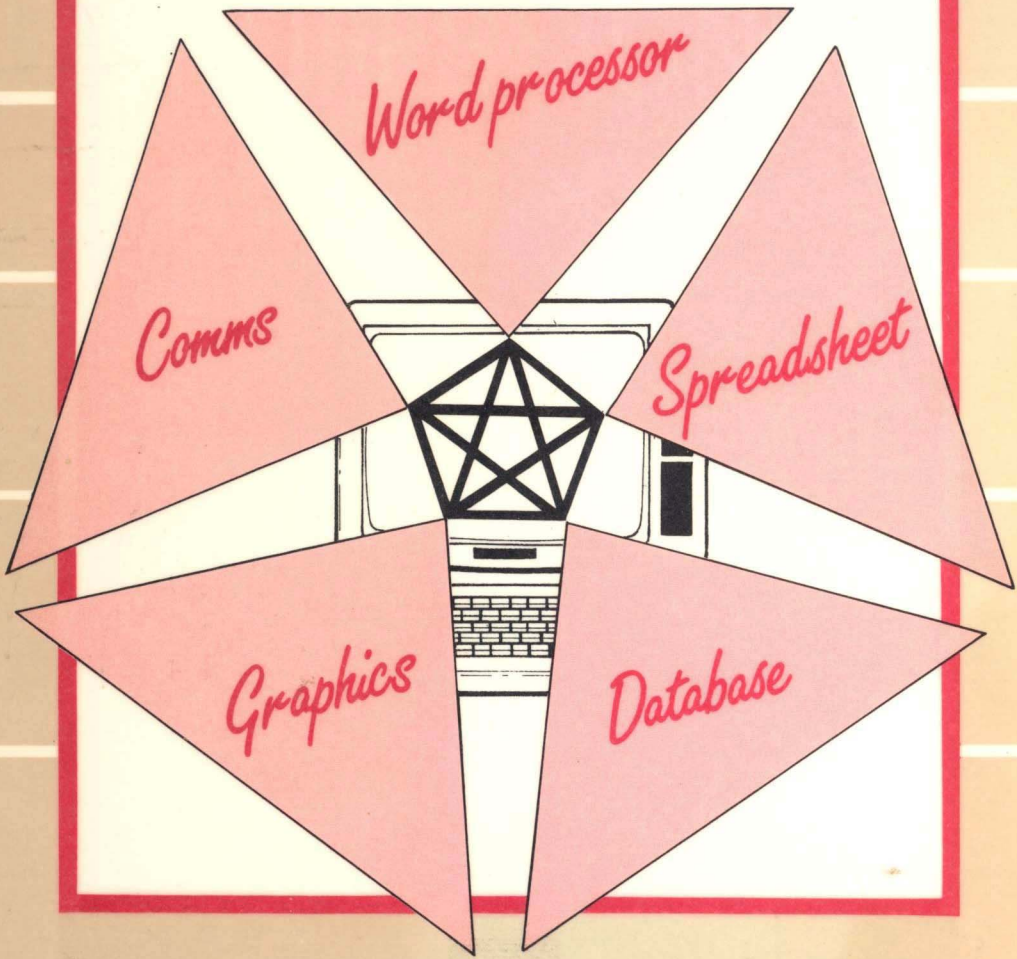
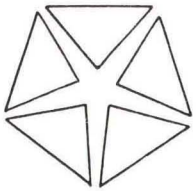
Mini Office PROFESSIONAL



Amstrad PCW
8256, 8512
and 9512

User guide

DATABASE SOFTWARE



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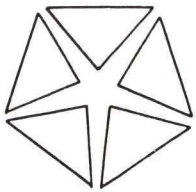


Introduction

MINI OFFICE PROFESSIONAL provides the five most essential pieces of business software in a single, user-friendly, integrated package, each performing a series of specific tasks.

These five modules are:

- A powerful Word Processor.
- A comprehensive Database.
- A sophisticated Spreadsheet.
- An effective Graphics system.
- An easy-to-use Communications system.

What follows is advice on how to choose the module most suitable for your needs, how to use it to the best effect, and how data entered into one module can be used in others.

Details of amendments or updates to Mini Office Professional are on disc 2 side A in a file called READ.ME. To view this file, follow the usual loading procedure for the package up to the A> prompt then enter:

TYPE READ.ME

Also on disc 2, side A are some tutorial files which are detailed on page 71 and a file – READ9512.me – giving the limitations of the package for the PCW9512 with a daisywheel printer.

Getting started

USING Mini Office Professional could not be easier:

- *Ensure the drive(s) are empty.*
- *Switch on the computer, insert your CP/M system disc into drive A and press the spacebar.*
- *Once the A> prompt appears, insert the appropriate Mini Office Professional disc and enter:*

OFFICE

Now press Return, and you will immediately be presented with the main Mini Office Professional menu.

The remainder of this section consists of a brief explanation of the purpose of each module and other major features.

Word Processor

NO-ONE, no matter how talented, will produce even a short piece of writing which is free from spelling errors, grammatically correct and clearly and attractively laid out at the first attempt. A word processor is the only tool available at present which allows a writer to modify his text without constantly copying, erasing and/or redrafting his words. Using the power of the computer to store, manipulate and display

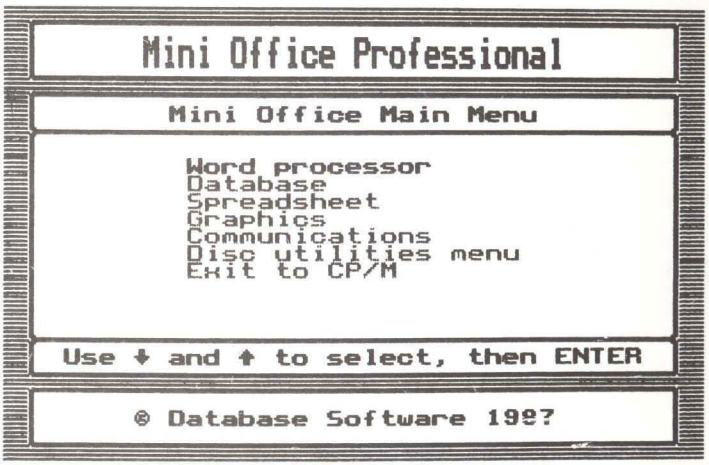
data, you can modify or correct your initial creation until you are completely satisfied.

Database

THE benefits of a database are legion, the most important being that a single record – the computer equivalent of a single document in a filing cabinet – may be found by reference to any or all the categories used such as name, address, date and so on. Studying the contents of any part of the file does not require physical removal of any record, thus ensuring that data cannot be lost. Records can also be sorted in a wide variety of ways prior to being viewed; information can be merged into the Word Processor, making multiple documentation more personal; and labels or reports of any shape or size can easily be printed using the Label/Report printer built into the Database module.

Spreadsheet

THE Spreadsheet can be used in every case where tabular information needs computing. The format is a table of figures which, depending on the memory limitations of your PCW, can be as large or as small as your requirements demand. Once created, your spreadsheet will process all the information to produce the correct results. People with no programming experience and only the most elementary mathematical ability can quickly and easily set up sophisticated calculations.



Graphics

WHILE spreadsheets are an exceptionally efficient way of handling large volumes of repetitive calculations, they do have one serious drawback – the average person can suffer arithmetic indigestion when confronted by a large table of numbers. It is when trying to detect relationships and trends on the table that the interpretation of the results becomes at best a chore and at worst a nightmare. The powerful Graphics module takes figures, either typed in directly or previously saved using the Spreadsheet, and redisplays them as a series of graphs or charts.

Communications

MORE and more companies are now realising the benefits of electronic mail and going online – linking their micro to the telephone and

communicating directly with other offices, not only in Britain but around the world. The Communications module easily allows you, via a few simple keystrokes, to get online quickly with the minimum of fuss. It also gives you the opportunity to access a wealth of information on national and international databases such as MicroLink/ Telecom Gold, Prestel and a host of private electronic bulletin boards.

The menus

MINI OFFICE PROFESSIONAL is operated through the use of menus – lists of options from which you make a selection in one of two ways:

- *Move the highlight to the option you wish to select using the arrow keys and confirm your selection by pressing Return or Enter. From now on any reference to Return also includes the latter.*
- *Press the single letter or key allocated to the option. Using Set/ Unset (the keys marked + and –) you can toggle a display of these at any time a menu is visible.*

Sub-menus

IN some cases another menu will be presented before the action you require is carried out and you select from this in the same way.

This procedure allows you to perform complex activities without needing to know anything about the internal workings of the computer. The options will be presented in terms you are familiar with, such as Erase file or Sort data. Having made your choice if the option you require is irreversible, you will be asked to confirm it by pressing Y for Yes or N for No.

Sometimes when setting options or entering a filename you will need to change the existing entry. You can do this in one of two ways: Edit it as normal using the left and right arrow keys and/or either Del key, or erase a complete entry using Cut and enter a new one.

Menu selection is an extremely simple and safe way of performing your tasks. Therefore feel free to experiment – this is the quickest way to learn about the large number of facilities contained in this package. Rest assured there is nothing you can do to harm the software. If you make an impossible request you will be told, and no action will take place – other than a menu being presented to allow you to choose again.

At all times pressing Exit will abort the current operation or take you back to the previous menu.

Using discs

WHILE using any of the five Mini Office Professional modules you will often want to perform various tasks on files stored on a floppy disc. Each module has two menu options – Disc utilities and Load/Save – which allow you to perform such tasks as Erase, Save and Catalogue.

The way a file is selected is the same for all disc options where a filename needs to be entered. Once you have selected the required feature you will be presented with a list of all the files and a filename at the bottom of the screen. You may edit this name and press Return, or just select it by pressing Return or an up or down arrow key.

You can use * as a *wildcard* for all or part of the name. If more than one file exists that matches the name you enter, all possibilities are displayed on the screen and you select one using the arrow keys. For example, selecting A:*.* will allow you to use the arrow keys to select from all the files on drive A but A:*.DOC only lets you choose from all the .DOC files and A:LETTER.DOC loads that file.

When you selec Load/Save the subsequent sub-menu will vary from module to module to suit the type of data being handled, but you will always select the file as we have just described. Files should not be

saved to the main program discs – a separate formatted data disc is required for this.

To prevent you trying to load the wrong type of data into the module, as you save files the displayed three-letter suffix will be automatically added to the filename to show its type. You can edit this to allow compatiblity with other software but unless you intend to use the file in another package we recommend you leave it as it is.

Disc utilities

THE Disc utilities option is the same on all the modules and when you select it you will be presented with a sub-menu from which you can choose one of the following:

CATALOGUE DISC: Presents you with a directory of the currently selected drive with the files displayed in the order determined by the Sort Files By option. The other drive may be catalogued by pressing the appropriate letter while a directory is on the screen.

SORT FILES BY: Toggles between Name and Type so that whenever files are displayed they are in an order determined either by the first part of the filename or the extender such as .DBS.

SELECTED DRIVE: Allows you to choose which drive is accessed (A or B) when a disc operation is required.

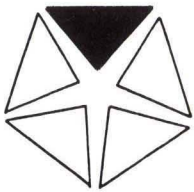
USER NUMBER: Determines which area of the disc will be used for disc operations. Enter a User number from 0 to 15.

ERASE FILE: Wipes files from the disc after confirmation. If you use a wildcard for your selection, when the matching files are displayed pressing Del erases them all while pressing Return or a vertical arrow key allows you to select one.

RENAME FILE: Allows you select a file and give it a new name. Once you have selected the file to rename, the same name is presented for you to edit in to a new one so small changes are easy.

Printers

THE PCW dot-matrix and Epson-compatible printers connected to an appropriate interface are fully supported by Mini Office Professional except where stated. However most other printers should work adequately except where special features are utilised, such as when printing screen dumps from the Graphics program.



Word processor

THE Word Processor module of Mini Office Professional provides you with the facility to create a variety of documents. These can range from a simple letter to a friend, to a complex script or a manual like this.

Although you could attempt to do this with a typewriter, to err is human and it would be extremely unlikely that you could achieve a satisfactory finished product at the first attempt.

The Word Processor offers you a screen editing facility with which you can easily correct typing mistakes, bad grammar, and badly structured text, without having to resort to correcting methods, or re-typing the whole thing again.

Getting started

TO show how easy it is to get your text on to paper we'll enter a couple of lines directly from the keyboard. Try the following:

- From the Word Processor main menu select Edit text
- Type in the paragraph above starting 'To show how . . .' without pressing Return until you reach the colon (:). You'll notice immediately that the word at the end of the line didn't split. The Word Processor assumes, unless you tell it otherwise, that a word too long to fit into the space remaining must be placed on the next line.
- Press Exit to return to the Word Processor menu and select Print.
- At the sub-menu move the highlight down three to select Print again and you'll find your text printed exactly how you typed it.

Mini Office Professional is capable of printing in a wide variety of styles and these can be combined as you wish. To demonstrate this let's print out the same text in double width italic characters. Return to Edit mode and make sure the cursor (highlighted letter) is over the first character in the text (T). Press Shift+Alt+W (for double width) followed by Shift+Alt+I (for italic). You'll notice that all the text shuffles up and two symbols called control characters have been inserted into the text.

To allow you to see how your document will look, the word Processor has a split screen mode called paged edit mode, where the bottom half shows how your document will look and the top half displays it with the control characters in it. Press f3 to see this now. The bottom half of the screen does not update automatically as you work in the top half, but pressing Relay refreshes it at any time. To see this,

type in a few more words and press the key.

The facilities of the Word Processor are too numerous to show with a short piece of text. To allow you to learn some of its features without typing in a large document there's a file called DEMO on the disc and we'll use it for the rest of this tutorial. We'll add more control codes, correct mistakes, move blocks of text to better locations and show you how to polish the document to give a professional result.

To load the letter, select Load/Save for the main menu then select Load Document from the sub-menu. Reply **Y** to the warning message, press Return to enter the default A:*.* and move the highlight to DEMO.DOC and confirm your choice with Return. Press Exit to return to the main menu and select Edit Document to see the demonstration file.

The first thing you'll notice is that there is a ruler at the top of the text. The dim Ts in front of the address cause the first character of each line to fall below the Ts on the ruler. To see the effect of rulers, let's insert another, alter it and finally delete it to return the document to its original state.

Move the cursor to line 2 – you can see the line it is on from the header. Press Extra+R and a new ruler will be inserted. Notice how the address has moved to the first tab. Move the cursor to the first T on the new ruler, delete it and move the cursor down. You'll notice that as the screen is updated the address moves right. The right margin also moves left one, so return it to its original place by moving the cursor back onto the ruler and pressing the spacebar. Alter the other tabs in the same way so that the address returns to its former position when the cursor is moved down.

Try moving the I on the ruler by entering another one – as only one is allowed, the first will automatically be erased. As you move the cursor off the ruler you'll see the paragraphs that have been created with the Alt+Return line up with the new indent position.

Delete some of the dashes in the ruler so that the right margin moves over – notice how when you move the cursor the new width is reflected in the text. You can put the dashes back either by using spaces or dashes. Experiment more with your extra ruler, and once you're satisfied that you understand how it operates move the cursor on to it and press Extra+Del→ to remove it.

The next interesting point in the letter is the date. Notice how *th* has dim characters both sides of it so it prints in superscript. These were inserted using Shift+Alt+S and Shift+Alt+O. Move the cursor to line 11 and press f3 to see this on the preview screen.

Moving on to line 15 of the letter, you'll notice that two words – *currently* and *working* – have dim hyphens in them on the edit screen but only *working* has a hyphen in it on the preview screen. These are soft hyphens and were inserted using Alt+-. They only show in preview or printouts if the word is split at the end of a line. If you insert the words *most of* in front of *the products* and press Relay to update the preview screen you'll see that *currently* is now hyphenated.

On line 19 of the document is a dim C to start condensed printing. Notice how in the table below it, although in Edit mode the columns don't seem to line up with the tabs, in preview mode the smaller text lines up in the correct positions. On the edit screen you can look at the right-hand entries by panning the screen right using Alt+→.

The paragraph starting on line 30 is in the wrong place. Move the cursor to the start of the line and press Cut to put a block marker there and then move down three lines and press Cut again to place the other block marker. Move the cursor to the start of line 46 and press Paste to move the paragraph to its new position.

The paragraph between lines 32 and 37 contains several errors for

you to practice correcting.

The next interesting feature is on line 51 – the new page symbol created by pressing Alt+N causing the summary to be printed on a new sheet. In paged mode the page boundary is shown on the edit screen by a dotted line but in normal edit mode it isn't – as you can see if you press f3. Make sure you are back on the split screen of paged edit mode and move around the summary pressing Relay occasionally to see just some of the effects possible with the Word Processor. In the main part of the manual find out which key combinations gave the effects and experiment with some of the others that we haven't mentioned here.

Most of the features of the word processor can be set from within Edit mode, but others are available from the menus. Move around the menus and look at the options available. Most are self explanatory and so won't be covered in this tutorial – but make sure you try them for yourself to see just how easy it is to tailor a document to your own requirements. Remember, if you print it, it's a good idea to use draft before selecting a high-quality output.

Let's end the tutorial by looking at a couple of the menu-selected options – Search and the Database merge facility. If, for example, you notice a spelling error in the middle of a document the quickest way to find it is to use Search. You should have already corrected any mistakes, but to demonstrate the feature let's just search for the word *off*.

The search always starts from the cursor position, so press Extra+ ↑ to move the cursor to the top of the document then press Exit to return to the Word Processor menu. From there select Search and you'll be presented with a sub-menu where you select Search for. You are then prompted for the search string so type in a word to search for, – **off**. You will automatically be returned to Edit mode with the cursor at the first occurrence of the word.

Now that the search string is entered, you can move to the next occurrence of the word by pressing Find.

If you've made a consistant error throughout your text, you can use Search and Replace to change them all at once. Let's change all occurences of the word *off* to *out*.

Again move the cursor to the top of the text, then select Search and Replace from the Word Processor menu. Enter the word **off** and you will be prompted for the replace string with *off* already entered for you to edit. As the word you wish to enter is completly different, press Cut and type the word **out**. Press Return and you'll find all the changes are made.

Alternatively, instead of pressing Return you can press Shift+Return after typing the replace string. You will be returned to the edit screen at the first occurrence of the search string and you will be prompted *Replace Y/N* so you can decide whether individual strings need replacing.

The final feature of the Word Processor that we'll look at is the Database merge facility. To use this you need both a Database file and a word processor file in memory and there are suitable files on the Mini Office Professional disc. Load the file called MERGE.DOC and its associated set up files (MERGE.PRX and MERGE.DBX) by selecting Load All from the Load/Save menu. This not only loads the document file but, as the Printer and Database set up options are set to Yes on the Load/Save set up menu when the program is loaded, any other necessary values also are loaded.

Next, select Database from the Word Processor menu and load the file MEMBERS.MRG. Select View database just to check what you've loaded and then select Assign Strings. You'll notice that the first string is set as the date. This is good practice if you send a few letters

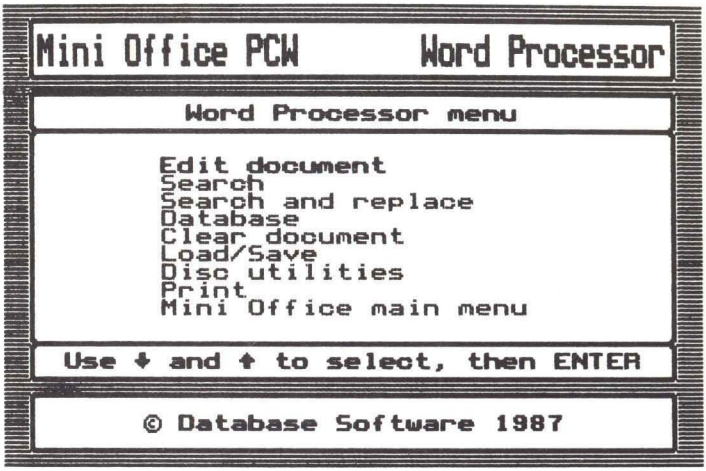
frequently as one insertion of the date covers all the letters.

