INTER-MODE

Reference Manual

ROM-LINK

Computer Concepts

CONTENTS

Thieves will be prosecuted

Copying software is theft by any interpretation of the law. It is illegal to copy INTER-WORD whether in the form of an EPROM or as an image on file. Computer Concepts is willing to offer substantial rewards to anyone providing information which leads to a successful prosecution against any individual, school, company, etc.

INTER-WORD is designed and distributed by Computer Concepts.

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Manual written by Rob Pickering.

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Computer Concepts cannot be held responsible for any loss of data due to the use of INTER-WORD.

IMPORTANT NOTES

The INTER-WORD chip is not just a normal ROM. The device supplied is a 'hybrid' 32K chip. However, as far as the user is concerned, it should be treated as a standard chip, fitting into any normal ROM socket. If the chip will not operate on a non-standard ROM extension board, fit it into one of the sockets on the main computer board.

The small 'carrier board' underneath the chip is an integral part of the device. THE CHIP MUST NEVER BE REMOVED FROM ITS CARRIER. Re-insertion of the chip is not possible and the ROM without the carrier cannot function. **The integral chip carrier has strong steel pins; note that one of these pins is deliberately removed during manufacture – please do not mistakenly send it back as damaged!** This document assumes that the INTER-WORD chip has been installed and is functioning correctly. Refer to the fitting instructions if this is not the case.

Second processors
INTER-WORD does not use a 2nd processor. The reasons for this are two-fold. Firstly, INTER-WORD is 32K long and Acorn make no provision for 32K languages on a 2nd processor. Secondly, even if INTER-WORD could be transfered to the 2nd processor there would be less workspace than on a standard machine because of INTER-WORD's size. So because there would be no overall advantage in using the 2nd processor the message 'Turn 2nd processor off' is issued when attempting to do so.

1. Introduction

About INTER-WORD
INTER-WORD is part of the 'ROM-LINK' range of integrated programs. The ROM-LINK system offers two main advantages over conventional programs. Firstly it allows data to be transferred simply and quickly between any ROM-LINK compatible programs. Secondly it allows each ROM-LINK compatible program to have more than one set of data associated with it. In this particular case, this means that INTER-WORD can support more than one document in memory. In fact the ROM-LINK system supports up to 16 'packages' of data, so that it is theoretically possible to have up to 16 separate documents under INTER-WORD control.

INTER-WORD is the successor to WORDWISE and WORDWISE PLUS. The main advantage over its predecessors is that it allows editing in 80-columns. It continually re-formats the text as it is entered and edited, showing it at all times just as it will appear when printed. INTER-WORD allows not only the 80-column screen mode to be used, but also 40, 56 and 106-columns for further flexibility.

All of the major features can be operated from simple menus. This allows a newcomer to INTER-WORD to make use of more features sooner than if they had to be learnt and remembered. The quick reference card shows the contents of the menus, so that the required facility can be quickly located. The function key strip, positioned above the function keys, acts as a constant reminder of the uses of the keys.

Together these facilities allow the use of INTER-WORD with the minimum of learning, but at the same time provide the maximum of facilities.

Example disc
A disc containing example text files is available direct from Computer Concepts. When ordering, please specify the disc format required. The cost of the disc is £4.95 including V.A.T and postage within the U.K.

Technical enquiries
When writing technical enquiries to Computer Concepts, please ensure that you quote your registration number, printed inside the front cover of this manual. Be as brief as possible in explaining the problem, but include all relevant information, e.g. type of BBC micro, any hardware add-ons, what other ROMs are fitted, and the version number of INTER-WORD in use (found by typing `*HELP` **RETURN** from the main menu).

2. Starting from scratch

The simplest way to start the INTER-WORD program is to type:
`*IWORD` **RETURN**
Provided that no other *commands conflict, this can be abbreviated to:
`*IW.` **RETURN**
This presents the user with the main menu, which will be familiar to users of WORDWISE or ROM-LINK programs.

Each INTER-WORD package is numbered in the range 0-15 in order to differentiate one from another. The `*IW.` command will by default refer to package 0, i.e. IW.0. To initiate or re-select a different package, the package number should be given. For instance, INTER-WORD package 2 is selected with the command:
`*IW.2` **RETURN**

Quite often only one INTER-WORD package is used at any one time, in which case omitting the number will always refer to package 0.

The package number is always shown on the main menu following the INTER-WORD title. When a package is created, i.e. accessed for the first time, the computer will beep. This indicates that the package did not previously exist in memory.