The other strings are set to the various database fields that we'll be using in our letter.

Now return to the Word Processor menu and select Edit. You'll notice that there are several dim D characters in the text. These were inserted by pressing Alt+D followed by Alt with a number. These cause the appropriate assigned string to be printed out so, for example, D1 causes the date to be printed.

You'll find notes in the document to help you understand this powerful feature but if you preview the document now you'll see the effect of all those codes.

The best way to learn about the Word Processor is to use it, so take the two demonstration files we've given you and extend them, move blocks, change styles and try all the features. You'll soon be able to produce well-formatted, professional-looking documents very easily.



The menu

ON entry to the module, you'll be presented with the Word Processor menu which lists the various options. Let's look at these in detail, starting with the option that you'll spend most of your time within as you use the Word Processor:

Edit Text

IMMEDIATELY after you select Edit Document the top of the screen will display the following header:

This screen header, as it is known, is shown constantly while you're editing your document. It gives you the following information:

Drive	Shows the currently selected drive.
File	Gives the name of the file you're working on.
INSERT	Text can be entered in two ways, or modes – Insert or Overwrite. We'll go into what this means later. Suffice to say that this part of the header shows which mode we're in.

Size	Shows how big the current document is in K (1K=1024 characters).
Lines	Gives the number of lines in the current document.
Pages	Gives the number of pages in the current document if paged mode is selected.
Page	Shows the current page number if you are in paged mode.
Line	Gives the line number of the current cursor position.
Column	Gives the column number of the current cursor position.
Marker	Shows which pair of markers is currently active. Markers are discussed in detail later.
Free:	Shows how much room you have left for your document.
Lines	Shows the maximum number of lines left for your text.
Pages	Shows the maximum number of pages left for your document.
f1-f8	Reminds you of the use of the function keys. These are: **f1** Takes you directly to the Load/Save menu with Save document already selected. **f2** Takes you directly to the Load/Save menu with Save block already selected. **f3** Toggles paged mode on and off. While *off* the full screen is used for editing your text, but when *on* the bottom half gives a display of how your document will look including such features as double height and italics. **f4** Toggles the edit screen between normal and wide mode. In wide mode characters are displayed in double width on the Edit screen. **f5** Compacts the document at present in memory. Although you will always see the document as it should be, during editing gaps are generated in the memory. These are automatically removed from time to time, but the memory occupied can become larger than the actual document and compacting it can speed up editing. You should note that compacting destroys the current format and, until the document re-formats, it will take longer to scroll down initially. **f6** Removes all embedded commands from the currently selected block. If a file is loaded from another word processor it may contain unknown commands that can be removed with this key. **f7** Takes you directly to the Load/Save menu with Merge document already selected. **f8** Takes you directly to the Word Processor menu with Clear document already selected.
Ruler	Shows the positions of the margins, paragraph indents and tabs. Its use is explained later.

The start and end of the text are marked appropriately with START and END and if the text is of any significant length either or both of these may not be on screen at a particular time. The position where any letter you type will appear is shown by a flashing cursor which can be moved around the screen with the arrow keys. Note that if the cursor is positioned beyond the actual end of a line any key press moves it immediately to the start of the next line before inserting the character.

At the bottom of the screen one line is used as a status line. Mess-

ages such as *formatting line 51* are shown here to indicate that actions are happening. At any time you can press Stop to abort an operation and a message to confirm this will also be displayed here.

There are many powerful features available from the keyboard in Edit mode and these are obtained with various combinations of keys and will be looked at in detail over the next few pages.

MODES: There are two editing modes – normal and paged – and to flip between them simply press f3 while you are in either. The paged editing mode employs a split screen with the top part for editing and the lower part as a preview screen which displays, almost exactly, what the text will look like when it is printed. The section of the document displayed in the preview screen is only updated when requested by pressing Relay and it displays a section of the document where the cursor is at that moment. Pressing Relay also updates the edit screen, but this is rarely out of date.

The editing screen in the two modes is very similar with the main difference being that dotted lines show the page boundaries in the paged edit screen. Editing in this mode is a little slower because of the extra work involved in keeping track of page boundaries.

There are two variations of the editing screen – normal and double width – and to change between them simply press f4 (Shift+f3). Double width is easier to read but it is a lot slower and causes panning to occur more frequently as only half the normal line length can fit on the screen.

As we've mentioned, text can be edited in either Insert or Overwrite mode. In Insert mode, if a character or word has been missed out it can be inserted by simply moving the cursor to the place where the text should be and typing the word in with any spaces or punctuation as required. The characters typed in are inserted at the cursor with the rest of the line moved along to accommodate them. Words at the end of the line are moved on to the next line automatically if they no longer fit on the current line and all the document is adjusted accordingly.

In Overwrite mode the character under the cursor is replaced by new characters as they are typed in. Overwriting reverts temporarily to insertion whenever an attempt is made to overwrite a dim character and this is signalled by a beep. Dim characters are control characters that do special things, so overwriting cannot accidentally obliterate them.

Pressing Extra+O will swap the method of character entry between insert and overwrite and the current mode is displayed in the centre of the top line of the screen header.

MOVING WITHIN TEXT: The arrow keys (the cursor movement keys) move the cursor one character or line at a time in the direction indicated. The horizontal arrow keys move the cursor on to the next or previous line as appropriate when the end of the current line has been reached. Char or Alt+Char serve the same purpose as the horizontal arrow keys.

Attempting to move the cursor to the top or bottom line of the screen causes the screen to scroll up or down so that the cursor is always at least two lines from the top or bottom.

There are ways of moving quickly through text using keys or combinations of keys as follows:

Shift+→ or **Word**	Moves the cursor to the start of the next word.

Shift+← or **Alt**+**Word**	Moves the cursor to the start of the previous word.
Alt+→	Moves the cursor right 32, 16 or 8 characters along the line. The number of characters moved depends on the pan value selected in the Set up printer options. If the cursor cannot move the full number of characters, it moves as far as it can without moving to another line.
Alt+←	Moves the cursor left 32, 16 or 8 characters along the line.
Shift+**Alt**+→	Moves the cursor along the line in the same way as Alt+→ but the screen pans right by 32, 16 or 8 characters at the same time. (A pan is the horizontal equivalent of a scroll).
Shift+**Alt**+←	Moves the cursor and pans the screen left.
Extra+→ or **Eol**	Moves the cursor to the end of the current line.
Extra+← or **Line**	Moves the cursor to the start of the current line.
Shift+↑ or **Para**	Moves the cursor to the start of the previous paragraph. If there is no previous paragraph the cursor moves to the start of the document.
Shift+↓ or **Alt**+**Para**	Moves the cursor to the start of the next paragraph. If there is no next paragraph the cursor moves to the end of the document.
Alt+↑	Moves the cursor up 20 lines in normal edit mode or 10 in paged edit mode.
Alt+↓	Moves the cursor down 20 or 10 lines depending which Edit mode you are using.
Shift+**Alt**+↑	Scrolls the text up leaving the cursor in the same position.
Shift+**Alt**+↓	Scrolls the text down one line.
Extra+↑ or **Alt**+**Unit** or **Alt**+**Doc**	Moves the cursor to the start of the document.
Extra+↓ or **Unit** or **Doc**	Moves the cursor to the end of the document.
Page or **Extra**+**Q**	Moves the cursor to the start of the next page when in paged edit mode. The key has no effect in normal edit mode.
Alt+**Page** or **Extra**+**W**	Moves the cursor to the start of the previous page.
Find or **Extra**+**F**	Moves the cursor to the next occurrence of a word or phrase. See the section on search and replace for more information.
Extra+**B**	Moves the cursor to the next block marker or the end of text if there are no more block markers to move to.
Extra+**G** or **Extra**+**Line**	Gives a prompt for a line number in the screen header. Entering the line required moves the cursor to that line. Pressing **Can** Cancels the operation.
Extra+**H**	Moves the cursor to the next header, footer or remark marker. See the section on Paging commands for more information.
Extra+**I**	Moves the cursor to the next integrity marker. See the section on Paging commands for more information.

Extra+J	Moves the cursor to the next joined marker. See the section on Line commands for more information.
Extra+P or **Extra+Page**	Gives a prompt for a page number and then a line number within that page to move to if you are in paged mode. In normal edit mode it results in a prompt for a line number in the same way as for Extra+G.
Extra+Y	Moves the cursor to the next ruler or the end of text if there are no more rulers to move to.

RULERS: Besides using spaces to arrange your text horizontally you can also use tabs, paragraph indents and margins and the position of these is determined by rulers. To generate a new ruler either press Extra+R to force a new line at the cursor and insert the default ruler or copy one from elsewhere in the document using block copy. The ruler can then be edited by moving the cursor on to it and deleting characters or inserting them as follows:

Space or **-** or .	Using - characters, spaces out the indent, tabs and margin.
T or **Tab**	Inserts a tab position shown by a broad T.
I	Inserts the paragraph indent position shown by a broad I.
<	Places the left margin marked by <.
>	Places the right margin marked by >.

If you try to set up an invalid ruler such as attempting to place a left margin to the right of the right margin and vice-versa, your input will not be accepted and the computer will beep. Also attempting to make the ruler longer than the paper width (as defined in Set up printer) or shorter than five columns, is forbidden as is trying to delete a margin character. Tabs cannot be placed outside any margin, and indents cannot be placed outside the right margin.

Rulers can only be deleted by deleting the entire line on which the ruler resides by using Extra and a delete key or by deleting a block containing the ruler line. See the section on deleting.

The current ruler for a particular line of text is always the ruler which is nearest to, but before, that line. The most recent ruler above the top line of the edit screen is always shown in the screen header and shows the following:

Margins: The left and right-most columns that a character can occupy in a line are set by the margin. You should note that although often the margins do not seem to be being obeyed, control characters or a character size that the edit screen does not mimic can cause apparent faults, but on preview or printing the document will be correct.

Tabs: Pressing Tab places a broad dim T in the text and the effect of this symbol is to make the next character following it appear in the column of the next tab position. This is defined on the ruler currently in operation and if there are no more tab positions for the tab character to line up to it behaves as a space.

Indents and paragraphs: Pressing Alt+Return forces the previous line to end, places a paragraph marker – a broad dim ¶ – in the text and indents the first character of the new line to the position defined in the ruler. Indents can be to the left of the left margin, giving you the opportunity to bring lines out from the main body of text.

The paragraph character also forces a number of blank lines before it when the document is printed or previewed depending on the value of paragraph spacing set up in the Set up printer menu.

DELETING TEXT: Sometimes you may wish to erase, or delete, characters, words, lines or even whole blocks of text from your document. This is done using the following keys:

Del←	Erases the character to the left of the cursor and closes up the gap created and the cursor remains on the same character. The first word on the next line will be automatically moved on to the end of the current line if there is now enough room for it.
Del→	Erases the character under the cursor and closes the gap.
Shift+Del←	Erases the word the cursor is currently on and leaves the cursor in the space where the word was. A repetition of Shift+Del← deletes consecutive words to the left of the cursor position.
Shift+Del→	Erases the word under the cursor and moves it to the first character of the word that was to the right of the deleted word. A repetition of Shift+Del→ will therefore delete consecutive words to the right of the cursor position. If the cursor is not on a word when Shift+Del← or Shift+Del→ is pressed the word to the left of the cursor's position is deleted.
Extra+Del←	Erases the line that contains the cursor and leaves the cursor at the end of the line above.
Extra+Del→	Erases the line that contains the cursor and leaves the cursor at the start of the line below.
Shift+Alt+Del← **Shift+Alt+Del→** or **Extra+D**	Deletes the entire block defined by block markers. (See the section on Reorganising text for more information.)
Alt+Del← or **Alt+Del→** or **Extra+N**	Deletes both markers of the current set. Markers can also be removed by deleting them like any other character.

Most key presses gives rise to a single character in the edit screen. (Alt, Shift and Extra with a key is still counted as one key press). This makes inserting, overwriting and deleting of characters easy to follow as there is a one-to-one correspondence between keyboard and edit screen. The only exceptions are tabs and paragraph indents.

When these are used it is not clear whether there are actually spaces in the gap created so when you try to delete a space in such a situation, the character before the apparent space is deleted instead because there is not really a space there. A similar situation also applies at the end of lines: The cursor can end up beyond the last character on the line by moving up or down from another longer line.

Pressing the Grid (at the centre of the cursor movement keys) causes the space characters to be shown as a faint dot, so distinguishing them from apparent or virtual spaces. Pressing Grid again returns them to normal (Pressing Extra+Space has the same effect).

REORGANISING TEXT: The following features will assist you in carrying out major re-structuring of your text. They allow you to copy, move or delete whole sections of the document that are defined by

block markers. A block marker is displayed as a dim square bracket with a number which indicates which marker set this particular block marker belongs to. There are eight sets and the current set is displayed in the screen header as the word *Marker* followed by a digit with a value 1 to 8. The current marker set can be changed by pressing Set or Unset or by pressing Extra together with + or −.

The following keys are used as you manipulate blocks:

Extra+M or **Cut**	Inserts a marker (it is inserted even if in overwrite mode). The first marker of a set will appear as a dim left square bracket and digit, the second will appear as a dim right square bracket with the same digit. An attempt to place a third marker of the same set anywhere in the document will be signalled by a beep as only two markers per marker set is allowed. However, all eight markers can be used at once if desired. On some occasions, the left and right block markers of a marker set may both appear as left square brackets or even be the wrong way round. This often occurs if one of the markers is deleted and then inserted elsewhere or if the second marker is inserted before the first one. However it does not matter and they will be treated sensibly and pressing Relay to update the screen will sort them out.
Extra+C or **Copy**	Duplicates the defined block to the current cursor position, leaving the cursor at the first character of the moved block. You cannot copy a block when the current marker set does not define a block or when the cursor lies within the block and an attempt to do so will result in a beep. Doing a block copy in this way will copy everything that was contained in the original block except for the current or other block markers. The original block is unchanged and will still have the current block markers around it.
Extra+T or **Paste**	Moves the defined block to the cursor position. This transfer operation is identical to block copy followed by block delete.
Extra+K or **Alt+Copy** or **Extra+Copy** or **Shift+Copy**	Copies a block of text but does not copy the control (dim) characters within the block.

CASE CHANGING: As you type your document you will occasionally type letters in the wrong case – capitals instead of lower case and vise-versa. The following keys can be used to change the case of the character under the cursor:

Extra+U	Makes the letter under the cursor upper case.
Extra+S	Swaps the case of the letter under the cursor – upper to lower or lower to upper case.
Extra+L	Makes the letter under the cursor to lower case.

EMBEDDED COMMANDS: These are instructions to the printer that you type in along with your ordinary text, for instance, to change to italics. So that you do not confuse these with the text itself, they are

shown as dim characters. These embedded commands won't appear in the preview or final printing of the document – but they'll have a marked effect on it.

Line spacing commands: These determine how the lines of your text will be spaced in the final document:

Return	Forces the **end of a line** and is signified by a dim, bent arrow.
Shift+Alt+Return or **Alt+Return**	Forces a **new paragraph** or indent with the starting position under the broad I on the previous ruler and the number of lines skipped set on the Default settings menu.
Shift+Alt+V	Sets the **vertical spacing** of lines between 1 and 4. Follow Shift+Alt+V by Alt+1, 2, 3 or 4. This results in a dim Vs character and a dim digit. For instance, Shift+Alt+V followed by Alt+2 will cause subsequent lines when printed or previewed to have a blank line between them. If the line spacing character is not followed by Alt + 1, 2, 3 or 4, it behaves as though an Alt + 1 was there.
Alt+V	Sets the **vertical height** of lines. Follow Alt+V by Alt+0, 1, or 2. This results in a dim Vh character and a dim digit. Alt+V followed by Alt+0 will cause subsequent lines when printed or previewed to have the normal height between them while 1 causes a 3/4 height spacing, by reducing the gap between the lines, and 2 gives a 7/12 height. If the line gap character is not followed by Alt + 0, 1, or 2, it behaves as though an Alt + was there. Using the vertical spacing and gap together can give a wide variety of line spacing. For example, double line spacing with 3/4 gap is equivalent ti a gap one and a half times the usual size between lines.
Shift+Alt+L or **Alt+L**	Allows you to **skip** up to 99 lines by following the dim L character by a dim number entered by pressing Alt and one or two digits. The gap created is either the set number of lines or up to the end of the page.

Paging commands: New pages occur automatically when there is insufficient room on the current page for the next line. However there are several ways you can control the paging of your final document:

Shift+Alt+N or **Alt+N**	Puts a **new page character**, a dim Np in the text and causes the next new line to start on a new page.
Alt+{	Signifies the **start of an integrity block** with a dim {. This is a section of text that must not be split across two pages and if such a section cannot fit on the existing page the whole section will start printing on the next page. There can be any number of these integrity markers, and they do not have to be paired with the end

	markers, although it is normal for them to do so. An integrity block is always a whole number of lines so that the start of the integrity block is the start of the line containing the start integrity marker. If a start integrity marker occurs within an already defined block, it is effectively redundant until either the earlier start marker is removed or an end integrity marker is placed between the two start markers. If two integrity markers (one of each or both the same) occur on the same line, the first one is effectively redundant.
Alt+}	Inserts the **close integrity block** marker – a dim }. The end of the integrity block is usually the end of the line containing the end integrity marker but it can also be terminated by a new page character or by anything else that causes a new page.
Alt+P	Prints the current **page number**, in the form determined by the Set up printer options, anywhere in the document and is shown on the edit screen by a dim P. This is normally used in the header or footer to actually number the pages. If you aren't in paged edit mode the current page is not known, so the number of characters that the number will take is not known and so the length of the line containing the page number will not be known either. This may cause the end of the line to be different in paged and normal edit modes. To keep them the same, the length of the page number string can be indicated by putting a dim digit (achieved by pressing Alt and a digit) after the page number character. This digit should be equal to the length of the page number string and is only used in normal edit mode. In paged edit mode the true page number string length is used.
Shift+Alt+P	The page number for the first page is defined by the Set up printer options but a **new page number value** can be set at any time using this followed by the new page number expressed using the digits 0 to 9 with Alt pressed (thus the digits are dim). If decimal page numbering is chosen, the decimal point is produced in dim too by pressing Alt + . and if Roman (upper or lower) is used the characters are entered as ordinary Arabic numbers using Alt in the usual way. The new page number comes into effect at the start of the next page, not the page in which the page renumber character appears, and it is automatically incremented at the end of each page. In the case of decimal point numbering, it is the fractional part that is incremented. To change the whole number

	part, a page renumber is needed. The maximum page number is 65535 for normal and Roman numbers and 255 for the whole part of the decimal number type.
Shift+Alt+H	Allows you to **define a header** – a word or phrase, often containing the page number, that will appear on the top of every page. The dim H automatically starts a new line and is followed by the text of the header. Headers can contain any normal or dim characters including rulers and can be thought of as short separate documents within the main document and they are printed at the top of each page but ignored elsewhere. For instance, if a ruler is defined in the header it only operates on the header and the ruler that was in operation before the header occurred is again in force when it finishes. If no ruler is defined within a header, it will extend to the extremities of the page as the current ruler is ignored. Headers can be defined anywhere in the document, and there can be as many of them as required. For any particular page, the current header is the one defined on that page (the one nearest the end of the page if there is more than one) or the nearest header before that page. It is normal however to define a header after a new page character.
Alt+H	Shows the **end of a header** and is shown by a dim h.
Shift+Alt+F	Allows you to **define a footer** after the dim F. These operate in the same way as headers but appear at the bottom of the page.
Alt+F	Shows the **end of a footer** and is shown by a dim f.

Line commands: These determine how the words are set out on the line. While the general layout and length of a line is governed by the current ruler it can be modified by incorporating different justifications, line centering, soft hyphens and required joined markers. Each justify character operates on the line where it resides and on all subsequent lines until the next one. The effect of justifications are not shown on the edit screen but are fully shown on the preview screen and printer output. If more than one justify character appears on a line, only the last one is effective. The following justification and other commands are available to format the layout of your lines:

Alt+<	Justifies text to the **left** and gives a ragged right edge to the page. This is the way the text will be presented if no justification command is used. The command is represented by a dim double shafted left arrow in the text.
Alt+>	Forces **right** justification of the text and is represented by a dim double shafted right arrow. Tabs are inconsistent with lines justified this way and if one or more tab characters are in the line it reverts to a left justified line with the

	tab operating normally. Subsequent lines carry on being right justified.
Shift+Alt+J	Justifies text to **both margins** by increasing the width of the spaces and is shown by a dim J. If one or more tabs are in such a line it behaves as though justified left up to the last tab in the line and the rest stretched to fill the remaining space. An indent on a line justified to both margins behaves as would a tab of the same value.
Alt+J	Allows you to **centre** all the lines of your text and is shown by a dim j. If one or more tab characters are in the line it reverts to a left justified line with the tab operating normally. Subsequent lines carry on being centre justified. An indent on a centred line causes it to be offset to the right by an amount matching the indent.
Shift+Alt+M or **Alt+M**	Produces the centre character (a dim ¥) and puts the text in the **middle** of the line. This character overrides any other justification for the line containing it. The presence of tabs and indents has the same effect as when all the text is centre justified.
Shift+Alt+– or **Alt+–**	Inserts a **soft hyphen** into the text and is shown as a dim – on the edit screen. Words containing this symbol will be previewed or printed as if it wasn't present if the word will fit on to one line, but if the word needs to be fitted at the end of a line it will be hyphenated and split if necessary.
Alt+[	Marks the start of a few words that must not be split over two lines. The required **joined markers** (displayed as dim square brackets) make the letters and words between them behave as a single word. (If the markers are in the middle of a word, then the whole of that word is taken to be part of the joined word).
Alt+]	Marks the **end of a required joined** phrase. They can also be terminated by end of line characters if one occurs before the right hand marker.

Font selection commands: These determine which font or character set will be used for previewing and printing. These include bold, italic, condensed, double height and so on. As the styles have different sizes, lines may become longer or shorter than the ruler permits on the edit screen when some of these various effects are used. This is because character widths can be altered so that more or fewer characters can fit per line and it may also appear that the tab positions are not being obeyed in the edit screen but previewing will confirm that they are.

Once they are turned on, all these styles stay in effect until the turn off character is encountered or the end of the document is reached.

All styles can be mixed with each other though some override others and these are mentioned where appropriate. Some combinations produce poor results and trying various combinations will soon show what is best, although it's worth remembering that what

appears to be best in preview may not be so good when printed and vice-versa.

As with other special characters, they can all be included in headers and footers, but their effect is confined to that header or footer. Similarly, effects turned on in the body of the text, do not affect any headers or footers.

All the styles are turned on and off using a combination of a key together with Shift and/or Alt:

Shift+Alt+U	Turns on **underlining** immediately at the first print position following the underline on character (a dim U) and underlines all printable characters including spaces and gaps produced by tabs, but not margins or gaps produced by indents or the gap at the end of a line.
Alt+U	Turns **underlining off** and is shown by a dim u on the edit screen.
Shift+Alt+R	Prints characters **white on black** and shows in preview mode as inverse video. It shows on the edit screen as a dim R and reverses all printable characters including spaces and gaps produced by tabs, but not margins or gaps produced by indents or the gap at the end of a line. Any underline lines are not put into reverse field, that is they stay as a solid line along the bottom of the character.
Alt+R	Turns **reversed printing off** and is shown by a dim r on the edit screen.
Shift+Alt+B	Turns **Bold** on and is shown by a dim B on the edit screen.
Alt+B	Turns **Bold** off and is shown by a dim b on the edit screen.
Shift+Alt+I	Turns on **italic** producing a dim italic I on the edit screen.
Alt+I	Turns **italic** off, producing a dim italic i on the edit screen.
Shift+Alt+S	Turns on **superscript** producing a dim superscripted S character on the edit screen.
Alt+S	Turns on **subscript** producing a dim s character on the edit screen.
Shift+Alt+O or **Alt+Q**	Switches to **ordinary script** by turning subscript or superscript off and is shown on the edit screen by a dim Os.
Shift+Alt+E	Changes the character set to **elite** and is signified on the edit screen by a dim E. Elite sized characters are five sixths the width of normal sized characters.
Alt+E	Turns the **elite character set off** and is shown on the edit screen by a dim e.
Shift+Alt+C	Switches to the **condensed** character set and is indicated on the edit screen by a dim C. Condensed characters are seven twelfths the width of normal sized characters. If condensed and elite are on together elite overrides condensed but if elite is turned off again while condensed is still on, then the text reverts back to condensed.

Alt+C	Turns **condensed mode off** and is shown by a dim c on the edit screen.
Shift+Alt+W	Starts **wide** (double width) printing of the characters and is shown as a dim W on the edit screen.
Alt+W	Switches **double width printing off** and is shown by a dim w on the edit screen.
Shift+Alt+T	Turns on **tall** (double height) text and is indicated on the edit screen by a dim T. If a line containing double height characters is under the influence of single line spacing, double height will also have the effect of forcing double line spacing for that line in order to make room for it.
Alt+T	Turns **double height off** and is shown by a dim t on the edit screen.

Other commands: There are some commands that do not fall into any of the previous categories. These are as follows:

Extra+A	Displays a word count for the complete document.
Shift+Alt+Z or **Alt+Z**	Produces a dim Zz character that **halts the output** to preview or printer when it is encountered. To resume previewing or printing, just press any key or to abort press Exit.
Shift+Alt+Xn,n... or **Alt+Xn,n..**	Allows you to **send codes** directly to the printer. The dim X produced by pressing the keys should be followed by a series of numbers made up with dim digits. Each number should be separated by a dim comma. These numbers will be passed directly to the printer when that part of the text is printed. For example, a dim X77,79,80 would cause the letters MOP to be output. If this command is used, be warned that no attempt is made to interpret the codes output in this way so if they affect the format it may well upset the layout of the document. The example used above may well cause some characters to be lost from the end of the line as there will be three characters more than expected on the line.
Shift+Alt+D or **Alt+D**	The dim D should be followed by a dim number and this number indicates a **database field** or **string definition** is to be inserted at that point. Exactly what is inserted is defined in the assign strings section and the section on Mail merging on page 69 gives further details of this command.
Alt+(	Shows the start of a **remark** in your document and is signified by a dim (. Remarks are handled in a similar way to headers and footers, but they are not shown anywhere in the final previewed or printed output and are used if you want to put an unprinted reminder in your text.
Alt+)	Marks the **end of a remark** with a dim).

Search THIS option allows you to quickly find any word within your text. You will be presented with the foliowing sub-menu:

SEARCH FOR: Lets you enter the letter, word or string that you want to look for after the current cursor position. It takes you to Edit mode with the cursor at its first occurrence. Pressing Find or Extra+F at any time while in Edit mode will find the next occurrence of the last search string. If no match is found, the cursor will not move.

You can search for control codes as part of your strings and these are entered as in Edit mode. To search for end of line markers (Returns) use Eol. A ruler can be searched for using two dim dashes.

If you are unsure of the exact spelling of a word, you can use a dim # obtained by pressing Alt+# as a *wildcard* to represent any character. For example, searching for h#t will find hat, hit, hot and so on.

CASE DEPENDANT: Toggles between Y and N to allow you to decide if the case of letters in your search string is to be ignored.

IGNORE CONTROL CODES: Toggles between Y and N to allow you to decide if control codes (dim characters) within your text are to be considered during the search.

EXIT: Returns you to the Word Processor menu.

Search and Replace

USING this option you can change all or some of the occurrences of a particular piece of text.

When you select the option, you will be presented with the last search and replace string to edit in the usual way. When you enter the word you will be asked to edit it to form the replace string. Once you have done this you have two options:

- Press Return and all occurrences of the string after the cursor will be changed.
- Press Shift+Return and you will be taken to the first occurrence where you can press Y or N to change or leave it and move on to the next occurrence. Press Can to return to normal editing. Pressing Exch or Extra+E will move you to the next occurrence of the word to replace at any time while you are in Edit mode.

Database

THE Word Processor can use data that has been entered in the Database to allow, for example, personalised multiple mailings. Details of how to do this are contained in the Mail merging section on page 69. When you select Database you are presented with the following submenu:

LOAD DATABASE: Loads a Database file so that the fields of each record may be accessed to produce multiple documents containing the information from the Database.

VIEW DATABASE: Allows you to look at the first record of a Database file that has been loaded.

ASSIGN STRINGS: Allows you to define what will be printed when the dim Dn commands are encountered in the text. The strings may be text such as the date or they may be Database fields and they are inserted by pressing S or D followed by the string or field number.

EXIT: Returns you to the Word Processor menu.

Clear Document

THIS option should only be used when you have completely finished working on your text and have either printed it out or saved it for future use. After you have confirmed your selection it completely erases the document from memory but leaves any menu settings intact.

Load/Save

THERE are several options for loading and saving your work. There are

three types of file associated with the word processor – document (.DOC), printer set up (.PRX) and database set up (.DBX). These can be loaded and saved as follows:

LOAD DOCUMENT: Loads a document that has been saved using the Save document option. Text from other word processors can also be loaded using this option, but commands within the text and the way the text is presented may have to be edited as it will be saved in a different format.

SAVE DOCUMENT: Saves just your text, but not any database or printer settings.

LOAD ALL: Loads the text and the two other files that were stored individually or by using the Save all option.

SAVE ALL: Saves your text together with the database and printer settings.

LOAD/SAVE SET UP: Allows you to load or save one or both of your database or printer settings by selecting one of the following:

Load set up: Loads the printer and/or database set up as defined by the other options on this menu.

Save set up: Saves the printer and/or database set up as defined by the other options on this menu.

Printer set up: Toggles between Yes and No to determine whether the printer settings are stored or loaded as part of the set up.

Database set up: Toggles between Yes and No to determine whether the Database settings are stored or loaded as part of the set up.

Exit: Returns you to the Load/Save menu.

MERGE DOCUMENT: A file selected in the usual way is put into the computer's memory, at the position of the cursor, to form a single document. A series of Merge document operations, plus some insertions and deletions, can produce lengthy texts very quickly, merely by patching together previously stored material. If the file you are trying to merge is larger than the free space available it will not load and you are given a warning that the operation has aborted. Only .DOC files created on Mini Office Professional can be merged.

SAVE BLOCK: Saves the currently displayed block of text and this number can be altered in the usual way if required.

SAVE ASCII: Saves the text in the same format as it looks on the preview screen but only alphanumeric characters – so type styles are not saved. This option is usually used to save text ready to use in the Communications package.

SAVE PROMPT: Toggles on and off the facility to have an audible prompt at regular intervals (about 15 minutes) to remind you to save your work.

EXIT: Returns you to the Word Processor menu.

Disc utilities THESE options are common to all the programs and are fully described in the introduction.

Print ONCE you have finished writing your text, this option will allow you to print or preview your work and/or decide on many features that determine the look of your finished document. You are presented with the following sub-menu:

PREVIEW: Displays your document on screen to allow you to see how it will look when it is printed. The screen can be paused by pressing Stop followed by any key to continue or Exit to return to the Word

Processor menu.

PREVIEW PAGE(S): Allows you to preview just the pages determined by the first and last page settings on this menu.

PRINT: Prints the document using the parameters defined in the Set up printer menu.

PRINT PAGE(S): Prints just the pages determined by the first and last page settings on this menu.

FIRST PAGE: Sets the first page that will be used if you print or preview only part of your document.

LAST PAGE: Sets the final page that will be used if you print or preview only part of your document.

SET UP PRINTER: Allows you to set various options that will affect the way your document looks.

Number of copies: Allows you to set the number of copies of your document that will be printed. If a Database file is being used within your document the number of copies represents the number of each record that will be printed.

Page format: Takes you to a sub-menu where you can determine the way your pages will look. These options are especially useful as they allow you to set parameters for the first page where the use of an embedded command would be too late. Note that if you make nonsensical entries (like a top gap bigger than the page) an error will be reported as you try to leave the menu:

Page length: Shows the number of normal text lines that will be printed on the page and is in the range 5-200.

Page width: Shows the maximum number of normal size characters – including spaces between words – that will be printed on a line.

Top gap: Shows the number of blank lines that will be left between the first line of text and the top of the sheet of paper. It can be any figure from 0 to 200. Set this and the bottom gap to 0 if you do not want paged output.

Bottom gap: Shows the number of blank lines that will be left between the last line of text and the bottom of the sheet of paper. It can be any figure from 0 to 200.

Header position: Shows the line number from the top of the page on which the heading will appear. It can be any figure from 0 to 200.

Footer position: Shows the line number within the bottom gap on which the footer will appear. It can be any figure from 0 to 200.

Paper type: Toggles between single and continuous. If single is selected, you will be prompted to press a key between each page of output.

Exit: Returns you to the Set up printer menu.

Default settings: These allow you to set the initial values of several more parameters that determine the look of your document. Note that the following are the initial values, and some can be changed part way through the document using embedded commands.

Line spacing: Cycles between single, double, triple and quadruple to allow you to have from no gap up to three blank lines between lines of text.

Paragraph spacing: Allows you to determine the number of blank lines that will be left when a paragraph marker is met.

Page no. start: Allows you to set the page number of the first page that will appear on your document.

Page no. type: Cycles between Normal, Decimal, Lower Roman and Upper Roman to allow you to choose the form the page numbering will take.

Print quality: Toggles between High and Draft to determine which

style of printing is used at the start of your document. If you want to change part way through the document, Ptr can be used in the usual way. You can put an embedded pause command (Alt+Z) to stop printing at the appropriate place.

Printer type: Toggles between PCW and Parallel. Although any parallel printer can be used if it is connected via an appropriate interface, only the PCW printer and Epson compatibles will allow the various print styles.

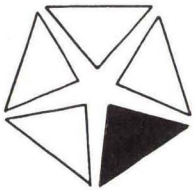
Output type: Toggles between Ascii and All to determine whether control codes will be output with the text. Setting to Ascii is useful if non-standard printers are being used.

Pan value: Allows you to choose how far the screen scrolls sideways in Edit mode when you press Alt with a horizontal arrow key.

Exit: Returns you to the Set up printer menu.

Exit: Returns you to the Print menu.

EXIT: Returns you to the Word Processor menu.



Database

THE Mini Office Professional Database is designed to create and manage data files – collections of information (data) about a subject. Examples are mailing lists, inventories and library catalogues.

Cards in a box-file are an example of a simple database, often arranged in order. For instance names and addresses might be arranged alphabetically by surname.

A database *file* is the equivalent of the box-file holding the cards, and it has a name – whatever you want to call it – like MEMBERS or PRODUCTS. Each card in the file is called a *record*, and each record is further divided into *fields*. A field is a slot reserved in the record for a particular item of information, just as it might be on a card. For example, the first line of each card might be reserved for a surname – the Surname field.

In the Mini Office Professional Database you can have up to 255 fields, and they are numbered to indicate their position in the record. So the Surname field might be field 1.

Fields also have a *title* (that of the Surname field could be SURNAME, NAME, or whatever), a *size*, and you can position them anywhere within the record.

Finally, fields can be of different types, which tell the Database how the field is to be used:

Alpha fields are suitable for names, addresses, telephone numbers, product descriptions and so forth. They can contain any of the alphabetic characters (A to Z in upper or lower case), spaces and punctuation marks. They can also contain the numbers 0 to 9, but cannot be used for calculations.

Number fields contain only digits and an optional decimal point. Up to nine decimal places are allowed. These fields can be used for calculations and are useful for pounds and pence, dollars and cents, and so on.

Date fields – either UK or US – contain eight digits. Two are for the day, two for the month and four for the year, separated by a / sign. So using UK format, 6th December 1987 would be entered as 06/12/1987. A convenient way of referring to this format is dd/mm/yyyy (day, month, year).

Formula fields are a special type which allow all Number fields to be linked by a formula. For example: **1.15*([3]+[4]*[5])** in a formula field will make it display the result of this calculation on fields referenced by number or name. These are discussed in more detail later.

Designing a record gives the file its *structure*, and although the process involves a certain amount of planning, you can alter certain parts whenever you wish. This makes a database as flexible as real cards in a box, and once the structure has been set up satisfactorily, electronic wizardry takes over. An ordinary telephone directory is supremely effective if you know the name of the person whose phone number you want to find. But try searching for a name if you only know the phone number! A database will handle things like that with ease.

Getting started

THE best way to get a feel for the Database is to work your way step by step through a simple example. If you haven't already done so, load Mini Office Professional's Database.

Creating and using a database file is a three-step process:

- First, you define the file structure
- Next you enter the data
- Then you can retrieve and manipulate the data in a variety of ways.

Let's look at each of these stages in detail . . .

It is extremely important to plan out in advance the layout of your records. When doing this yourself there is no substitute for old-fashioned pen and paper. In this step-by-step guide, however, it will be done for you.

To start a new database or amend the structure of an existing one you must select Alter Structure on the Database menu – the first step in creating a database file. Use Return to get to the structure screen which displays various columns and some other information. The far left column shows the field numbers.

Press **A** for Add and you will be prompted to enter the field name.

Type in the word **SURNAME** (in upper or lower case or a mixture of the two). If you make a mistake, use the left and right arrow keys and Delete, and when you have finished press Return.

Immediately the field type **Alpha** will appear, highlighted. Use the up and down arrow keys and watch the field type change. Select **Alpha** for field 1.

Pressing Return at this point takes you to the template screen which at the moment is blank save for a small rectangular cursor top-left and four icon options at the bottom. Don't worry about these for the time being – all will be revealed shortly.

Press Return and you'll see the contents of the bottom window change. To enter the first field just press Return again. As you do so you will see the field size displayed at the top of the screen. Press the right arrow key to increase the field width to 25 and press Return. You will immediately return to the structure screen ready for the next field.

Field 2 will be for the initials associated with the surname. Press **A** for Add and at the prompt make its title **INITIALS**, and its type Alpha.

On the template screen the cursor is tucked away at the left of the first field so just move it to the right using the appropriate arrow key until it is one space beyond the end of the surname field. Press Return and in the manner described earlier set its width to 6.

Add field 3 as ADDRESSA (the first line of the address), field 4 as ADDRESSB and field 5 as ADDRESSC. All are Alpha fields with sizes of 20, 15 and 10 respectively and on the template screen should be placed directly under the surname field, one under the other, with a one line gap between them.

Field 6 is POSTCODE, an Alpha field with a size of 8 and should be

placed directly under field, 5 once again leaving a one line gap.

Field 7 is TELEPHONE, an Alpha field with a size of 15. Place this on the same line as field 6 but directly under field 2 the initials. Note: You can't use a Number field to enter telephone numbers because leading zeros will be lost and dashes (–) will be interpreted as mathematical symbols.

Field 8 will be Age next birthday. Call it AGE NEXT for short – field titles are restricted to 16 characters. It will be an Number field, so select **Number**. Press Return three times to select, in sequence, zero decimal places, no lead character, and no separator character – you'll find these explained in more detail in the Database features section of the manual. The size is automatically set to 20 digits. Place this field directly under field 7 after a one line gap.

Field 9 will be Date joined. Call it JOINED and select **UK Date** as the type. Its size will automatically be set. Place it under field 8.