ROM-LINK programs are integrated to a very high degree. They each allow the others to have data in memory and will never corrupt it. Beware though, entering any program which is not ROM-LINK compatible is likely to corrupt any or all of the packages in memory. Ensure that all data in memory is saved before entering BASIC or other ROMs that are not part of the ROM-LINK family.

It is frequently necessary to enter INETR-WORD and load an existing file. Instead of performing these two operations separately, they may be combined as a shortcut. INTER-WORD may be started by entering:
`*IW.`*n filename* **RETURN**

which will start document number *n* and attempt to load the text file indicated by *filename*. The document number *n* is optional and if omitted it will assume document 0, as usual. The shortcut command to enter INTER-WORD 0 and load the file named `INTRO` is therefore:

`*IW.INTRO` RETURN

If a filename is specified after the `*IW.` command and the file is not found, INTER-WORD is entered without a file being loaded.

3. Entering and editing text

The main menu

On entry to INTER-WORD the main menu is displayed. Eight numbered options are shown, the majority of which are concerned with the saving, loading and printing of documents. The last menu option `Edit text` is selected by pressing the ESCAPE key. The numbered options will be described later; they are only useful once text has been entered. ESCAPE selects the edit mode in which all entry and editing of text is performed. Pressing ESCAPE again will return to the main menu. Repeated presses will simply switch alternately between menu and edit mode.

Edit mode

When reading this manual with the computer at hand, it will help to type some words at this stage. If mistakes occur just ignore them until the methods for correction are introduced.

As text is being typed it is stored in the computer's memory one character at a time. It can be extended and chopped and changed in a variety of ways until the writer is satisfied with the result. However long the piece, the final result should be 'perfect'.

INTER-WORD tries to show on the edit mode screen an accurate representation of the printed document. For example, if a line of text is to be centered on the page, it will appear centered on the screen. INTER-WORD also shows on-screen emboldened and underlined text, and indicates exactly where the page boundaries will be.

When the edit mode is first entered, it displays text in an 80-column screen mode (80 characters per line). Obviously INTER-WORD cannot dictate that all text will be printed 80 characters per line and therefore it must be possible to alter the position of both the left and right margins of the text. These margins are controlled by 'rulers'. A ruler shows the margins and tabulation stops for the text beneath it. Fig.1 below shows an example of a ruler.

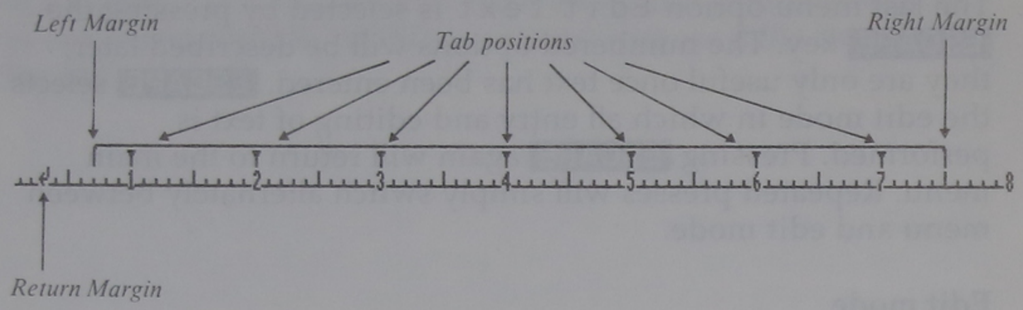

Fig.1 Diagram showing a ruler at the head of a page.

As text is entered, INTER-WORD continually re-formats the screen, so that the text always fits between the current margins. This means that there is no need to press **RETURN** at the end of every line (as is necessary on a typewriter). If the length of a word being typed spills over the end of the current line, the whole word is transferred to the start of the next line. This prevents words from being split across lines. Similarly, if a word on the beginning of a line is reduced in length sufficently for it to fit on the previous line, then it will be moved up.

INTER-WORD normally splits a document into pages. It always completes a partially filled page with blank lines. The top and bottom limits of pages are indicated by a solid line across the screen. It is normal practice to leave a gap of a few lines at the top and bottom of every page, so the first line of text will appear several lines down from the page top. INTER-WORD will automatically leave an appropriate gap at the top and bottom of every page, although their size can be altered as described below.

The layout of a page has several aspects. Fig.2 below shows a general page layout with the standard features labelled.