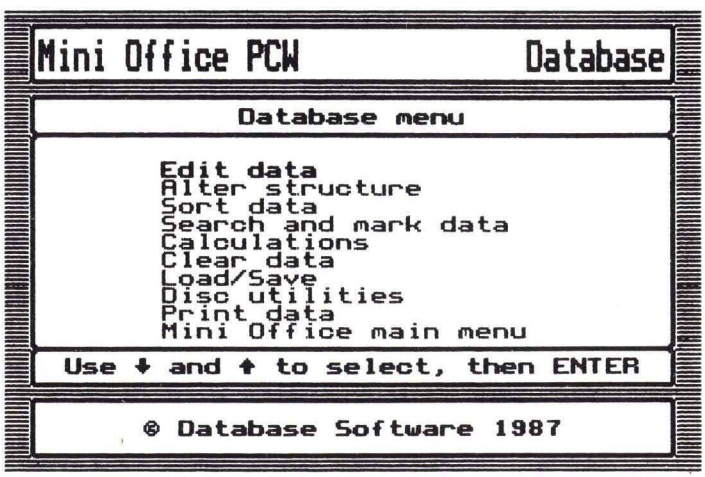
Field 10 will be the Subscription field. Call it SUBS and select **Number** as the type. Press Cut or Del→ to delete the default entry, then **2** for two decimal places, enter £ for leading character and press Return for separator. On the template screen its size will be set to 20.

Before you place it in position, select the SIZE icon at the bottom of the screen to expand the text dimensions by pressing Return three times. Now select Place and locate the field directly under the Date field. When you press Return you will automatically return to the Edit structure screen.

Now is an ideal opportunity to demonstrate some of the other options available as you set up the format of your database. You can add some text to label your fields and make them easier to identify. You can do this in a variety of styles.

First of all press **T** to take you back to the Edit screen. The Add icon is already highlighted so press Return to display its further options. At the next screen press Return again to select Text and you'll find a cursor in position ready to enter text in the top window.

Enter the words **Telephone number,** press Return and using the arrow keys, place the resulting box just to the left of the Telephone number field on the same line. Next enter **Age next birthday**, position it on the same line as the Age field, then **Date joined** and position that. For the final text entry, first select Italic by cycling the third icon using Return, change the SIZE icon by pressing Return twice, and finally turn



underline on. Select TEXT and enter **Subscription due** and place this in position.

You may think at this point that underline hasn't worked, but actually the line is just out of sight off the bottom of the screen. Just scroll the screen upwards slightly using the down arrow icon in the bottom window, and you'll see it come into view. This completes the definition of the file structure.

Normally at this point you would save the file format by Exiting to the Database menu and selecting the Save all records option from the Load/Save menu. However, this is not necessary here as the file already exists on the disc under the filename STRUCTURE.DBS. If you feel confident your format is correct, continue without interruption. However, if you prefer, you can load the pre-defined structure into the database to make sure you are working on the correct format before we carry on.

Edit data

FROM the main menu select Edit data. You will now see the template screen you created and at the bottom are two lines of command prompts. The first to use is **N**ew – create a new record. Press **N** now. Opposite **Age next birthday** will appear a 0, **Date joined** will show 00/00/0000 and **Subscription due** will have 0.00 as its data entry. These pre-defined entries reflect the field type – Number for AGE and SUBS, Date for JOINED.

Move the cursor back to the top-left of the screen ready to enter data into the first field and type in a surname. The cursor will stop moving if you try to enter more characters than the length of the field allows. If you make a mistake, edit the text as before and finally press Return.

The cursor will have moved to the Initials field. Enter a couple of initials and continue entering data up to and including TELEPHONE.

AGE NEXT is an Integer field. Enter a number, editing it in the usual way if you make a mistake. Try entering a letter instead of a number – it will not be accepted.

Next is JOINED. Enter a date as DD/MM/YY including the / symbol. The software will assume 19 for the first two digits of the year, and will also fill in a zero before any digit entered singly. Only valid dates will be accepted – try entering a nonsensical one and you'll find the cursor will be repositioned at the start of the field ready for you enter the complete date again. Remember, dates like 05/07/1000 or 09/12/0500 are valid – you may be creating a historical database.

In the final field, SUBS, enter an amount in pounds and pence separated by a dot, say 3.50. Do not enter the pound sign – it will not be accepted as you have already initialised this when you set up the structure. If no decimal point or pence are entered, 0 will appear in the decimal places.

If you want to change something in any field move the cursor to it and edit the data. When you are happy with the record, press Exit and the cursor will disappear. Then press **N** again for a new record, Record 2, and enter data in the same way. Complete about half a dozen records.

To finish entering data just press Exit again at the point when the cursor has gone and you will be returned to the main menu. Normally at this point you would select the Save option, but to assist you to get to grips with the database a much larger file exists on the disc under the filename MEMBERS.DBS. Load this and you're ready to carry on.

Options

FROM the Database menu select Edit data and look at the bottom line of the screen. You have already used Exit and **N**ew. Now for the other options:

Moving through the file: To browse through the records, use the left

and right arrow keys. Quick movement through the records can be obtained by using the four arrow keys as follows:

←	View previous record.
→	View next record.
↑	View previous marked record or first record if none marked.
↓	View next marked record or last record if none marked.

The **G**oto command allows you to jump to a record. Press **G** and enter **3** followed by Return. You will go straight to Record 3.

Amending records: The **E**dit option allows you to modify data. Choose a record, press **E**, then use the arrow keys to move between fields and change some of the data using the same editing procedures as before. Then press Exit.

Deleting records: To try out this function, go to Record 1 and press **D**. After the *Are you sure?* message answer **Y**. You will see Record 1 has disappeared, and Record 2 has become Record 1. Try deleting Record 4 – subsequent record numbers will drop by one.

Marking records: An important feature of the Database is that it allows you to select records and then create a sub-database out of them. This can be saved as a separate file with its own filename. Records can be individually marked as we'll show now, or a set can be marked together using the Search option as we'll show later.

To try the former, go to any record and press **M** for **M**arker. An asterisk will appear to the right of the record number. To unmark the record, press **M** again. Mark a few records in this way. To jump between marked records, use the up and down arrow keys (if no records are marked you will go to the first or the last record in the file).

To save the marked records, Exit to the Database menu, select Load/Save and save them from the subsequent menu. It's as easy as that!

It's important to realise you have not split the main database into two – you have merely *copied* the marked records to a new file – they are still there marked in the main database.

Printing records: Try printing a record displayed on the screen with the **P**rint option. The record number and its data will be sent to the printer. If a printer is not attached, or not working, nothing will happen. Pressing Exit will abandon the print command.

This option in Edit data is a quick way of sending a single record to the printer. A more powerful print feature is explained in the Print data section, and further ways of printing from the Database will also be found in the documentation for Report/Label printing in the Database section and also in the Word Processor section as Database files can be merged into Word Processor files for printing.

Search

WE can now move on to show you Search, the alternative way to mark your data, and to make use of the Sort and Calculate options.

Let's start by searching the database for all the members in London who are over the age of 20. To make sure these will be the only marked records we'll remove any markers already present. First of all press Exit to return to the Database menu and from there select Clear data. From the sub-menu select Clear markers and fter confirmation press Exit to return to the Database menu where you select Search and Mark data.

You will be presented with a screen similar to Edit structure. The first thing to do is select the Town field. The cursor will then prompt you to enter the search word and you can enter **London** in upper or lower

case, or a mixture of both. The highlight will now move to the third column where you can cycle through the search options available using ↑ and ↓.

Select *= which means that not only will the word **London** (=) be found when it's in isolation, but also among other words that may have been entered in that field such as **near** or **NW1** (*). The next prompt whether or not you wish to ignore case – press **Y** so that London, LONDON and the accidental london will all be found. The letters IC will be displayed in the final column to confirm your choice.

Now select the age field, enter **20** and select > (greater than). As you are dealing with numbers you will not be prompted for case.

At this point, press **S**, all your required records will be marked and you will be informed of the number of matches.

If additionally you wanted to search for members aged over 20 who live in Manchester, it is simply a matter of repeating the above procedure substituting the appropriate search criteria without first clearing the already marked London records.

Calculations

NOW that the search is complete let's increase the London members' subscriptions by 15 percent. Select Calculations from the main menu then the Alter marked records option. This also presents you with a similar screen to Edit structure from which you select field 10, Subs.

At the prompt use the arrow keys to select the asterisk (*) as an increase of 15 percent entails multiplying by 1.15. At the next prompt enter the operand – 1.15 – after confirming your entry. You will then be returned to the Calculations menu where by selecting Total marked record, followed by Subs on the following screen, you will be able to see how much income will be raised from these members.

Let's finish by sorting the database into descending age order and printing out the marked records.

Sort data

FROM the Database menu select Sort data and on the screen move the highlight to Age next, then press **D** for descending order. In our database there are more than two people of the same age, so we can sort these additionally by surname. Move the highlight to Surname and press **A**. People with the same surname will be sorted by initials if you subsequently select Initials and press **A**.

Once you are satisfied with your sort criteria, press **S** for the sort to take place. After a slight pause you will be returned to the Database menu where selecting Edit data and using the cursor keys to move through the records, you will be able to see that the sort has in fact been successful.

All that remains is to return to the Database menu where you can select Print data. From the sub-menu, selecting Print marked records will provide the required hard copy in a variety of print styles.

Print Reports/Labels

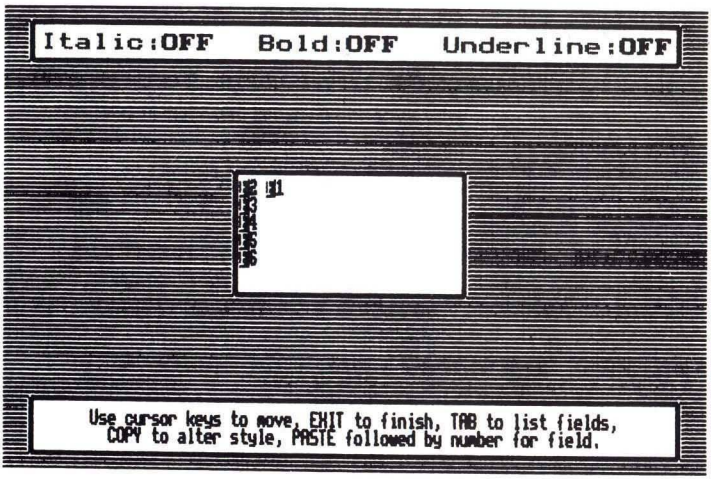
Alternatively from the same menu you could select the Print Reports/Labels option to make some labels to address envelopes to send all those lucky people a letter informing them of their newly acquired debt. Let's do that now.

We'll assume the label and paper default sizes indicated are correct, so select Edit Report/Label to go to the editing screen where you can enter text from the keyboard and/or selectively use information from your database.

Set up the screen as shown in the figure on the next page. The first five lines are to contain the name and address and these are represented by F1 to F6. The letter F appears in inverse video when you

press the Paste key and stands for field. After it you must insert the appropriate field number from your database file.

On the first line you'll have F2 and F1 representing the initials and surname. You can then enter any text and punctuation required such as Esq and commas. The codes F3 to F6 will bring in the address and postcode fields for similar treatment.



At the top of the screen you will see three options currently set to OFF. These can be used to print your label in a variety of different ways – Italic, Bold and/or Underlined. For this example we'll output the name in bold. Just place the cursor to the left of F2 and press Copy. Press B followed by Return to confirm your choice then move the cursor to the right of F1. Press Copy, B again, and Return to confirm.

Press Exit twice to return to the Print data menu where you must select Print Reports/Labels. Pressing Return again will toggle Records to use to *Marked* after which selecting Print Reports/Labels will achieve the desired result.

The Report/Label printing feature is also ideal for printing out your records in a variety of ways suitable to your own requirements. Typical examples would be invoices, menus and directories. Let's print out a directory of our name and address file to show how easy this is.

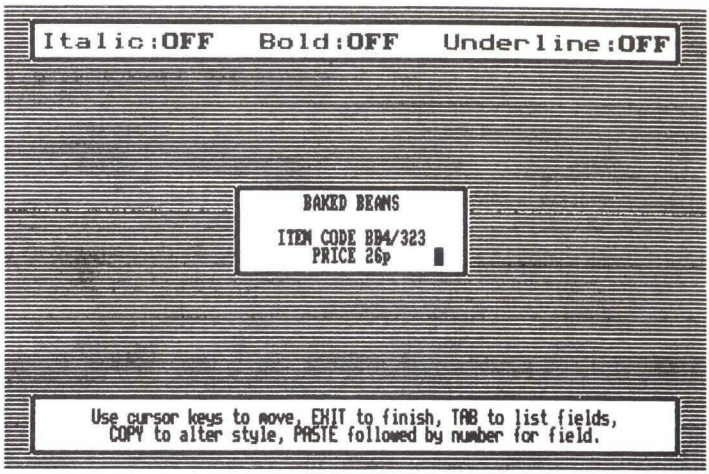
First of all return to the Edit Report/Label format menu. Set the Number across and depth options to 1 and move to the Edit screen. You will notice immediately that the window has changed shape. Again, using Paste for the Fs, enter into it: F2, F1, F3, F4, F5, F6 and then press Exit twice to return to the Print Data menu to select Print Report/Label. Set the options to your requirements and print your directory.

The Report/Label printing feature can also be used to produce multiple copies of identical labels without resorting to a data file – for example to price and/or identify products.

At the Edit Report/Label screen enter the information shown in the figure overleaf, directly from the keyboard. Return to the Print Data menu and select Print Reports/Labels. In the Records to print option enter the number of labels you want and select Print Reports/Labels. The new format will be output to the printer.

That completes the tutorial introduction to the Database and hopefully you will have found it straightforward. However it has taught you

only a part of what the Database will do. The next section describes its many other features. Work your way through them, applying them to the name and address database and any other practice databases you create.



The menu

HAVING mastered the basics of creating a Database file, we'll take a look at the Database menu options in more detail and as your first step in creating a database is to define the structure, we'll study that option first.

Edit structure

USE this to define or alter the format of your database. An explanation of how to use some of its features was given in the tutorial introduction.

Providing a structure is defined, there are four columns displayed on the editing screen. These hold the field number, name, type and the last one is empty and used in other database options.

The options available are displayed at the bottom of the screen and are as follows:

↑ or ↓ : Moves between existing fields to allow you to choose one to modify or position a new one.

ADD: Allows you to add a new field to the end of the list of currently defined ones or start defining the structure. You then set up the following:

Field number: Set automatically as you press **A** and requires no other input.

Field name: Enter this from the keyboard in response to the prompt. It can be up to 16 letters long and cannot contain numbers.

Field type: Allows you to select Alpha (text including numbers), UK Date (dd/mm/yyyy), US Date (mm/dd/yyyy), Number or Formula. Using the vertical arrow keys cycles through the options and you confirm your choice with Return. When entering number or formula fields, you'll then be prompted for some more information that will be detailed later and in all cases you are then presented with four icons:

Place: Allows you to position the field on the screen. Use the arrow keys to move around the screen and press Return when you are satisfied with the position. Except for with Alpha fields a box is

then left highlighted on the screen to show the field size and position.

The width of an Alpha field is set using the left and right arrow keys and the number of characters (maximum 72) is reflected at the top of the screen. An Alpha field may consist of more than one line (up to eight) and more are selected using the up and down arrow keys. Each line may be accessed separately for printing a report/label. So for instance a complete address can be contained in one field. Once you are satisfied with the size and position, pressing Return confirms.

When entering Number fields you will be prompted additionally to enter the number of decimal places (0-9). Next you must indicate the lead character such a £. The final stage before you enter the template screen is to choose a separator character, which allows you to separate thousands with a comma.

Formula entries require the same input as Number fields with the additional prompt for you to enter the actual formula. They represent the relationship between fields containing numbers, within a single record – Number, Formula and Date. Relationships that can be used are:

()	Brackets.
+ –	Unary sign such as +1 or –1.
+ –	Add and subtract.
*** /**	Multiply and divide.
↑	Raise to the power of (obtained using §).
< >	Less than, greater than.
<= >=	Less than or equal to, greater than or equal to.
= <>	Equal to, not equal to.
NOT()	Logical bitwise NOT of the bracketed expression.
ABS(n)	Absolute value of n.
INT(n)	Rounds n to an integer.
SGN(n)	Sign of n.
SQR(n)	Square root of n.
IF(n,exp1,exp2)	If the value of *n* is non zero (true) *exp1* is calculated; if *n* is zero (false) *exp2* is used.

A formula can contain up to 71 characters and to prevent confusion with numeric or text entries, all field numbers and names must be enclosed in square brackets as shown in the examples:

([TOTAL]+INT([5]))*1.78+SQR([3])
IF([4],[8],[9])
IF([4]>[6],[Profit],[Loss])

When you reference a date field, suffix the name or number with .d, .m or .y for the day, month or year.

Norm: Allows you to select normal or dim output.

Normal: Gives a choice of four different typefaces as shown in the icon itself.

Size: Cycles through the four available sizes showing the selection within the icon.

TEXT: Presents you with six icons with which you can place text between the fields to determine the layout of your record:

Add: Provides seven further options which allow you to present the text in a variety of styles, and to scroll through the template. Once you have set the styles in a similar way to choosing the style of

printing for a field, select Text to enter your information at the top of the screen. Pressing Return provides you with a hover box with which you can position your text.

Modify: Allows you to select the text you wish to change, then provides the same seven options above.

Delete: Deletes selected text after confirmation.

Clear: Wipes the whole template clean after confirmation.

↓ ↑ Scrolls the template.

INSERT: Increases the number of the highlighted and all subsequent fields by one, and allows you to put another record in the gap created using the same method as for adding fields.

DELETE: Removes the highlighted field, after confirmation. All subsequent fields are renumbered accordingly.

Edit data YOU use this to create records based on the template defined in Edit structure; to change existing records and add more; and even scan through them. Its use was fully explained in the tutorial section. The available options are:

←	Returns to the previous record.
→	Moves to the next record.
↑	Returns to the previous marked record or first record if none are marked.
↓	Moves to the next marked record or last record if none are marked.
NEW	Adds an empty record ready to enter data. The cursor moves to the exit field each time you press Return. You can also move around the Edit screen using the cursor keys.
EDIT	Allows you to change the current record.
MARKER	Toggles the asterisk in the top-right corner on and off to signify marked or unmarked records.
GOTO	Sends you to the record selected by number.
DELETE	Removes the current record.
PRINT:	Sends the current record to the printer in the style determined by the settings in the Print Data menu.
SET and **UNSET**	Allows you to scroll up and down through the current record.

When entering a Date field only valid input will be accepted in the form dd/mm/yyyy (UK) or mm/dd/yyyy (US) – including the / characters. You select the appropriate field type in Edit Structure.

If two digits are entered for the year, 19 will be assumed; single numbers will be displayed with a preceding zero; and if any numbers are omitted the previous entry is duplicated. For example if you type **12/5/87** for the first entry, it will be displayed as 12/05/1987 and subsequently typing **//86** will display 12/05/1986. An entry of **14/6** will change this to 14/06/1986.

Sort data THIS is the option which allows you to re-order and automatically re-number all your records. Its use was explained in detail in the tutorial section.

You are presented with the same screen as in Alter Structure and it is here the final column, referred to previously as *Empty*, comes into force. You can sort on as many fields as you wish by simply highlighting each one and pressing **A** or **D** to indicate the sort order. This order

indicated in the final column with ascending entries shown bright and descending dim.

You can change current entries from A to D at will, and using the **C**lear option remove one from the list. The remaining sequence re-numbered to take account of this.

Once you have set the required order selecting **S**ort will carry out the function.