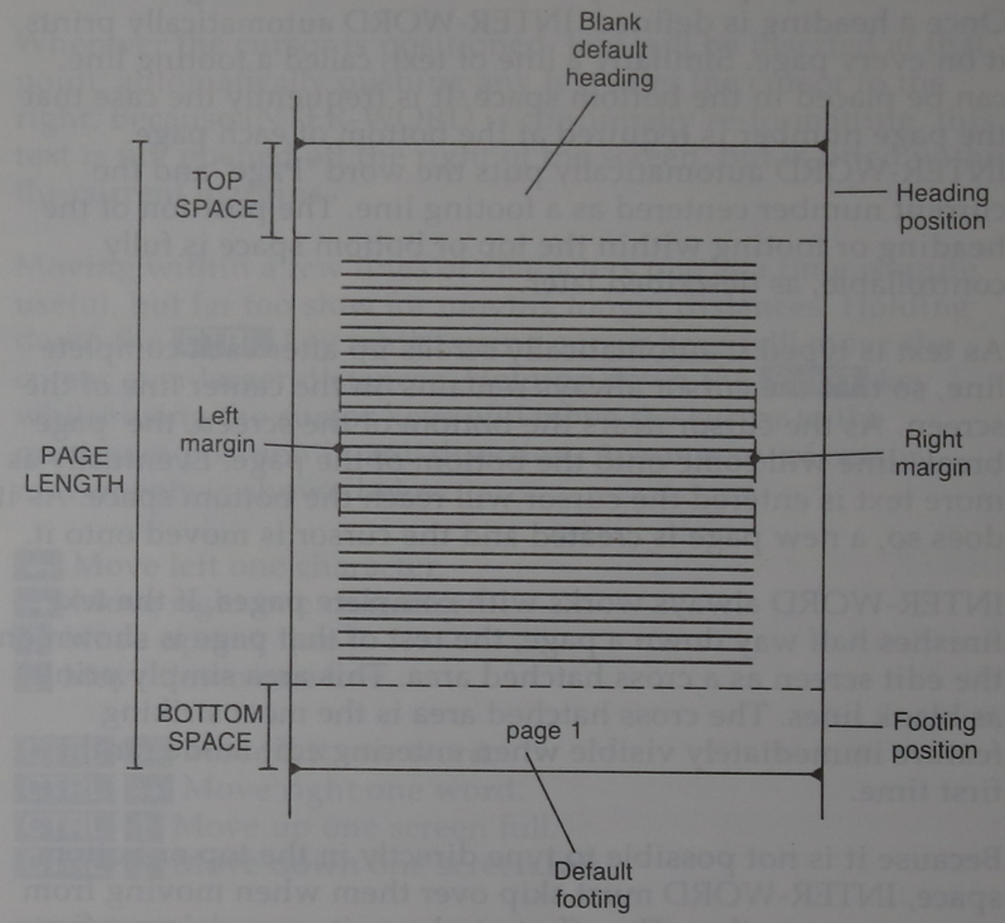

Fig.2 Diagram showing standard page layout.

The terminology used to describe page layout is really very simple. The lines usually left blank at the top and bottom of the page are known as the top space and bottom space respectively. The text starts on the first line after the top space and finishes one line prior to the bottom space.

Within the top space it is possible to have a heading line of text. Once a heading is defined, INTER-WORD automatically prints it on every page. Similarly a line of text, called a footing line, can be placed in the bottom space. It is frequently the case that the page number is required at the bottom of each page. INTER-WORD automatically puts the word "Page" and the current number centered as a footing line. The position of the heading or footing within the top or bottom space is fully controllable, as described later.

As text is typed it automatically scrolls up after each complete line, so that the cursor always remains on the center line of the screen. As the cursor nears the bottom of the screen, the 'page break' line will come onto the bottom of the page. Eventually as more text is entered the cursor will reach the bottom space. As it does so, a new page is created and the cursor is moved onto it.

INTER-WORD always works with complete pages. If the text finishes half way down a page, the rest of that page is shown on the edit screen as a cross hatched area. This area simply prints as blank lines. The cross hatched area is the most striking feature immediately visible when entering edit mode for the first time.

Because it is not possible to type directly in the top or bottom space, INTER-WORD must skip over them when moving from one page to another. The effect can be quite surprising at first, but takes little getting used to. The advantage is that page breaks can be completely ignored whilst typing, in much the same way as line ends are ignored. In this way INTER-WORD maintains an accurate screen representation of the page at all times.

CURSOR MOVEMENT

Once text has been entered it is quite simple to move the cursor to any position in the text by using the keys (←, →, ↑, ←).