Search and mark data

YOU use this option to search for a particular set of records from your database and mark them for future use. Searching and marking was explained in detail in the tutorial section.

You are presented with a similar screen as in Alter Structure but here the final column is split into two.

Select the field to search and enter the data you wish to find. The cursor will then move to the first of the two columns where you will be prompted to select the search criteria. You can cycle through the following for all field types using ↑ and ↓.

=	Equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to

A further option is available if the field type is Alpha:

*=	Matches the word(s) anywhere within the field. This is extremely useful for finding an entry for which you are only certain of part of the word. For example the letters **son** would find Richardson, Peterson Fred, Sonia and so on.

Once you are satisfied with your search criteria selecting **S**earch will carry it out. After all searches, the current record (the one displayed first in Edit mode) is set to the first marked record or the first record if no records are marked.

Alpha fields will additionally prompt for ignoring case and your choice will be confirmed in the right-hand column and they are treated in the following order: Numbers...A...AA...AB...a...ab and so on.

Calculations

THIS option allows you to perform calculations on number fields and its use was also fully explained in the tutorial section.

You are presented with the following options which each present a screen similar to Alter Structure where you select a field:

TOTAL ALL RECORDS: Gives you the total of the chosen field throughout the database.

TOTAL MARKED RECORDS: As above but only for the marked section of the database.

ALTER ALL RECORDS: Allows you to modify numeric fields throughout the database by selecting an operator (+ – * /) and the amount by which the record is to change.

ALTER MARKED RECORDS: As above but only for the marked section of the database.

EXIT: Returns you to the Database menu.

Load/Save data YOU are presented with the following options:

LOAD DATA FILE: Loads a database into memory and clears any data currently in memory.

APPEND DATA FILE: Loads a database adding it to the one currently in memory. Its structure must match that of the one in memory. Should the file be too long you will be informed so you can abort the append, or only load as much of the second file as memory will allow.

SAVE ALL RECORDS: Saves all currently defined records and their structure.

SAVE MARKED RECORDS: As above but for marked records only.

SAVE MAIL MERGE FILE: Saves the database in a format suitable for use with the Word Processor module.

LOAD REPORT/LABEL FORMAT: Loads a previously saved report/label structure erasing the current one from memory.

SAVE REPORT/LABEL FORMAT: Saves the current report/label structure.

EXIT: Returns you to the Database menu.

Clear data YOU are presented with the following options:

CLEAR ALL RECORDS: Wipes all records from the database but leaves the structure intact.

CLEAR MARKED RECORDS: Wipes only marked records from the database.

CLEAR MARKERS: Unmarks all marked records. It is important to use this before using the search facility, particularly if you are performing a series of searches. Clear all the markers between each search unless you want to add new "hits" to the previous ones.

CLEAR WHOLE DATABASE: Wipes everything from the database including the structure leaving only the program in memory.

TOGGLE MARKERS: Marks the records which are unmarked, and vice versa. This is a very useful facility if you wish to divide your database into two.

CLEAR REPORT/LABEL FORMAT: Wipe the current report/label template from memory.

EXIT: Returns you to the Database menu.

Print data THIS option provides a wide range of facilities that will allow you to configure printouts to your own requirements.

PRINTER TYPE: Cycles between PCW and parallel printers.

PRINT STYLE: Cycles through Draft, NLQ and Graphic modes allowing you to select an output your printer will support. In Graphic mode all styles such as underlined and double-height will be supported.

SEPARATE RECORDS WITH: Cycles through the following options:

Line: Draws a line between each record.

Form: Sends a form-feed between each record then puts each one on a separate sheet.

None: Prints each record one after the other with no separator.

PRINT FIELD NAMES: Cycles through the options to dispense with field names altogether, or to print them either normally or in italic.

PRINT TOTALS RECORD: Toggles between Yes and No.

PRINT ALL RECORDS: Prints the records in the form you have defined using the other options on this menu.

PRINT MARKED RECORDS: Again prints the records, but this time only the marked ones.

EDIT REPORT/LABEL FORMAT: Takes you to a sub-menu where you can use the following options:

Edit Report/Label: Takes you to the report/label editing screen where you can dictate the form the output will take. It has a variable size centre window automatically set corresponding to the label dimensions – maximum 72 characters by 16 lines deep. The normal editing keys are used in this window but in addition the following special function keys are available:

Tab: Displays the information relating to each field number should you need reminding of the contents.

Paste: Inserts a marker (▮), where you wish a field to be printed. This must be followed by the field number required. Alpha entries must be followed by an additional number to indicate the line required from the field. Entering **4.2** will take in line 2 from field 4.

Copy: Allows you to provide different text styles provided your printer will support them. Pressing **U, I,** or **B** will toggle the three styles on and off, and pressing Return will confirm your choice and insert a special code at the cursor position that will have an effect on all the following text up to the next change.

Number across page: Allows you to enter the number of reports/labels (between 1 and 8) to be printed across the page and automatically sets the tab positions.

Characters across the page: Allows you to enter the maximum number of characters allowed by your printer (10 - 255). You must take into account paper width and type styles.

Report/Label depth: Sets the number of lines on each report/label, between 1 and 255.

Suppress excess spaces: Toggles between Yes and No to ignore spaces at the ends of fields. This allows you to close fields up to a one space gap.

Gap between outputs: Allows you to decide whether your output has a blank line, form feed or nothing between each record. The default is a blank line for the purpose of printing labels.

Modify tab settings: Takes you to an editing screen where you can dictate the size of your tabs.

Exit: Returns you to the Print data menu.

PRINT REPORTS/LABELS: Takes you to a menu which contains the following options:

Records to use: Toggles between All and Marked.

Print style: Toggles between Draft and NLQ.

Character size: Cycles through:

Pica – 80 characters across page
Elite – 96 characters across page
Condensed – 137 characters across page.

Records to print: Allows you to indicate the number of records to be accessed for printing. This is set automatically from your entry in First record to use (below) so that unless you change it records will be printed to the end of the database.

Outputs per record: Allows you to indicate how many outputs you require from each individual record within the selected range.

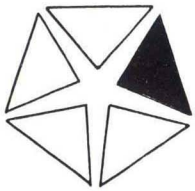
First record to use: Allows you to indicate from which record the print will commence.

Print Reports/Labels: Outputs the database fields in the form defined using the options on the two reports/labels menus.

Test print: Prints two rows of labels, using asterisks to show the maximum field lengths, to allow you to see the format of your report/label and position the paper.

Exit: Returns you to the Print data menu.

EXIT: Returns you to the Database menu.



Spreadsheet

THE Spreadsheet module of Mini Office Professional provides a powerful way of getting your PCW to carry out all kinds of calculations on figures input by you.

You can display the results in two formats – either by printing using the spreadsheet's own options, or by passing the file across to the Graphics module and displaying the data in a pictorial manner.

Getting started

THERE are four stages involved in creating a spreadsheet: Planning the layout, entering text and formulae, entering data and producing the output.

Of these, planning the layout is probably the most vital as time spent here will be time saved later. Once the spreadsheet is planned, it is comparatively easy to enter all the necessary facts and figures and even easier to alter them as circumstances change. Although, as you'll see later, you can modify the actual structure of the spreadsheet, it's better to get it right first time. A little thought at the design stage saves a lot of tears later.

You'll find designing the spreadsheet easier if you use a squared grid or matrix on a piece of paper. It doesn't have to be identical to the finished computer-generated spreadsheet – it's more of a model which helps avoid silly mistakes. It's far better to come across them on paper rather than halfway through entering the spreadsheet structure into your micro.

While you're roughing out the structure use a pencil and make sure you have an eraser to hand as it is virtually certain you will make several alterations before you are satisfied with the final layout.

The size of the spreadsheet depends on the amount of data it's going to hold. Since the matrix is two dimensional – rows and columns – you have to organise the data into this form. For instance, you could have days going across the spreadsheet, one column for Monday, one for Tuesday and so on. The rows could then be given over to income, expenses or other such data. Use as many labels as possible to identify the figures as this helps to make the spreadsheet easier to understand.

For illustration, let's create a spreadsheet to show a weeks household expenses with the days in the columns and items in the rows as shown on the next page.

Once you've got the basic table ready you can start to fill it in. First of all you'll need to enter the cell references or coordinates. This couldn't be easier as the spreadsheet identifies columns with letters and rows with numbers. All you need to do is string the letters in alphabetical order across the top of the grid, and number the rows down the side.

Leave some blank columns and rows for clarity as shown in the example below. If you have more than 26 columns, start again in column 27 using double letters such as AA, AB and so on.

Each intersection of row and column defines what is known as a **cell** and is referred to by a combination of column letter and row number. For example, if column G was given the label **FRI** and row 5 was labelled **PAPERS**, the cell which contains the cost of Friday's papers is identified as G5. We'll see later that cells can also be identified with a tag name such as **FRIPAP**.

Cells are filled with one of three things: Text, data or formulae. Text such as FRI and PAPERS is used to keep track of the figures. Data consists of figures the spreadsheet will use to do its calculations – if Friday's papers cost 84p, the data in cell G5 will be 0.84. Formulae, as you'll see in more detail later, are just ways of telling the spreadsheet what to do with the data in order to calculate a required result.

Where calculations are necessary in the layout, just enter a reference number in the appropriate cell and use it to keep track of all the formulae on another piece of paper.

Suppose you wanted to calculate the average cost of your daily papers and place this in cell L5. This cell must contain the total cost divided by 7. If the sum of all paper costs is held in K5 the formula is:

L5 = K5 divided by 7

Using the language of the spreadsheet this is written as:

L5=K5/7

When it finds this formula, the spreadsheet will look at K5, take the

HOUSEHOLD EXPENSES

	A	B	C	D	E	F	G	H	I	J	K	L
1			MON	TUES	WED	THURS	FRI	SAT	SUN		TOTAL	AVERAGE
2												
3	FOOD											
4	PETROL											
5	PAPERS											
6	MILK											
7	DRINK											
8	CIGS											
9												
10	TOTAL											

Row and column labels inserted

value it finds there, divide it by 7 and place the result in L5.

Where similar formulae are used there's no need to write them all down on the sheet of paper. If for example you were totalling rows, the spreadsheet can copy formulae from the first entry and use the corresponding cell references. All you need do is note the location of the formula and repeat that cell's reference on your grid to indicate the formula is to be used in more than one cell.

Once you're satisfied with the model, you're now ready to transfer your spreadsheet from paper into the computer. The example on the next page shows the data we'll be using in our tutorial spreadsheet.

Having loaded the program, it is an ideal opportunity to show you how to set the size of the spreadsheet together with some other details. From the menu, select Alter spreadsheet and change the number of columns to 12 and rows to 10.

Select the Cell display option and you'll be presented with another menu that allows you to make other changes to determine the look of

HOUSEHOLD EXPENSES

	A	B	C	D	E	F	G	H	I	J	K	L
1			MON	TUES	WED	THURS	FRI	SAT	SUN		TOTAL	AVERAGE
2												
3	FOOD		£5.79	£5.25	£6.37	£8.42	£7.21	£6.32	£9.91		form	form
4	PETROL		0	£10	0	0	0	£15	0		form	form
5	PAPERS		45p	61p	20p	25	84p	96p	£1.32		form	form
6	MILK		48p	48p	48p	48p	48p	48p	48p		form	form
7	DRINK		£1.42	£2.83	0	£1.74	£3.45	£12.34	6.87		form	form
8	CIGS		£1.52	£3.04	£1.52	£1.52	£1.52	£4.56	£1.52		form	form
9												
10	TOTAL		form	form	form	form	form	form	form		form	form

FORMULAE:

K3=C3+D3+E3+F3+G3+H3+I3
L3=K3/7
Copy K3 to K4,K5,K6,K7,K8
Copy L3 to L4,L5,L6,L7,L8
C10=C3+C4+C5+C6+C7+C8
Copy C10 to D10,E109,F10,G10,H10,I10,K10,L10

The ready-to-enter spreadsheet

your spreadsheet. You'll see the present settings are ideal for our example so we'll leave them as they are.

Press Exit twice to return to the Spreadsheet menu and from there select Edit data. You'll be presented with an empty spreadsheet ready to accept the data from our example.

The spreadsheet we're working with for illustration is only small but the screen shows only part of it: It's a window containing only the top-left corner of a larger grid. You'll notice that one of the cells is highlighted – this is known as the active cell and is the point where you enter the data. This highlighted cell, known as the cursor, can be moved around using the arrow (cursor) keys.

Try moving the cursor. You can even move it to a cell which is off the edge of the screen, but there may be a very brief delay while the spreadsheet shuffles the new row or column into view. This way you can look at columns K and L. Any columns or rows that disappear (in this case A and B) aren't lost – they remain in the micro's memory even though they are not visible.

At any time you can enter data into the active cell. Provided it doesn't start with plus (+), minus (–), full stop (.) or a number, the data will be taken as text and justified according to the settings chosen in the Cell Display options. If the data does commence with one of the above characters it will be treated as a number.

So to enter the days move the cursor to C1 and type **MON** – you'll see the letters appearing in the status line. Once the word is complete press Return and it will be transferred to the cell. Move the cursor along the rest of the row entering the remaining days until you have entered **SUN** in I1. Leave J1 blank and enter **TOTAL** in K1 and **AVERAGE** in L1.

You'll notice that after each entry you had to move the cursor right but there is an easier way to place the cursor in position ready for the next entry. We can demonstrate this as we enter the commodities into column A.

Press Alt+A to initiate *Auto cursor* and you will see this confirmed by the appearance of the word Left. We want to enter data down a column so press Alt+A three more times and Down will appear in the status window.

The last entry was in L1 and the next one will be in A3. To save you moving the cursor cell by cell over the spreadsheet there are several options available for quick movement. Pressing the grid key (in the centre of the arrow cluster) will home the cursor to A1.

Move the cursor to A3 and enter **FOOD**. As you press Return the data will be entered into the spreadsheet and the cursor automatically moved to A4 ready for the next entry (**PETROL**). Enter the rest of the commodities shown in Table II down column A. Leave A9 empty and enter **TOTAL** in A10. Your spreadsheet is now labelled and ready to accept the figures and formulae.

It's a good idea to save your work occasionally in case of events like power cuts. The spreadsheet has an instant save facility and if you press Alt+I you will be prompted for the filename to use. Press Return to use the default filename shown and once the file has been written to disc you will be returned to Edit mode.

We're now ready to move on to enter the prices of the commodities. The figures can be typed in directly in the same way as text and are displayed to the number of decimal places set for that column. Notice that all the figures in our spreadsheet are in pounds so 48p will be entered as 0.48 or .48.

Here we can demonstrate another of the spreadsheet's quick cursor movement commands. To move straight to C3 ready to enter the first number press Alt+G and reply C3 to the *Go to cell* prompt that appears in the status window. Use Alt+A to select Auto Cursor right and enter the figures for FOOD.

Repeat the process on rows 4 and 5 to enter the costs of PETROL and PAPERS. You'll notice that the figures for MILK in row 6 are all the same, so just enter **0.48** into C6 and we'll look at a quick way to copy it across the row.

Position the cursor at C6 and press Copy. We are going to copy the single cell so press **S** and position the cursor at D6 and press **C** to copy. Move to E6 and press C again repeating the process until you have copied the cost into all the cells up to I6. You will automatically leave copy mode as soon as you type something else.

The final figures to enter are those for DRINK and CIGS. Type in those for DRINK in the usual way but use the built-in expression evaluator rather than calculating the costs for CIGS before entering them. For D8 press Alt+E and enter **2*1.52** – the correct price will be entered in the cell. Fill in the rest of the data for row 8 in a similar way.

Once you've completed the row you're ready to enter the formulae. These can be made up of a combination of cell references such as B9, figures, and arithmetic operators such as + or –. Let's enter the formula into K3 first. Move the cursor there, press Alt+F and enter:

C3+D3+E3+F3+G3+H3+I3.

When you press Return the formula is first checked for syntax, and if an error is found the text cursor is moved to the position the error was detected ready for editing. If the formula is okay it is accepted. Notice that it's the *result* of the formula that appears – the formula itself is shown in the status area along with the word Formula.

Next comes K4 which is similar to K3 except that all references to row 3 must be changed to row 4. This is called *relative* duplication and differs from *absolute* which repeats the cell exactly as the original.

With the cursor on K3 press Copy followed by **S** to duplicate the single cell. Move the cursor to K4 and press **R** to relatively copy the cell. Move the cursor to K5 and again press R and repeat the process until all the formulae down to K8 are entered. Notice that while you're in the copy mode the spreadsheet is not updated and formulae are

indicated by the word *Functi* in the cell.

Now move to L3, press Alt+F and enter the formula **K3/7**. Relatively copy the single cell down the column in the same way as you did for column L.

The next task is to enter the formulae along row 10. Again these are totals, but there is an easier way to enter C3+C4+C5+C6+C7+C8 so let's use it here. Press Alt+F and enter:

SUM(C3:C8)

All you have to do now is relatively copy that formula across row 10 to L10 but leave out J10 and the spreadsheet is complete. It's a good idea to do another instant save at this point.

Even though we've finished entering the details there are still improvements we can make before we present our final spreadsheet. Columns B and J are only there to leave blank spaces so let's make them narrower. Move the cursor to any cell in column B and press Alt+W. Use the left arrow key to make the column four characters wide, press Return and repeat the process on column J.

The spreadsheet would look better if we put some form of title on it. Let's write "Household Expenses, w/c 29/5" across the bottom. First we need to add some rows to make room so press Exit, select Alter spreadsheet and change the number of rows to 12. Press Exit and select Edit spreadsheet to return to your spreadsheet.

Move the cursor to A12 and you're ready to enter the title which is too long to fit in one cell so we'll use the string function. This allows text longer than the width of the current column to overflow into the cells on the right. Press Alt+S, enter the title and you'll notice that it fills as many cells across the row as necessary.

The spreadsheet is capable of making decisions based on logical expressions and mathematical functions. Let's use this feature to print a warning if our cigarette expenditure together with our beer exceeds that of food.

To do this we must first insert a new row to accommodate the warning – in fact we'll add two for legibility. Position the cursor anywhere on row 9 and press f8. You'll see Insert row displayed in the status area followed by an updating message as the information ripples through the spreadsheet and row 10 becomes row 11. Repeat the process to add another row.

Put the word **Warning** in A10 and move the cursor to C10 ready to enter the equivalent of the statement:

IF(CIGS+DRINK) cost more than FOOD, print BEWARE, print OK)

In the words of the spreadsheet this translates to:

IF((C7+C8)>C3,"BEWARE","OK")

Press f5 to enter this as a formula in C10 and immediately you'll see the result – OK – confirming you haven't overspent. Copy the single cell formula relatively across the whole row as before.

Leave copy mode by updating the spreadsheet with f3 and you'll see all the words *Functi* reflect your spending habits.

Instead of referring to a cell by a name like C7 it can be given a tag name of 3 to 13 alphabetic characters. Upper or lower case letters may be used and to enter, for example, the tag name GrandTotal to cell K10 move the cursor there, press Alt+T and enter the name. You could then put a prediction for next year's sales in K12 by entering the formula such as (GrandTOTal + GrandTOTal * Rise) if Rise is another tagged cell.

The spreadsheet is now complete and ready for printing so press

Exit to return to the Spreadsheet menu. At this point select Save spreadsheet using the highlight bar or by pressing S and you'll be instantly prompted for a filename. Follow the usual procedure for save and then select Print spreadsheet.

From the options displayed select Print whole sheet and after pressing P columns A to I will be printed. Don't worry, J to L will print on the next sheet of paper ready for you to paste to the first sheet.

If you prefer, selecting Condensed or Sideways from the Print style option will print out this spreadsheet without splitting it.

Also, it's always handy to have a printed record of the formulae used throughout the spreadsheet. Selecting Print formulae from the Spreadsheet menu will allow you to do this.