When moving up and down the text, the cursor always remains on the center line of the screen, whilst the text moves under the cursor. Experience shows that it is very much easier for the eye to find the cursor on the screen if it remains on the center line. The cursor keys when used on their own move the cursor one line up or down, or one character left or right.

Wherever the cursor is positioned, text will be inserted at that point, automatically pushing any text after the cursor to the right. Because INTER-WORD is continually re-formatting, this text is not pushed off the right of the screen, but is fitted within the current margins.

Moving within a few lines or characters one at a time is quite useful, but far too slow for moving longer distances. Holding down the CTRL key whilst using cursor keys will move the cursor over larger distances. Holding down the SHIFT key whilst using the cursor keys will move the cursor to the maximum position in any direction. A summary of cursor movements is shown below:

← Move left one character.
→ Move right one character.
↑ Move up one line.
↓ Move down one line.

CTRL ← Move left one word.
CTRL → Move right one word.
CTRL ↑ Move up one screen full.
CTRL ↓ Move down one screen full.

SHIFT ← Move left to start of text on cursor line.
SHIFT → Move right to end of text on cursor line.
SHIFT ↑ Move up to top of text.
SHIFT ↓ Move down to bottom of text.

Two additional functions have been provided for use with paged text. CTRL P will move the cursor to the same relative position on the previous page.
CTRL N will move to the same relative position on the next page.

Pressing CTRL ^ will move the cursor to the current ruler, i.e. the nearest ruler above the current cursor position.

DELETE FACILITIES

The standard key for deleting the character to the left of the cursor – DELETE – retains its usual function. It works very quickly (especially if the keys are set to repeat quickly, see PREFERENCES) deleting back through the text. Because INTER-WORD continually re-formats the text, any gap created by deleting is immediately filled. This applies equally to any of the deleting operations. If any delete operation is repeated quickly, for example, holding down the DELETE key, the screen display may not be able to keep up. Pausing for a moment will let the display catch up and show the true state of the text.

In WORDWISE, the forerunner of INTER-WORD, CTRL A was used to delete one character at a time at the cursor. For compatibility this remains but, as an easier option, the COPY key also deletes the character at the cursor. Holding down the COPY key so that it repeats has the effect of deleting characters to the right. Therefore the two adjacent keys DELETE and COPY form a logical pair, deleting left or right.

Pressing CTRL D will delete the word at the cursor. It operates quickly, so can be held down to delete several words to the right. To delete one or more complete lines of text it is easier to use CTRL L. This will delete the whole line under the cursor. It is not expected that the novice user of INTER-WORD will either need or remember these last two functions. However the more experienced user will find that thay can save a great deal of time.

To summarise, the delete keys are:
DELETE – Delete one character to the left of the cursor.
COPY - Delete the character at the cursor.
CTRL A – same as COPY.
CTRL D – Delete the word at the cursor.
CTRL L – Delete the whole line at the cursor.

Deleting a ruler

Whilst the cursor is positioned on a ruler, pressing CTRL L

will delete that ruler completely. Note that the ruler at the top of the text cannot be deleted.

Deleting embedded commands

The embedded command menu itself has an option to delete the embedded command at the cursor. When either of the embedded commands `Force new page` or `Conditional page` are in the text, a cross hatched area will be shown if a new page is forced. These embedded commands can be deleted just by moving to any position in the cross hatched area and pressing CTRL L.

NOTE: Whenever a ruler, 'Force new page' or 'Conditional page' embedded command is inserted, a carriage return character is also inserted to ensure that it starts on a new line. This RETURN *is an integral part of the embedded command and cannot be deleted on its own. If the ruler or page command are subsequently deleted, the* RETURN *is deleted at the same time automatically.*

Deleting all text

There are several ways to delete all text, depending upon exactly what is required.

Whilst in edit mode, pressing CTRL X will mark the entire text. Subsequently pressing f8 will delete the marked section, i.e. all the text. If the amount of text is larger than 255 characters in size, the user will be prompted to confirm the deletion as is usual for large amounts of text. This method of deletion will *not* delete any heading or footing definitions and will not alter any of the current menu settings. This may be an advantage or a disadvantage in different circumstances.

If the requirement is to completely delete text and re-set menu options to their defaults in the current package, the `:CANCEL` command should be used. From the main menu, type the command:
`:CANCEL` RETURN
which will prompt for confirmation. Confirm the action by pressing the Y key, which will leave the cursor after an asterisk prompt. At this point, simply type the usual `IW.`*n* command to re-enter the same package. This method deletes *everything* with regard to the current package.