Now, let's look at windows – a useful function allowing you to work on just a section of your spreadsheet, highlight a given area for emphasis in a printout, or save some data for use in the Graphics module.

In our spreadsheet some of the columns have a *BEWARE* warning message as the output. We'll create a window of these columns so that they can be emphasised in printouts. Start by pressing Grid to make sure the cursor is at A1 then press Page to select window 1. All that will be on the screen is cell A1 so press the down arrow to cycle through the cells until you find the data title *Warning* at A10.

This will help you locate the BEWARE columns so press the right arrow until you see the BEWARE comment at D10. If you then press f6 followed by Return that column will be included in your window. Continue moving the cursor right to H10 and press Return again to include that column. Press the spacebar to exit the Include Column function.

You now need to include the rows, so press the down arrow until you are on row 12, press f8 to enter the Include Row mode and press Return to include row 12. Move the cursor up and press Return to include row 11 and repeat this for each row up to row 1. Press the spacebar to exit.

You now have a window defined and to see one of its uses print out your spreadsheet, changing the Hi-light window option on the Print menu to ON. Your window will be output in bold.

Graphics windows are created in a similar way but there are certain rules to remember. When you store data for graphics you must include the following in your window:

- A name for each data item
- A title for each data set

Let's modify the window we've already created to fit these rules. Select window 1 and press Grid to ensure the cursor is at the top of the first column. Press f6 then press Return and keep moving the cursor down and pressing Return until all the cells are included. Press the spacebar to finish.

We only want rows 1 to 8 and must now exclude rows 9 to 19 from the window. Move the cursor down to that row and press Cut followed by R for Row, and Return to confirm. Move the cursor down again and press Return again and repeat this action until all unwanted rows have been excluded. Press the spacebar to exit the Delete Row mode.

The window you've now defined shows the style that graphics data is saved in: Each data item has a name, given in column A, and each data set has a title, in our case Days of the Week.

Exit to the main menu, select Load/Save and from the menu that will be displayed choose Save graphics data. The next menu allows you to select which window you wish to save – in our case Window 1 – and how the data sets are represented. For our example this needs

altering, so change Data sets are to COLUMNS and then press S for Save.

You are then presented with the Graphics data menu where you select which data sets you want to save. Move on to any data set and press Return and an S will appear to the right of the set's name. Move down and press Return on SAT too.

Now press S to Save and follow the usual procedure, but note that the file extension is .GRA for graphics data.

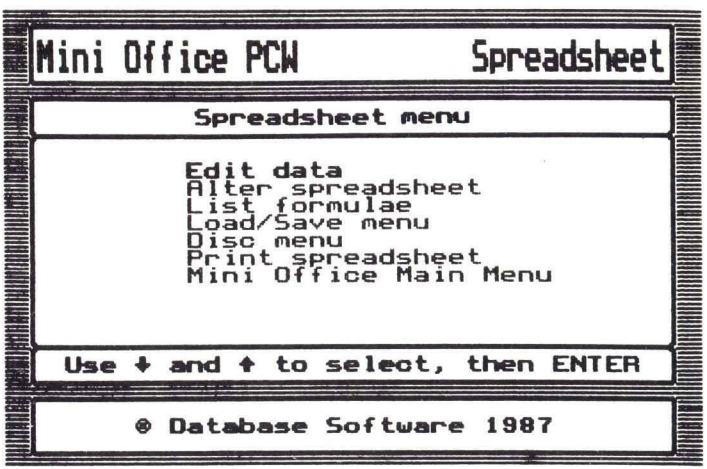
If you've followed this you're well on your way to creating useful, powerful spreadsheets. Just in case you've experienced any difficulty putting this sample together there's a copy of the file called EXPENSES.SPR on your Mini Office Professional discs.

Finally, there's a powerful feature that experienced spreadsheet users will find useful – the facility to be able to have look-up tables in the spreadsheet. The function CELL(Col,row) allows cells to be accessed anywhere on the spreadsheet and is of particular importance for referencing cells within tables.

For example, if a cell contains the formula CELL(4,5) it will show the same value as D5. In this form the formula is of no practical use – we could have used D5 as the formula – but if expressions are used within the brackets different values can be accessed. So, CELL(B1+2,rate) will contain the same result as before if B1 contains 2 and the cell tagged *rate* is 5.

Rather than working relative to the top-left corner of the spreadsheet, it is possible to work relative to any cell – usually the top-left of a look-up table. To do this just use the cell reference you want to work relative to followed by & instead of the word CELL. For instance, DF32&(D2+3,2*Rate) gets the value of cell D2+3 to the right, and 2*Rate down from DF32.

To show you an example of how to use input tables, output tables and cell references, a file – TABLE.SPR – is included on side A of disc 2.



The menu

ON entry to the module you'll be presented with the Spreadsheet menu which lists the various options. Let's look at these in detail.

Edit data

SELECTING this option immediately allows you to start entering information into cells or editing their contents. One of the cells on the screen will be clearly highlighted with a bar cursor in reverse video. This is the "active" cell, waiting to receive data, labels or formulae.

Only one cell is active at any time, and its contents are shown in the status area above the main spreadsheet grid.

Moving between cells

THE cursor can be moved from cell to cell using the following key combinations:

Arrow	Moves one cell in chosen direction.
Arrow+Alt	Moves to the next cell in the current window.
Arrow+Shift+Alt	Moves 10 cells in chosen direction.
Arrow+Extra	Moves to the next non-blank cell. If all cells in that direction are blank the cursor doesn't move.
Arrow+Shift	As Arrow but scrolls the spreadsheet.
Grid	Homes the cursor (top-left cell of current window).
Grid+Alt	Moves to the bottom-left cell.
Return	Providing 'auto-cursor' is enabled, moves one cell in the chosen direction after entering data.
Para	Moves to the bottom entry in the current column.
Unit	Moves to the top of the current column.
Eol	Moves to the last cell in the current row.
Line	Moves to the first cell in the current row.

The Stop and Can keys abort the current command, displaying STOP in the status area. Continue by moving the cursor or executing any other command. The Exit key aborts and returns you to the Spreadsheet menu.

Commands

HERE is a complete list of all the commands available within the spreadsheet. To prevent confusion with text entry, all alphabet keys are use in conjunction with either **Alt** or **Extra**.

A	**A**utomatic cursor mode. To increase speed of use the cursor will enter the data then move in a chosen direction when Return is pressed. The direction is indicated at the top of the screen.
B	**B**ars further data entry to all cells in the current row, locking them against accidental damage.
C	Enters text **C**entered within the cell.
D	Changes number of **D**ecimal places displayed (0-4) in the current column. Cursor right increases, cursor left decreases.
E	**E**valuates the next formula entered immediately, and stores the result in the active cell. The usable operators and functions are shown on the next three pages.
F	Allows **F**ormulae to be placed in the active cell. You can also use f5.
G	**G**oes directly to a cell specified either by normal cell reference or by tag name.
I	**I**mmediately saves the spreadsheet in its current state.
J	Changes the **J**ustification of the active cell.
K	Toggles cell lock on and off.
L	Enters text justified to **L**eft.
M	Unlocks a row.
N	Unlocks a column.
O	Removes cell tag name.

R	Enters text justified to **R**ight.
S	Enters overflow **S**tring.
T	Allows you to **T**ag (label) the current cell with a name between 3 and 13 characters in length.
U	Toggles auto-**U**pdate off and on. When off, data entries will not be reflected immediately throughout the spreadsheet.
V	Locks a column.
W	Adjusts column **W**idth. Cursor right to increase, cursor left to decrease.
X	Permits single cells (5-20) to be duplicated.
Y	Changes justification of all text cells in column.
Z	**Z**eros all unlocked numeric cells.
f1	Deletes the current cell.
f2	Converts a text cell to a string cell.
f3	Updates the spreadsheet. All updates use multiple passes, and if any result cannot be calculated because of circular references such as **B1=B1+1** a warning message is displayed.
f4	Converts a string cell to a text cell truncating to 20 characters.
f5	Enters formulae (see Alt+F).
f6	Insert/include column – two functions. (1) In ordinary mode it is used to insert a new column at the cursor position. (2) When creating or altering a window (see Page command), with the cursor in position you are prompted 'Include column' at which point pressing Return will make that column part of the window. You can then move to the next column you wish to include and repeat the process.
f7	Edit cell.
f8	Insert/include row. As for f6 but with rows.
Cut	Delete/exclude column/row – two functions. (1) In ordinary mode it deletes the current row or column when followed by **R** or **C**. (2) When altering a window, with the cursor in position pressing Return will exclude the current column/row.
Copy	Permits single cells, rows and columns to be duplicated.
Page	Selects the next window. Use f6 and f8 to add rows/columns and Cut to remove them. Up to seven windows can be set up by selecting the number of the window required and adding rows and columns to it.
Doc	Window off (default).
Relay	Causes all strings to be relayed. You would normally use this feature after deleting a cell that was preventing a string from being displayed to its full length.

Operators and Functions

THESE are used in the calculations on your spreadsheet and you should note that to prevent confusion with cell references, all text entries must be enclosed in quotes.

The following are available for use when entering formulae:

()	Brackets.
+ –	Unary sign such as +1 or –1.
+ –	Add and subtract.
*** /**	Multiply and divide.
↑	Raise to the power of (obtained using §.
< >	Less than, greater than.
<= >=	Less than or equal to, greater than or equal to.
= <>	Equal to, not equal to.
AND	Logical bitwise AND.

OR	Logical bitwise OR.
XOR	Logical bitwise XOR.
NOT()	Logical bitwise NOT of the bracketed expression.
WITH	Text concatenation. For instance: "Hello" WITH "World".
!cell	Ensures the cell is always duplicated absolutely when using the Copy command.
cell&(coffset,roffset)	Allows you to reference one cell using its relative position (offset) to another.
ABS(n)	Absolute value of n.
ACS(n)	Arc cosine of n.
ASN(n)	Arc sine of n.
ATN(n)	Arc tangent of n.
COS(n)	Cosine of n radians.
DEG(n)	Converts from n radians to degrees.
EXP(n)	Exponent of n.
INT(n)	Rounds n to an integer.
LN(n)	Natural logarithm of n.
LOG(n)	Logarithm of n to base 10.
RAD(n)	Converts from degrees to radians.
SIN(n)	Sine of n radians.
SGN(n)	Sign of n.
SQR(n)	Square root of n.
TAN(n)	Tangent of n radians.
IF(n,exp1,exp2)	If the value of *n* is non zero (true) *exp1* is calculated; if *n* is zero (false) *exp2* is used. The parameter *n* must be numeric but *exp1* and *exp2*, and thus the result, may be text. The command can be nested to any depth. For example: **IF(A4,A8,A9)** or **IF(A4>A6,"Profit",Loss")**
ROW()	Returns the row number of the formula.
COL()	Returns column number of the formula. Note in the last two commands the parentheses are empty.
OLD(cell,start)	If called when the sheet is being updated for the first time, returns the value of ***start***. If the spreadsheet has already been updated with f3, returns the old contents of ***cell***, which must be a cell reference not an expression. For example: **B9=OLD(B9,0)+1** would increase B9 each time f3 is pressed. B9 can be set to its original value by pressing the spacebar.
MEAN(list)	Returns the average of the expressions or blocks of cells in *list*. For instance: **MEAN(b2+3,ABS(V3),B5:C7,57)Table: TableEnd)** where **B5:C7** identifies the opposite corners of a block of cells, and **Table:TableEnd** does the same but using tag names.
MAX(list)	Returns the largest number in the list of expressions and blocks of cells. For example: **MAX(AS4:BU17,BalEndYear-6).**
MIN(list)	Returns the smallest number in the list.

RMAX(list)	Returns the row number of the largest value in the list if that value is found in a block, or zero if found in an expression. Note, a single cell reference in the list is taken to be an expression. For instance: **RMAX(TopTab:BotTab,DD4,100-32/DS1)** would return a row number if the largest was in the block **TopTab:BotTab** but zero if **DD4** or **100-32/DS1** was the largest. Note that if the largest value occurs more than once, the position of the first occurrence is returned.
CMAX(list)	As RMAX but returns the column number or zero for the position of the largest value found.
RMIN(list)	As RMAX but for the first occurrence of the smallest value.
CMIN(list)	As CMAX but for the first occurrence of the smallest value.
RANGE(n,r1, r2,....rz)	If the expression *n* is less than *r1*, zero is returned, else if *n* is less than *r2* 1 is returned, else if *n* is less than *r3* 2 is returned and so on. If *n* is greater than or equal to *rz*, z is returned. For example: **RANGE(Income,17900,20400,25400)** could be used to calculate your tax bracket for use within another formula.
ERROR(cell)	Returns -1 if **cell** is updated with an error.
CELL(col,row)	Returns the value of the cell at **col,row**. This function is of most value when used with CMAX, RMAX, CMIN, or RMIN to provide **row** or **col**.

SUM (C3:C8)

Copy a cell

TO copy a single cell, make the cell which is to be copied active by moving the cursor to it. Press Copy then press **S** and move the cursor to the cell that is to receive the copy, making that active. Then press the appropriate key for the type of copy required.

If the cell to be copied does not contain a formula, only one type of copy is offered – just press **C**.

Formulae however, can be duplicated in two ways – absolutely or relatively. Absolute duplication, using the letter **A**, is straightforward. The formula you want is copied exactly into the required cell with no changes. For example, suppose cell C1 contained the formula **A1+B1**. If this was copied absolutely to cell C2, the value in C2 would be the result of **A1+B1**.

Relative duplication, using the letter **R**, is used when you want the new formula to behave like the copied one but using different cells to supply the figures used in the calculation.

As in our previous example suppose C1 held the formula **A1+B1**. One way of looking at this is that C1 contains the sum of the two cells on its left. Relative duplication preserves this relationship, so that copying the formula in cell C1 into C2 would result in the formula **A2+B2** determining the value in cell C2 rather than **A1+B1** as before. The cells used are different, the relationships the same.

These methods of copying formulae are achieved as follows:

Absolute duplication: Suppose you want to copy the formula in G8 to H8. Put the cursor on G8, press S, move the cursor to H8, and

pressing A results in:

G8=G6*G7/1000

becoming

H8=G6*G7/1000

Relative duplication: Move the cursor to the cell to be copied, press S and then move it to the receiving cell. Now press R and you will find that the formula has changed relatively like this:

G8*G7=G6/1000

becomes

H8=H6*G7/1000

This illustrates movement along a row. You can also move down a column, like this:

G8=G6*G7/1000

becomes

G14=G12*G13/1000

When a relative copy is made, all cell references in the formula are moved by the same amount that the formula is moved, unless the cell reference is preceded by a "!".

After the first copy the spreadsheet is still in copy mode and more duplications of the original can be made. To copy rows or columns press **R** or **C**. When you are not working with a window, the whole row/column is copied.

When using a window, only that part of the row/column within the window is copied. The choice of Absolute or Relative is available, and as with a single-cell copy you can duplicate several times if you wish.

Alter spreadsheet

THIS menu allows you, at any time, to make changes to the format of the spreadsheet – the way it is displayed on the screen – without losing any data. These alterations take effect on the whole spreadsheet, overriding any previous "tailoring" you may have done, so beware. You will be given the following options:

NUMBER OF COLUMNS: Allows you to increase or decrease within the limits.

NUMBER OF ROWS: Allows you to increase or decrease within the limits. Note: In these two options, to prevent accidental loss of data the software won't let you reduce beyond the number already set in Edit mode.

CELL DISPLAY: Gives access to the following sub-menu of options that allow you to set the format for all cells:

Column width: Initialises the width for all cells within the limits shown.

Decimal places: Sets up the number of places for the display of decimal numbers (0-4).

Justification: Cycles through options to set text justification left, right or centre.

Set all cells: Sets ALL cells including existing ones to the format defined in the previous three options.

Line spacing: Sets line spacing to single or double for both display and printing.

Exit menu: Returns you to the Alter spreadsheet menu.

WINDOWS: Gives access to a sub-menu of options that allow you to set the style of window display:
Fixed fields: Selects continuous display of the first column, first row, or both, when scrolling through the rest of the spreadsheet.
Window: Sets the current window number between 1 and 7 or off.
Exit menu: Returns you to the Alter spreadsheet menu.

AUTO UPDATE: Toggles the auto update feature off and on (default). When off use f3 to update.

NEGATIVE VALUES: Toggles the spreadsheet between its two ways of displaying negative numbers. **Sign** displays a simple minus sign (–), while **Brackets** places the number between brackets, often preferred by accountants.

READ NULL CELLS AS: Decides in which of two ways evaluation of formulae deals with a null or blank cell. Reading as **Zero** will use zero in any calculation; reading as **Error** will abandon with an error.

WIPE SPREADSHEET: After confirmation, erases all data and the current structure from memory. Certain hardware settings are preserved.

EXIT: Returns you to the Spreadsheet menu.

Print spreadsheet

WHEN you select this option you will be presented with the following menu:

HEADINGS: Chooses whether or not to include the row and column headings in the printout. You are given the choice of Row, Column, Both or No.

PRINTER TYPE: Allows you to select between the PCW printer or an alternative parallel type.

PRINTER WIDTH: Sets the maximum length of line sent to the printer, measured in characters. This is necessary as printers vary in the number of characters they can fit across a sheet of paper. The default value is 80; the maximum is 135.

PRINT STYLE: Selects the print format by cycling through Draft, NLQ, Condensed and Sideways.

HIGHLIGHT WINDOW: Allows you to select a window to be printed in bold.

PRINT WHOLE SPREADSHEET: Prints the entire spreadsheet. If it is too wide, or too high in sideways mode, to fit across a single sheet, it is printed in sections, each section starting on a new page. Note: The spreadsheet is printed in its current state. If auto update is not on, you will have to update it first using f3.

PRINT WINDOW: Prints the current window.

EXIT: Returns you to the Spreadsheet menu.

Save Graphics data

THIS option allows you to save data from the spreadsheet in a form suitable for the Mini Office Professional Graphics program.

You must first set up one or more windows – called graphics windows – in a special way. The first row and column must contain text cells and a set of up to 20 numeric cells from any row or column can be included.

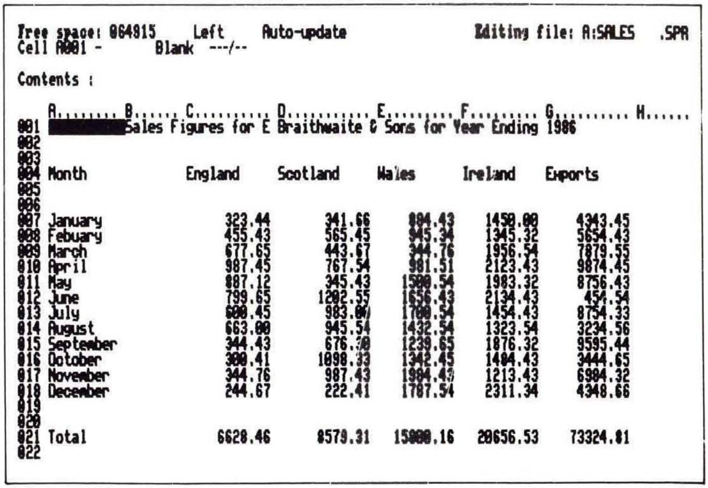
When you select this option you are presented with a further menu as follows:

GRAPHICS WINDOW: Cycles through numbers 1–7 to enable you to select the window required.

DATA SETS ARE: Allows you to indicate whether data sets are rows or columns.

CONTINUE: Moves on to a screen which shows the names of the data sets (the text cells from row 1) and the contents of a highlighted set. Select the set(s) to be saved using the cursor keys and press Return to confirm. Selected sets will be identified with an S. When you have identified all the required sets press ***S*** to be prompted for a filename.