Using the `:KILL` command from the menu, following the same procedure as for the `:CANCEL` command has the most devastating action. This will delete *all* packages currently in memory, whether they be INTER-WORD or other ROM-LINK packages. Obviously this command should be used with caution!

Upper/lower case change
Pressing CTRL S will swap the case of the character at the cursor. It may also be held down so that its action repeats, changing a whole series of characters. For example, the cursor can be positioned at the start of "`inter-word`", then holding down CTRL S would change the case of the characters to "`INTER-WORD`".

4. RULERS

INTER-WORD uses rulers to control the format of the text. Specifically they control:
LEFT MARGIN
RIGHT MARGIN
RETURN MARGIN
TABS

A ruler occupies two screen lines. The first line shows left margin, all tab positions and right margin. The second line is marked in a manner similar to a standard measuring ruler, small marks indicating each character position and larger marks, in the form of numbers, every tenth character position. The return margin is also shown on the second line of the ruler. Fig.1 in the previous section shows an example of a ruler with its features labelled.

A ruler defines the format of following text; it has no effect on any preceding text. They can be inserted in the text wherever a different format is required. Fig.3 shows an example of text containing three rulers. The first ruler is set to have small margins; the second to have a much wider left margin (effectively an indent) and the third is a duplicate of the first.

The default ruler automatically inserted at the top of a new document has left and right margins of five characters each, leaving seventy characters for text.

The settings of the default ruler, or any further rulers inserted, are very easy to change. Any of the 'markers' for margins or tabs can be 'dragged' from their current position to a new position. In addition, new tab markers can be inserted or existing ones deleted.

To 'drag' one of the margins it is necessary to first move the cursor onto the corresponding margin indicator. While holding down the SHIFT key move the cursor left or right with the appropriate cursor key. A tab marker can be dragged in the same manner.

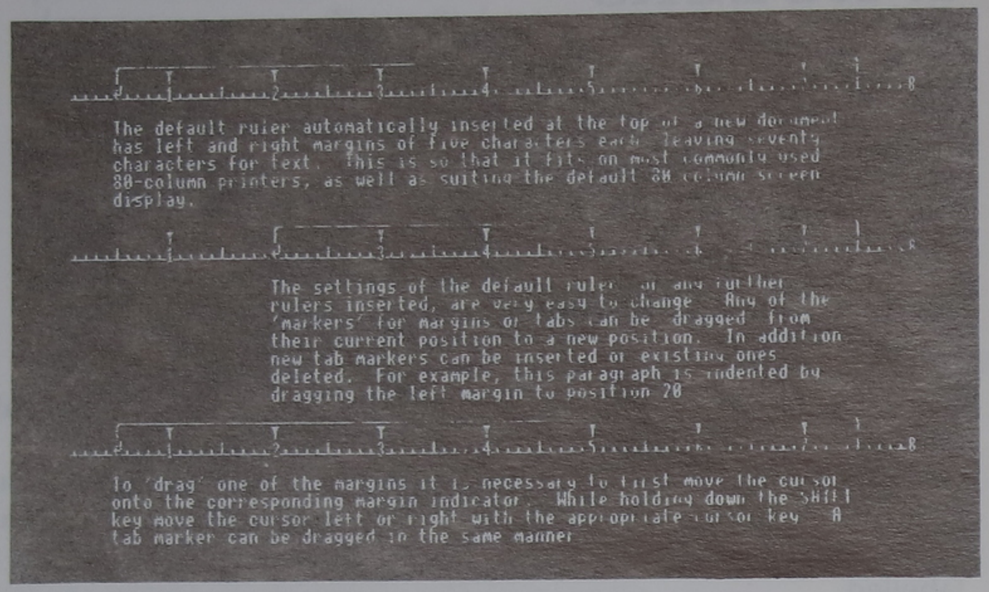

Fig.3 Indenting with rulers.

Return margin

As mentioned above, the RETURN key does not have to be pressed at the end of every line, except when introducing a break in the text, such as a new paragraph.

It is standard practice to press the RETURN key twice to start a new paragraph. Quite often, depending upon personal style, the first line of the new paragraph is indented a few spaces. This is where the return margin is useful. The start position of the first line after a RETURN is not controlled by the left margin on the ruler, but by the return margin.