EXIT: Returns you to the Spreadsheet menu.

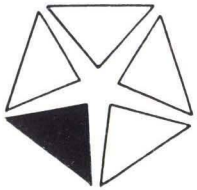


Free space: 064815 Left Auto-update Editing file: A:SALES .SPR
Cell A001 - Blank ---/--

Contents :

	A	B	C	D	E	F	G	H
001		Sales Figures for E Braithwaite & Sons for Year Ending 1986						
002								
003								
004	Month		England	Scotland	Wales	Ireland	Exports	
005								
006								
007	January		323.44	341.66	804.43	1450.00	4343.45	
008	Febuary		455.43	565.45	945.34	1345.32	5654.43	
009	March		677.65	443.67	344.76	1956.54	7879.55	
010	April		987.45	767.54	981.51	2123.43	9874.45	
011	May		087.12	345.43	1500.54	1983.32	8756.43	
012	June		799.65	1202.55	1656.43	2134.43	454.54	
013	July		600.45	983.00	1700.54	1454.43	8754.33	
014	August		663.00	945.54	1432.54	1323.54	3234.56	
015	September		344.43	676.30	1239.65	1876.32	9595.44	
016	October		300.41	1098.33	1342.45	1404.43	3444.65	
017	November		344.76	987.43	1984.43	1213.43	6984.32	
018	December		244.67	222.41	1787.54	2311.34	4348.66	
019								
020								
021	Total		6628.46	8579.31	15000.16	20656.53	73324.81	
022								

A typical finished spreadsheet



Graphics

THE Graphics module of Mini Office Professional provides a flexible, powerful yet simple way to get your computer to display numeric data in an easy-to-understand form. Figures that would look meaningless in themselves can be illustrated and brought to life, quickly and easily.

The Graphics module can be used in two ways: By entering data directly from the keyboard or by loading Spreadsheet data previously stored on disc. Whichever method is used, the Graphics module has to be given the figures it is to illustrate in the form of data sets – lists of associated values, such as the monthly sales for the year or a person's exam marks. Each set (you can have up to 10 within the same data file) may hold up to 20 values and the Graphics module can display up to three of these data sets at any one time.

Getting started

LET'S start by creating a data file that we can use to illustrate how easy it is to produce impressive charts. We'll be entering the data directly from the keyboard, creating four data sets within the same file.

From the Graphics menu select Edit, then choose Edit data to tell the computer that you want to start entering some information. You will immediately be taken to the editing screen where your options are displayed in a window at the bottom. Ignore all the information on the left of the screen – this will be dealt with later.

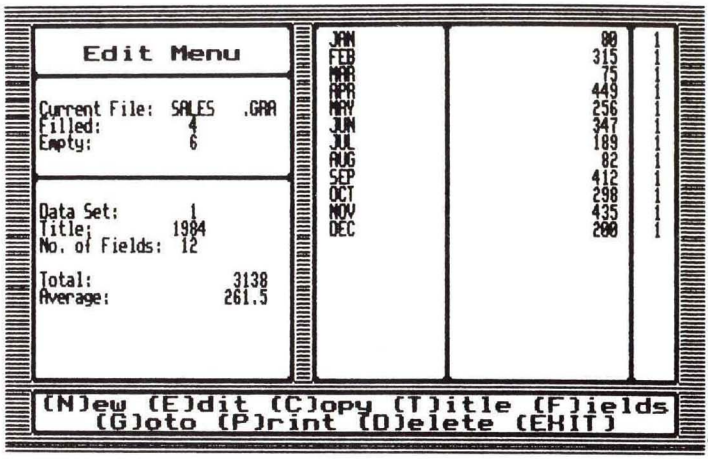
Press **N** to indicate that this is a new data set and at the prompt enter the title 1984. You will then see a highlight bar in position for the first data entry. Type in **JAN** and as you press Return the highlight will move on to the next column. Enter **80** here and after pressing Return the highlight will move on to the final column. The information contained in this column is for use when drawing pie charts and will be

	1984	1985	1986	1987
JAN	80	76	84	67
FEB	315	324	296	301
MAR	75	81	74	76
APR	449	464	431	441
MAY	256	296	241	274
JUN	347	401	361	375
JUL	189	207	191	210
AUG	82	74	63	85
SEP	412	443	406	396
OCT	298	304	287	266
NOV	435	447	406	451
DEC	200	196	214	230

Table I: The data for the demonstration

explained later. For this entry retain the existing entry (a number 1) by pressing Return twice.

You will now find the highlight back in the left-hand column, one row lower. Enter the data for the remaining 11 months of 1984 using the figures shown in Table I. After your last entry for that year your screen should look like the one shown here.



Press Exit to return to the command level of the Edit screen and you're ready to enter the second data set which is for 1985. Press **N** to indicate a new data set and at the prompt enter **1985**. The labels (months) are the same as the set you have already entered and the graphics module allows you to copy them but, first, let's enter the figures. Using the arrow keys to move between fields, enter the costs for 1985 as shown in Table I. You will notice that as you press ↓ after each entry the cursor will be in position ready for you to enter the next. When you have entered the last number, press Exit and you are ready to copy the labels by just pressing C and answering 1 to specify the data set to copy from.

When you've finished repeat the whole process to include the costs for 1986 and 1987 in data sets 3 and 4 then leave the edit command screen and return to the Graphics menu by pressing Exit twice.

Saving data

YOU now have four data sets in memory all belonging to one data file and you can choose up to a maximum of three to be displayed graphically. But before we proceed any further, let's save the data. Select Load/Save and from the next menu select Save all data and save the file in the usual way using the filename, for example, SALES.GRA.

Now let's start on the graphics – drawing a bar graph first of all. Select the Bar chart option from the Graphics menu. The screen will clear and four icons will appear down the right-hand side. Select the second one down that will take you to a sub-menu where you must select the first icon – Data set.

You are going to use three sets so at the first prompt enter **3**. Answer the next three prompts as follows:

1 for the primary set.
2 for the secondary set.
3 for the tertiary set.

Now you have initialised the number of sets and the order in which they are to be plotted, return to the main icon menu by pressing Exit. Select the first icon, the graph will be drawn with your chosen order indicated in the bottom window.

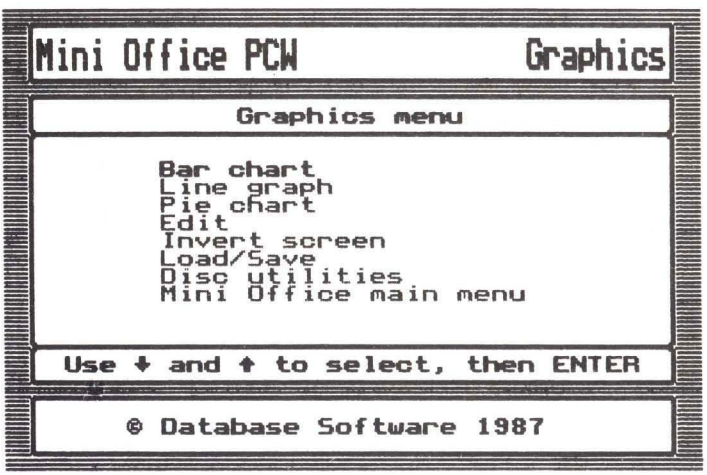
Now let's add some text to your graph. Select the Text icon and you will be presented with five more icons with which you can dictate how your words will appear on the screen and the final printout. These are self explanatory, and the various options available can be viewed by cycling through them using the Return key.

Experiment by changing the bottom four icons to anything you wish then select the Text icon and at the prompt enter your text. Immediately you will see a hover box displayed at the top left corner of the screen.

Using the cursor keys move this to the position you want your text to appear and after pressing Return your words will be displayed.

If you've followed all that, you're well on your way to mastering the graphics module. Try changing the toggles within the sub-menus. You could maybe use only two data sets, or draw a stacked bar graph or a line graph. You could even move on to a pie chart and experiment with grouping features (the right-hand column at data entry), but this will be explained in full detail later.

By the time you've finished you'll appreciate how simple-to-use yet powerful the Graphics module is.



The menu

ON entry to the module, you'll be presented with the Graphics menu which lists the various options. Let's look at these in detail. There are three ways of displaying the data – a bar chart, a line graph or a pie chart.

Bar chart

THIS option takes you to the graph display screen where you will see four icons on the right. They represent:

A BAR CHART: Displays a bar chart, its appearance depending on the criteria set in the bar chart options menu.

BAR CHART OPTIONS: Takes you to a screen with the following five icons to help tailor the final look of your chart:

Data set. Selects the number of sets to be used identifying them by

number or name and indicating the order for plotting. If a bar chart is drawn with more than one set selected a side-by-side or stacked chart will be drawn.

Input the number of data sets you wish to use and the order in which they are to be plotted. The order input will be displayed in the window at the bottom of the screen to remind you of your choice once your entry is complete.

A grid. Toggles a background grid ON and OFF.

A ruler. Switches between auto and manual scaling. If set to auto the program will scale the chart according to the data being drawn. Otherwise you will be asked to input the maximum and minimum values of Y. The maximum value must be greater than or equal to zero, and the minimum value must be less than or equal to zero.

Bar chart. Allows you to toggle between a side-by-side and a stacked bar chart. This setting is reflected in the bar chart icon menu. If only one data set is used the columns will all have the same pattern design, but if you use more sets of data, columns corresponding to the same set will be shaded similarly. Negative values are ignored when drawing a stacked bar chart.

2D. Allows you to toggle between a two-dimensional or three-dimensional display.

TV SET: Takes you to the screen options sub-menu where you select how to deal with the screen display:

A printer. Prints the screen in the format you've defined using the options provided.

To disc. Saves individual screens for later use.

From disc. Loads a graphics screen previously saved to disc so that they can be printed and/or updated using the Text options.

Invert screen. Inverts the screen's foreground and background colours.

Dump toggle. Selects whether the dump will be printed across or down the paper.

TEXT: Allows you to place text anywhere on the screen. Once you have selected the option you are presented with another set of icons as follows:

Text. Accepts text that you enter in the small base window. Once you are satisfied with it, press Return and a hover box will appear at the top-left corner of the screen. This can then be moved around the screen using the arrow keys.

Pressing them with Shift gives faster movement or you can move straight to an extremity of the screen by pressing Control, Alt or Extra in conjunction with the appropriate arrow key. When the text is in the required position press Return and it will be printed on to the graph in the style determined by the other icons on this menu.

Size. Cycles between ordinary, double-width, double-height, and double-height double-width characters.

Shade. Selects between normal, bold and dim text.

Underline. Toggles underline ON and OFF.

Border. Provides various borders to surround your text.

Line graph

AGAIN you'll be presented with four icons which represent:

A LINE GRAPH: Displays a line graph, its appearance depending on the criteria set in the line graph options menu.

LINE GRAPH OPTIONS: Takes you to the line graph options where you can select from the same icons as the bar chart options except for:

A line with points. Toggles ON and OFF, shapes indicating the plotted points.

A dotted line. Toggles ON and OFF. The option only works if two or more data sets are to be drawn against each other. If OFF is selected they will all be drawn as solid lines, but choosing ON allows them to be shown differently.

A line graph. Toggles between a line, a totalled and a cumulative graph. A totalled graph represents the totals of the selected data sets while a cumulative graph displays an accumulated sum of the individual values in the primary data set. So if this set comprises the three values 3, 6 and 8, the values represented on the graph are 3, 9 (3+6), and 17 (3+6+8).

TV SET: For full details see Bar chart.

TEXT: For full details see Bar chart.

Pie chart

HERE you are again presented with four icons depicting:

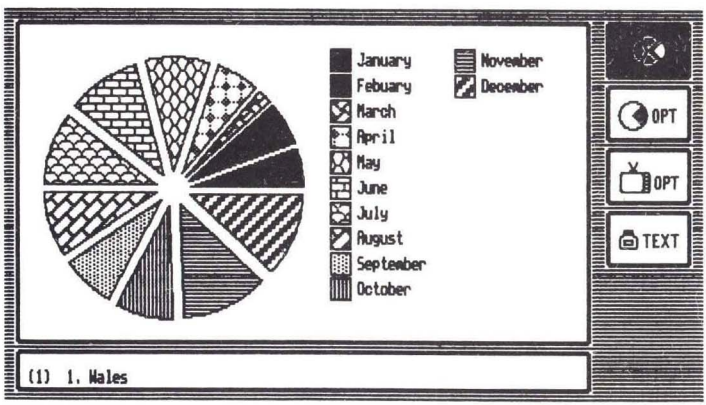
A PIE CHART: Displays a pie chart, its appearance depending on the criteria set in the pie chart options sub-menu.

PIE CHART OPTIONS: Takes you to the pie chart options with the following five icons to help tailor the final look of your pie chart:

Data set. Selects by number or name which data set to use.

+ve/-ve. Toggles between using positive or negative values only. If there is no data conforming to the chosen sign, an appropriate error is displayed.

A pie chart. Cycles between four different types of pie chart. The first is the normal whole pie with no exploded segments. The second is a pie chart with all segments exploded out from the centre. The third is a segmented pie with facilities either to explode each segment or draw it in its normal position. The final one is the group pie which draws segments exploded and also grouped according to the group numbers defined in Edit mode. All segments with the same group number will be drawn together.



Fill type. Changes the way the pie is patterned using three settings – Normal, Select and Defined. Normal will pattern the pie chart using the default settings and give you no control over the output. Select allows you to choose which patterns are to be used for each segment from a table drawn up in the base window. Use the left and right arrow keys to choose from the patterns available and press Return to select it. The segment will be filled with pattern of your choice. In addition, a marker will be set over the top of the pattern

you have chosen, but doesn't stop you from repeating it. If you want to use these patterns again, select Defined which will save you the time of inputting the same patterns again.

Key. Toggles the pie chart key ON and OFF.

TV SET: For full details see Bar chart.

TEXT: For full details see Bar chart.

Editing data

SELECTING Edit menu produces the following sub-menu:

EDIT: Takes you to the main input screen where data can be entered or amended directly from the keyboard.

The detail on the left-hand side of the screen provides all the information you need regarding the current data file in memory, and the data set on view. The three columns on the right are designed to contain from left to right – the field names, the data, and the group number for use in a grouped pie chart.

The options available at this stage, with the exception of Exit, are selected by their initial letters in upper or lower case:

New: Creates a new data set. After prompting you for a title you are automatically moved into the editing area ready for input.

Edit: Allows you to edit the data set currently being viewed. The item under review is indicated by the highlight which can be moved using the cursor keys. Once the highlight is on the required item there are several further options open to you.

Pressing any acceptable key will commence edit – pressing Cut will clear the field first. Once you have typed in the field, pressing Return will commit it to memory and move to next one, while the up or down arrow keys will enter the field and move to the one immediately above or below. If you have made an error pressing Can will return the previous value and leave you free to edit it.

When editing you can use any of the keys listed in the general notes (see later). The title of the data set can be up to 12 characters in length, and the data itself can involve any of the maths functions listed in the general notes.

The group number is for use with the pie chart display and can be an integer in the range 1 to 20.

To leave Edit use the Exit or Stop key.

Copy: Duplicates titles from another data set, specified by number or name, to the set currently on view. Because data sets with different field titles can not be plotted against each other, this function is ideal for remedying the problem. It also saves time when entering duplicate data.

Title: Changes the title of the current data set.

Fields: Alters the number of fields (0 to 20) to be used on a graph/chart. Only the ones to be used will be visible on screen, and any data already in memory will be retained.

Goto: Displays a data set specified by number or name.

Print: Prints the data set currently on view.

Delete: Deletes the data set currently on view.

Exit: Returns you to the main Graphics menu.

PRINT ALL DATA: Prints out all data sets.

PRINT SET(S) OF DATA: Prints sets specified by you. Following the promt for the data set(s) to print indicate a range of sets using the # character, or a combination of single items using the comma or + character, as in the following examples.

6	data set 6
5+7,2,8	data sets 2,5,7 and 8
1#4	data sets 1 to 4 inclusive

PRINTER TYPE: Toggles between PCW and Epson to allow you to use the printer supplied with your micro or an Epson-compatible one.
DELETE ALL DATA: Clears memory of all data sets and resets internal variables such as the current filename.
DELETE SET(S) OF DATA: Deletes specified sets.
EXIT: Returns you to the Graphics menu.

Invert screen

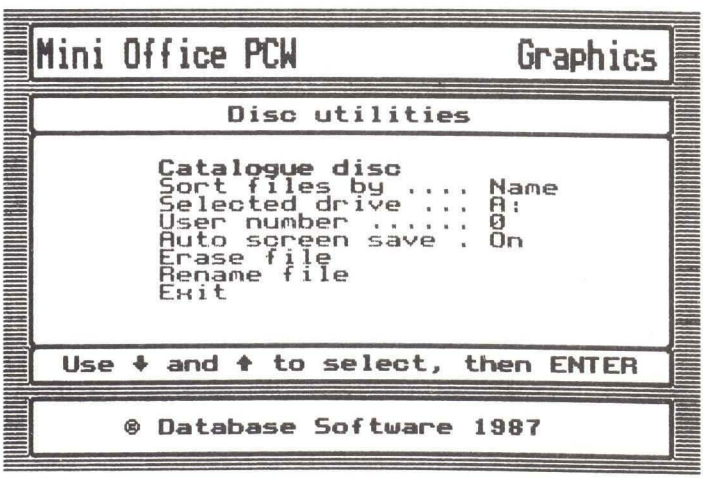
THIS option toggles the screen's foreground and background colours.

Loading and saving data

THE Load/Save menu allows you to store and recover data for future use.
LOAD DATA: Loads a file from the current or specified drive destroying any data in memory. The disc is automatically catalogued and a list of all legal files (filetype .GRA) is displayed. You then load the file in the manner described in the introduction.
APPEND DATA: Loads a file from the current or specified drive and leaves the data in memory intact. Selecting a file is done in exactly the same way as in the Load data option. If there is insufficient room for the file an error will be reported. Unlike the Load option the filename is not remembered for future saving.
SAVE ALL DATA: Saves all data in memory to the current drive. Selecting a filename is done in exactly the same way as in Load data and the input filename will be remembered and offered if and when another attempt is made to save the file.
SAVE SET(S) OF DATA: Saves to the current drive your specified data set(s). You select a filename using the same method as in Load data, after which you specify the set(s) to save in the same way as the Print set(s) of data option using #, + or a comma.
EXIT: Returns you to the Graphics menu

Disc utilities

these options are common to all the programs and are fully described in the introduction. The graphics module contains one further option:
AUTOSCREEN SAVE: Toggles between ON and OFF to allow you to choose between having the current graph saved to ram disc as you return to the Graphics menu or just to quickly go there.



Key functions

DURING data input the following keys are in operation and carry out the functions indicated:

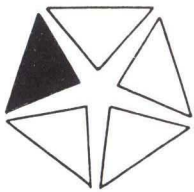
Can	Edit the string again.
Cut	Clear input buffer.
↑	Either move to last character in the buffer, or in Edit mode move up a field.
↓	Either move to the first character in the buffer or in Edit mode move down a field.
←	Move to previous character.
→	Move to next character.
Del→	Delete forwards.
Del←	Delete backwards.

Maths functions

ON inputs involving numbers you may also equate using the following standard mathematical functions:

+	Add.
–	Subtract.
*	Multiply.
/	Divide.
↑	Powers (obtained using §).
ABS(n)	Absolute value of n.
COS(n)	Cosine of n radians.
SIN(n)	Sine of n radians.
TAN(n)	Tangent of n radians.
LOG(n)	Logarithm of n to base 10.
LN(n)	Natural logarithmof n.
SQR(n)	Square root of n.
RAD(n)	Converts from degrees to radians.
DEG(n)	Converts from radians to degrees.
PI	π
EXP(n)	Exponent of n.
INT(n)	Rounds n to an integer

Any numeric input greater than 2E9 (2000 million) will report an error, because such would be the case when attempting to reproduce the data in graphical form.