By dragging the return margin, say, five characters further right than the left margin, all paragraphs will automatically start with an indented line. In a similar manner it is possible to obtain what is often referred to as a 'hanging indent'. This term describes a text layout in which all lines except the first in a group are indented. This is achieved by dragging the return margin to the left of the left margin. Hanging indents are quite useful when numbering paragraphs with the number protruding to the left of the main body of text. Fig.4 overleaf

shows an example of a hanging indent and the ruler which controls it.

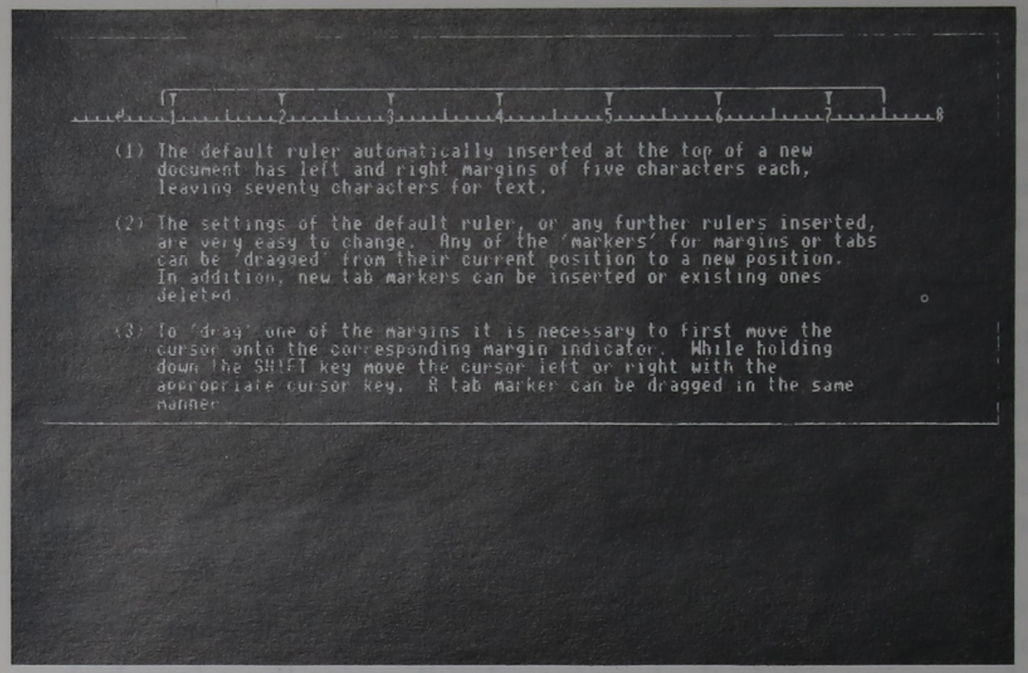

Fig.4 Hanging indents.

Tabulation

When the TAB key is pressed a special code is put into the text and the cursor is moved along the line to the next tab position indicated on the ruler. There are eight tab positions marked on the default ruler, one every ten characters. The tab position may be dragged just like the margins. The TAB key is used mainly when laying out tables of data or lining up columns of numbers. A tab character in the text or the tab marker on a ruler can be deleted just like any other character by pressing DELETE or COPY.

VISIBLE CODES

When either the TAB or RETURN key is pressed it does not cause a character to be displayed on the screen in the same way as, say, the A key for example. Usually these keys have an obvious effect. However it is sometimes useful to be able to see exactly where they were entered. INTER-WORD has the ability to represent the TAB and RETURN codes on the screen with

special characters. The option to display them can be selected from the PREFERENCE MENU.

Changing rulers
Any change made to the margins or tabs on the ruler will cause all following text to be immediately re-formatted to the new settings. There are one or two small points to remember about the margins. The left and right margins can only be moved to within 10 characters of each other as a line length less than 10 is not really useful. For a similar reason it is not possible to move the return margin to within less than 10 places of the right margin. When the left margin is dragged into the page (to the right) it can move over tab positions leaving them where they are. This enables hanging indents to have tabs within the hanging portion. When the right margin is moved into the center it covers all tabs beyond the right margin; these are uncovered if the margin is moved back again.

Remember that a ruler controls the format of all text which follows it, up to the end of the text or the next ruler. When reference is made to the 'current ruler' it means the ruler which is affecting the text at the current cursor position – this is always the first ruler above the current position.

The right margin indicator appears to be one position past the true end of the line. However, this is in fact correct because it is above the space which always occurs at the end of every line.