Comms

COMMUNICATION between two computers is only possible if they share a common protocol. This is simply a way of interpreting the electronic signals passing between the machines. If they both share the same protocols they can talk to each other in a common language. However, the continuing rapid growth of communications networks has resulted in an ever-growing number of different protocols, each involving a variety of characteristics.

Fortunately the Mini Office Professional Communications module takes all the hard work out of linking your computer to another by offering, on a menu, the most commonly used protocols. All that is needed is to select the link required and Mini Office Professional will organise the rest. You don't need to know anything about what the software is doing, or the details of the link itself.

For those who wish to join systems which use non-standard protocols there is an option which enables individual characteristics to be entered. Consequently Mini Office Professional can be used to connect your computer to virtually any other computer capable of communications.

The most common method of connecting two computers is via the telephone. To do this you will need a modem – a device which converts signals from a computer into a form which can be carried over the telephone system.

Mini Office Professional can be used with any serial modem connected to the Amstrad interface unit. Using this your PCW can also be connected directly to another computer via a wire link. Such a cable system will work best over short distances, so avoid runs of more than about 15 metres.

Getting started

THE best way to get the feel for the Communications package is to go step by step through some examples.

We'll have to assume you've set up your modem and micro correctly and we'll demonstrate how easy it is to use your hardware to access online databases such as MicroLink and Prestel. We end by showing you how to achieve a simple keyboard chat between two adjacent micros.

To communicate with any remote terminal you must first of all match its protocols. Fortunately Mini Office Professional has already done all the hard work for you if you want to access MicroLink or Prestel by having these settings initialised and readily available on the Preset systems menu.

Connecting to MicroLink

MICROLINK has a special demonstration mailbox that will give you an idea of some of the many useful and enjoyable features available to subscribers. There is no limit to the amount of time you can be on line, so feel free to explore at your leisure.

From the main Communications menu select Preset systems and from the subsequent sub-menu choose MicroLink 1200/75. When you press Return, after confirmation of your choice of service, you will automatically go back to the Communications menu.

From there select Communicate and you will go immediately to the communications screen where all you will see is a flashing cursor.

You are now ready to connect to MicroLink. Depending on your type of modem, manually dial or autodial its 1200/75 number which is 01-583 1275. On receipt of the audible carrier signal – a high-pitched whistle – press any necessary modem connect button.

You will be greeted by the message:

> *Telecom Gold Network: For assistance type 'HELP LOGIN' at the prompt 'PAD>'*
>
> *This is Dial-up Pad 6 line 9 speed 1200*
>
> *PAD>*

You can now commence the logging on sequence. Enter:

CALL 72

and you will receive the response:

> **** Call connected*
>
> *Welcome to Telecom Gold's System 72*
> *Please Sign on*

At this point you must enter your personal mailbox identification number and password. For the purpose of the demonstration the id number is MAG111 so enter:

ID MAG111

including the space. At the *Password* prompt enter:

DATABASE

and that's it – you're in.

Once you've logged on successfully you will be presented with an interactive demonstration of many of MicroLink's facilities.

If you eventually subscribe to MicroLink you be able to log on using a local call, and you will have your own personal mailbox and password.

Connecting to Prestel

THERE is also a special demonstration mailbox on Prestel that we can use for our tutorial – you don't have to be a subscriber to use it. From the Preset systems menu select Prestel (Viewdata) 1200/75.

You will be presented with the blank communications screen and you then manually or auto-dial your local Prestel telephone number. You will hear the audible carrier (a shrill whistle down the line). Depen-

ding on your modem, press the 'Modem connect' or 'Data' button. (With some modems you need take no action yourself as the connection is made automatically.) You will now see the Prestel opening screen, which will prompt you for your identification number. Type in **4444444444**. At the next prompt, for your password, enter **4444**.

You will now be free to view the demonstration pages by following the on-screen prompts. At the end of the sequence type ***90** followed by Return to log off.

Connecting two micros

DIRECT communication between two micros doesn't involve the use of a modem. It does however need a lead with the correct plug on the opposite end to the PCW's interface to access the target machine. For this reason we will not describe communications with any particular micro because of the many different interfaces possible.

Unfortunately there is little or no standardisation in this area of communications so whichever micro you intend to communicate with, you will either have to make a lead up or buy one.

The protocols required are not specifically catered for in the Preset systems menu so you must configure your terminal to match the other machine, or vice versa.

Select Configure RS232 and from the subsequent sub-menu match the receiving micro's protocols for word length, stop bits and parity. When setting transmit and receive rates make sure that if you're using 1200/75 and the two micros are completely opposite – micro 1 transmitting at 1200 the other receiving at 1200, micro 1 receiving at 75 and the other transmitting at 75. Using 1200/1200 or 300/300 these would match automatically provided both micros select the same speed.

Select Communicate from the Communications menu and on the empty screen that appears type in some text. This should be seen on the other terminal. If you want to see it on yours press **Unit** to turn the local echo on.

The menu

WHEN you load the module you are presented with the communications menu which lists the various options. Let us look at these in turn and examine them in detail.

Communicate

THIS option allows two-way communication between two computers

using either the preset system protocols or those set up from the Configure RS232 menu. While you are communicating, some of the menu options can be obtained by a single key-press without actually selecting the menu:

Line or **Eol**	Toggle auto line feed.
Exch or **Find**	Transmit file.
Relay	Receive file.
Word or **Char**	Toggle Xon/Xoff.
Doc	Buffer on/off.
Page	Transmit buffer.
Unit or **Para**	Local echo on/off.
Can	Send Break.
Grid or **2**	Split screen mode on/off.
Copy	Print the screen (Viewdata only).
Paste	Load screen (Viewdata only).
Cut	Save screen (Viewdata only).

Function keys that have been previously set up using the Define keys option can also be used as you communicate, and you return to the Communications menu by pressing Exit.

Preset systems

HERE you are provided with a sub-menu of options to access the following systems with protocols ready set:

MicroLink/Gold 1200/1200
MicroLink/Gold 1200/75
MicroLink/Gold 300/300
Prestel (Viewdata) 1200/75

Select the appropriate service and you will automatically return to the Communications menu with the RS232 configured and you are given confirmation of your choice ready to select Communicate.

Configure RS232

THIS option provides a sub-menu where you can configure your terminal using the following options:

RECEIVE RATE: Cycles through the alternative baud rates 9600, 4800, 2400, 1200, 300 and 75.
TRANSMIT RATE: Allows the alternative baud rates as above.
WORD LENGTH: Toggles between 7 and 8-bit words.
PARITY: Provides the alternatives Even, Odd and None. Leave on the default setting (None) unless you know the receiving terminal's setting.
STOP BITS: Toggles between 1 and 2.
SCREEN FORMAT: Provides the alternatives Dumb TTY, VT52 and Viewdata indicating what type of terminal your PCW is simulating.
XON/XOFF: Defaults to ON, but in the rare circumstances this facility is not needed, it can be toggled to OFF.
LOAD CONFIGURATION: Restores a previously saved protocol file using the standard methods adopted for the Mini Office Professional package.
SAVE CONFIGURATION: Saves the currently defined protocol options to disc using the standard methods.
EXIT: Returns to the Communications menu.

File transfer

YOU are presented with the following sub-menu to facilitate file transfers:

PROTOCOL: Cycles through the four types supported:

Ascii: Data from the buffer, drive A, B or M, is sent as Ascii numbers with no error check.

Expanded Ascii: Specifically so that 7-bit systems can handle 8-bit information each character is transmitted as a pair of Ascii numbers. This also has no error check.

Xmodem: Allows error-checked file transfers with another computer that supports the same protocol.

Kermit: Allows even more comprehensive error-checked file transfers.

TRANSMIT FILE: Transmits a file from disc using the protocols chosen above. You will first be prompted for the filename. Files can be transmitted from a memory buffer by pressing Exch or Final while you are in Communicate mode.

RECEIVE FILE: Receives a file to the currently selected buffer.

EXIT: Returns you to the Communications menu.

Buffer control

THIS contains a sub-menu of facilities that will allow you to make far better use of your communications link in Dumb TTY and VT52 modes (not Viewdata). Correct use will save time when transmitting files, and so save a considerable amount in telephone charges. The options are:

BUFFER: Cycles between the alternatives Disc, Memory and Off.

LOAD BUFFER: Loads a file into memory for subsequent uploading to the distant computer.

SAVE BUFFER: Saves the entire contents of the memory buffer to disc.

PRINT BUFFER: Allows you to print the contents of a memory buffer.

TRANSMIT BUFFER: Takes you to the Communicate mode and sends the contents of the buffer in Ascii format to the remote computer. Pressing Exit stops data being sent and you are left in Communicate mode when the transmission is complete or aborted. You cannot transmit a buffer while you are in the Viewdata mode.

CLEAR BUFFER: Completely clears the contents of the memory buffer.

VIEW BUFFER: Allows you to examine the contents of the memory buffer on the screen.

EXIT: Returns you after confirmation, to the Communications main menu.

Screen options

THIS option provides a sub-menu of facilities for you to dictate how the data is dealt with by the screen in Dumb TTY and VT52 modes (not Viewdata):

LOCAL ECHO: A useful feature of many online systems is that they are able to repeat every character sent to them so you can see and check the text as it returns. If you can't see anything while you're typing toggle this option ON.

AUTO LINE FEED: Some online systems require you to send a line-feed character after each carriage return, particularly US databases. The default is OFF and Return toggles between the two states. Incoming line-feeds are automatically catered for.

ENTRY WINDOW: When communicating directly via the chat mode on MicroLink or other online systems, it is often desirable to start to prepare a reply while the other computer is still sending text. Selecting ON provides a text window at the bottom of the screen in which you can use all the normal editing keys to prepare your text. Pressing Return will send the prepared lines to the remote computer.

STATUS LINE: Gives the option of displaying the current protocols at the bottom of the screen in chat mode. The information displayed represents: Emulation type, Receive baud rate, Transmit baud rate, Number of bits per word, Parity, Xon on/off.

CURSOR TYPE: Allows you to select the kind of cursor you prefer. Cycles between Blink, Block, Line and None.
INVERT SCREEN: Toggles between the two alternatives.
EXIT: Returns you to the Communications menu.

Function keys

THE function keys f1 to f8 may be redefined with a string of up to 19 characters. They are useful for holding logon sequences and other frequently used text or numbers. This option provides a sub-menu to help you make the best use of this facility.

DEFINE KEYS: Allows you to allocate characters to any of the eight function keys. Function key definitions can be up to 19 characters long and control codes can be inserted by preceeding them with a bar character obtained by pressing Extra+Full stop. For example, Return can be included at the end of a definition by entering | M.
LOAD DEFINITIONS: Loads key definitions saved previously to disc.
SAVE DEFINITIONS: Saves the current key definitions to disc.
EXIT: Returns you to the Communications menu.

Disc utilities

THESE options are common to all the programs and are fully described in the introduction to this manual.

Mail Merging

THERE are four stages to follow when you create mail merge documents in the Word Processor:

- Assign your strings.
- Edit your document using the appropriate assigned strings.
- Load the file you saved using the Mail Merge save option in the Database.
- Adjust the document in Paged edit mode to get the desired finished document.

Assigning Strings

FROM the Word Processor main menu select Database and from the subsequent menu select Assign strings. There are two types to choose from – strings of text or database strings. The former allows you to enter some text to be reproduced in the document – such as a date – while the latter allows you to access your database fields.

To enter a string, first select the required string number from the ones displayed on the left of the screen using the up and down arrow keys. For a string of text press S then type it in finishing by pressing Return or an up or down arrow key. You can edit an existing string and if you make a mistake pressing Exit or Can before you have finished will return the original.

For a database string, press D followed by the field number and press Return. Then enter the length of the string which can range from 0 to 255. A value of zero causes the room allocated for the specified field in Paged edit, Preview and Printer to equal the actual field length for the current record. In normal edit this value causes no space to be allocated so there may be a difference between the normal and paged edit displays.

Other values allocate that amount of space regardless of the actual length of the field so the field is padded out with spaces. When you are writing standard letters it is often useful to pre-define the length of all database strings used so that all the letters look the same. Another way to do this is to end each line containing a string with Return and use a length of zero.

A string or a database string is treated as one word even though it can be many words. This means that if you use one near the end of a line it will all appear on the next line if there is insufficient room for it on the present one.

Editing the document

TYPE your text in to the Word Processor in the usual way. Wherever

you want a string to appear press Alt+D followed by Alt and the appropriate string number. On the edit screen a dim D and number shows where it will appear.

Loading database files

SELECT Database from the Word Processor main menu and from the subsequent menu select Load database. You should note that if a Word Processor file or setup is loaded or saved later, the Database file will need reloading.

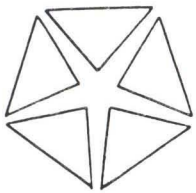
Once it is loaded, Preview and Printer will show the actual contents of each field as appropriate but, during editing, only the first record is used to show the format that results.

During printing, the number of copies entered on the Set up printer menu refers to how many printouts of each record you will get and the required number of copies for the first record are printed before going on to the second and so on.

You should note that the disc containing the database file should be in the drive during printing, as only part of the database is loaded at any time, as it is required.

Adjusting the document

IN the Edit mode all you will see is dim Ds and numbers. However, using F3 to give you a preview window allows you to see what will actually be printed out and change the document to your required format.



Tutorial files summary

THE following example files are included on disc 2, Side A.

Word Processor	**Sample document**	DEMO.DOC
	Printer Set Up options	MERGE.PRX
	Database Set Up options	MERGE.DBX
	Database file	MEMBERS.MRG
Database	**Sample structure**	STRUCT.DBS
	Sample records	MEMBERS.DBS
Spreadsheet	**Example spreadsheet**	EXPENSES.SPR
	Example of Table input and output	TABLE.SPR
Graphics	**Example data sets**	SALES.GRA

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A new and incredibly low-cost optical scanner which is simply attached to the PCW 8256/8512 printer head.

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- ☐ MasterPaint (£19.95)*
- ☐ MasterPack (£79.95)*

Add £2 Europe (inc. Eire), £5 overseas

- ☐ Cheque enclosed payable to Database Software
- ☐ Please debit my Access/Visa card

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry Date_____

Runs on the Amstrad PCW8256 and 8512 only

Name_____

Address_____

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Signed_____

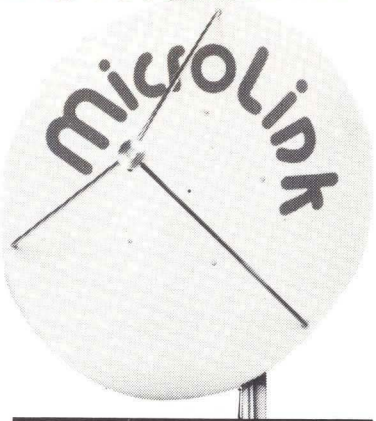
SEND TO: Database Electronics, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

Telephone orders: 0625 879940
Orders by Prestel: Key *89 then 614568383
MicroLink/Telecom Gold: 72:MAG001

Allow 28 days for delivery

A456

Joining the communications revolution has never been easier ...or cheaper



All you need to link your Amstrad PCW to the exciting world outside is a phone, an RS232 interface – and the MicroLink Communications Pack.

Inside the box you'll find a powerful modem, a PCW lead and the Communications and Word Processor modules from Mini Office Professional. The only extras you require are a telephone and a PCW interface. *(If you haven't got one already we also offer an interface at a very special price.)*

You'll also be given a unique invitation to join MicroLink, with FREE registration and telex validation (normally costing £15), and a month's FREE* connect-time to your MicroLink/Telecom Gold mailbox. So you can find out for yourself what MicroLink is all about without it costing you another penny.

Of course you can also use your MicroLink modem and software to access thousands of other services all over the world, from Britain's Prestel/Micronet to giant databases in the USA. Plus innumerable privately-operated bulletin boards covering a vast range of subjects.

To take advantage of this very special package deal simply complete and mail the coupon below.

** This exclusive offer relates to connect time only and does not include telephone, any possible PSS charges or surcharged services.*

There are two options you can choose from:

MicroLink dual-speed modem:
This stylish modem works at two speeds – 1200/75 and 300/300. Fully BABT approved, it satisfies most users' requirements for a modest price.

£99 Inc. VAT

MicroLink multi-speed modem:
This offers the additional speed of 1200/1200 full duplex for users who want to enjoy super-fast two-way transmission. Plus many extra features, including powerful auto-dial and auto-answer facilities.

£169 Inc. VAT

A remarkable price breakthrough for what is a really exceptional product.

ORDER FORM

Please supply:

- ☐ MicroLink dual-speed modem, software and PCW lead for £99
- ☐ MicroLink multi-speed modem, software and PCW lead for £169
- ☐ RS232 interface for £39
- ☐ FREE registration and telex validation, plus FREE one month's connect time to MicroLink
  or
- ☐ I am already a subscriber to MicroLink

If you would like to join MicroLink and already have a modem and software simply tick the box alongside. You will then be sent full details of how to join. ☐

- ☐ Cheque enclosed payable to MicroLink Communications Ltd.
- ☐ Please debit my Access/Visa card number:

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ *Expiry Date* ☐☐/☐☐

Name _____

Address _____

_____

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Daytime phone _____

Signature _____

Send to: **MicroLink Communications Ltd, FREEPOST, Macclesfield, Cheshire SK10 4YB.**

Telephone orders: **0625 879940** **A457**
Orders by Prestel: **Key *89, then 614568383**
Via MicroLink/Telecom Gold: **72:MAG001**

Allow 28 days for delivery

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It's here – the most exciting add-on for your PCW

Sir Clive Sinclair's Z88 is the world's first truly portable, truly full-facility computer. And it makes an ideal companion for your PCW. We even supply a special lead to enable you to transfer files between the two computers!

SPECIAL OFFER

Order on the form below and we'll also send you a FREE PCW lead, plus a FREE disc of games and utilities you can transfer direct from your PCW to the Z88.

£249
Plus VAT

What the Z88 offers

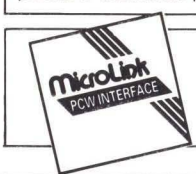
● 32k of ram built in, which is easily expandable to 416k. ● New supertwist LCD screen for sharp, clear viewing. ● Built-in word processor, spreadsheet, database, calculator, diary, calendar, comms, real-time clock and alarm – all included in rom. ● Runs on four AA batteries, or use a mains adaptor. ● Printer editor to drive a wide range of printers. ● Detailed 218-page manual.

Use it on the move!

Because it weighs less than a bag of sugar, you'll find it's an ideal travelling companion. Word process your letters, memos or reports while on the move – then when you're back home or in the office transfer your files direct to your PCW – it's all done in seconds!

Safe storage

Forget discs! Memory is stored in handy solid-state inter-changeble packs measuring 2½in square.
Extra 128k ram packs are also available – see order form below.



You'll need a serial interface to connect the Z88 to your PCW. If you haven't got one we recommend you use the inexpensive MicroLink Interface. This can also be used to link your PCW to a modem. In addition it has a centronics parallel port that allows you to use an alternative dot-matrix or daisywheel printer with your PCW. **£39**

ORDER FORM

Please send me:

- ☐ Z88 for **£286.35** (£249 + VAT).
- ☐ FREE disc and lead for my PCW.
- ☐ MicroLink interface for **£39** (incl. VAT).
- ☐ 128k ram pack for **£49.95** (incl. VAT).

☐ Cheque enclosed payable to Database Electronics.

☐ Please debit my Access/Visa no:

Expiry date _____

Signed _____

Name _____

Address _____

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_____ Postcode _____

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Allow 28 days for delivery

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