Inserting new rulers
Whenever a section of text must be formatted in a different way to that which precedes it, a new ruler must be inserted. This is done by pressing function key f2. A new ruler is always inserted before the start of the current line, never in the middle. The new ruler inserted is always a copy of the one at the very top of the text. The inserted ruler may then be altered, affecting the format of following text, without altering text above it. If one particular ruler regularly needs to be inserted into the text, then simply ensure that that is the one at the top of the text. In effect, the user defines a 'default' ruler at the start of the text to be copied whenever f2 is used. When it comes to printing the text,

the rulers are not printed on the paper; only their effect can be seen.

Note that if there is no visible ruler at the top of the text, rulers inserted will be copies of a default ruler.

There are several ways in which a ruler may be deleted, but probably the simplest way is to move onto it and press CTRL L (delete line). The ruler may also be marked, then moved or copied just like any other text.

EDIT MODE MENUS

5. Use of menus in general

There are ten menus available during edit mode; each of these is described individually in the following sections. Menus are a simple way of giving commands to INTER-WORD. Instead of having to remember command words, as is necessary on most word processors, the menus show lists of possible commands or settings.

Pressing the function key **f0** alone brings up the status menu, described in the following section. This menu not only shows status information, but also lists all of the other menus and allows the user to choose one. The status menu can therefore be seen as the 'top level' menu, giving access to all others. When first starting to use INTER-WORD, **f0** is the key to just about everything.

The problem with accessing menus from the status menu is that it takes several key presses to reach the one required. Once experience is gained, it is often better to remember the order of the menus and access them directly. Holding down the **CTRL** key and pressing one of the function keys will bring up one particular menu. The menus are numbered as follows:

0-Status
1-Preferences
2-Marked sections
3-Search and replace
4-Page layout
5-Printer setup
6-Control codes
7-Multi file
8-Spell check
9-ROM-LINK menu

With reference to the list above, pressing **CTRL** **f1** would select the preference menu. This method can be used to access any of the menus directly. The quick reference card lists the menu numbers and the menu contents.

Changing options
Menus consist of a list of options. Some of these options have nothing following, some have numbers following and some have one choice from a set of fixed alternatives, such as `ON` or `OFF`.

The cursor up and down keys may be used to highlight any one of the option names, prior to changing its setting parameter.

Where no alternative settings are available, the option is selected simply by pressing **RETURN**. Where a numeric range is possible, either a new number may be typed or cursor right or left keys can be used to increase or decrease the number. One choice from set alternatives is made also by pressing cursor left or right keys to cycle through the possible settings, pressing **RETURN** or moving the highlight off to select the setting shown.

Word input
Some option names require a string of characters as their setting. The Search and Replace menu is one such example. The string of characters may be edited quite simply, rather than having to re-type a complete new string. Cursor left and right keys move along the characters displayed, subsequent characters being inserted at the cursor position. The usual **DELETE**, **COPY** and **CTRL** **A** keys operate on strings to delete characters to the left or right of the cursor.

Acceptable range checking
Values changed via cursor keys are kept within an acceptable range automatically. When a value exceeds the acceptable maximum it changes to the minumum, and vice-versa.

When values are typed, and they are unacceptable, an acceptable value is inserted upon moving to another option. Option settings are never permitted to have unacceptable values at any time.

Exit from menus
On menus which require selection of one item from many, exit is automatic upon selection by pressing RETURN. The normal way to exit from a menu is by pressing the ESCAPE key. On the whole, any key which is not expected as input will exit the menu. Pressing the RETURN key when not on an option selected in this way, i.e. one which has a number or option following it, will simply move the highlight bar on as if the ↓ key had been pressed.

Return to previous menu
When one menu is selected from another, SHIFT ↑ will return to the previous menu. For example: when the preference menu has been accessed from the status menu, pressing SHIFT ↑ will return to the status menu.

When one menu overlays another, the menu underneath is shaded to hide its options.

6. Status

The status menu is displayed simply by pressing function key f0. In addition to showing status information about the current package, this menu allows any of nine further menus to be selected. Fig.5 below shows the status menu as displayed prior to entering text.

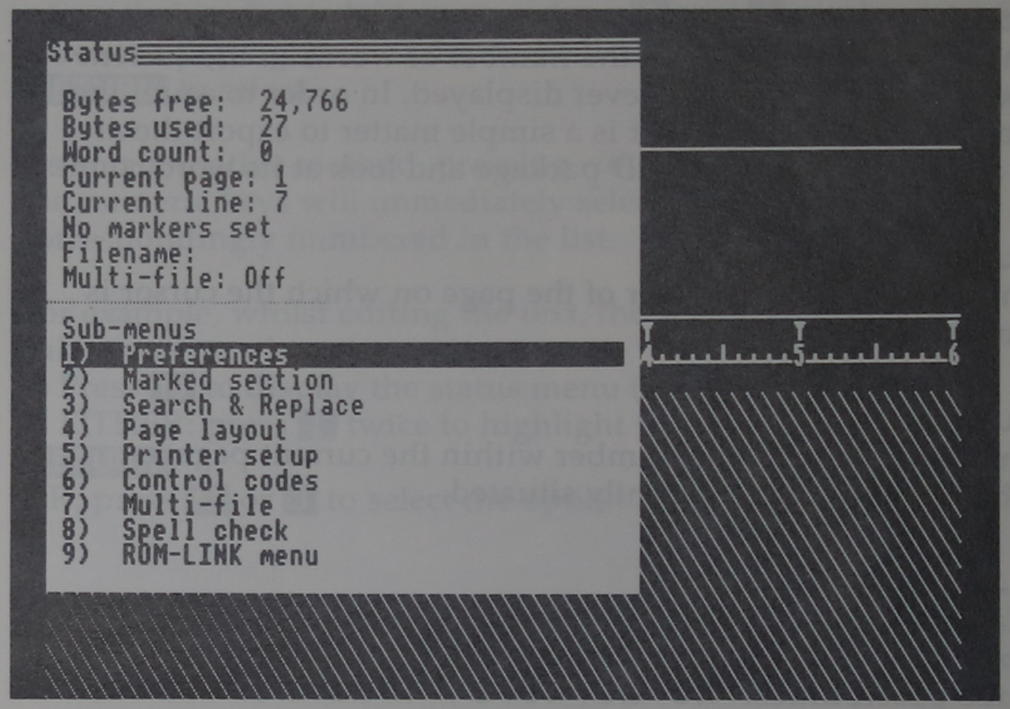

Fig.5 Status menu

Status information
The status information is very straightforward and requires little explanation. None of the status items listed can be altered directly on the menu by the user.

`Bytes free:`
This is the number of remaining bytes free to INTER-WORD; effectively the number of characters which may be entered. The number will be seen to have decreased when text has been entered. On a standard BBC model-B without shadow RAM this figure is most dramatically affected by the screen mode selected.

`Bytes used:`
This is the number of bytes of text which have been used in the current INTER-WORD package. This is not necessarily a text character count, since it includes bytes occupied by embedded commands and rulers. The number is always greater than zero even before any text has been entered, because a ruler is occupying a few bytes at the start.

`Word count:`
The word count indicates the number of words in the current text and is updated whenever displayed. In order to count the words in a specific area, it is a simple matter to export the area to an empty INTER-WORD package and look at its word count.

`Current page:`
This indicates the number of the page on which the cursor is currently positioned.

`Current line:`
This indicates the line number within the current page, on which the cursor is currently situated.

`.. markers set:`
Markers are used to define a block of text for a subsequent operation. The message on the status menu may be any one of three possibilities: "`No markers`", "`1 marker set`" or "`2 markers set`". The simplest way to delete any markers which may be set anywhere in the text is to press CTRL R.

`Filename:`
This indicates the filename of the text being edited. This is set to the latest filename used for a save or load operation performed by menu options 1 or 2.

`Multi-file:`
This option may be set to either `ON` or `OFF`. The default setting is to have multi-file mode off. When it is on, the text in memory is just one part of a large document spread over many files. Refer to the section on multi-file use for further information.

OTHER MENUS

The lower half of the status menu contains a list of other menus which may be selected from this point. The list is numbered, and one item is 'highlighted' in a black bar. There are several ways in which one of the sub-menus may be selected, so that the user may choose whichever is most convenient.

Pressing the RETURN key will select the menu which is currently highlighted. The cursor keys ↑ and ↓ can be used to move the highlight up or down the list, prior to pressing RETURN to select.

As an alternative method, pressing *either* the function keys or the numeric keys will immediately select the menu correspondingly numbered in the list.

For example, whilst editing the text, the search and replace sub-menu may be selected by:
1) Press f0 to display the status menu (Fig.5),
2) EITHER: press ↓ twice to highlight the option and press RETURN;
OR: press f3 or 3 to select the option by its number.

7. Preferences

When using systems in which features are 'fixed', one or more will often prove to be an irritation. Since different people like different things, INTER-WORD allows the user to set their individual preferences. Selectable items include screen colour, key repeat rate and screen mode. The complete preference menu is shown in Fig.6 below and is followed by detailed information about each option.

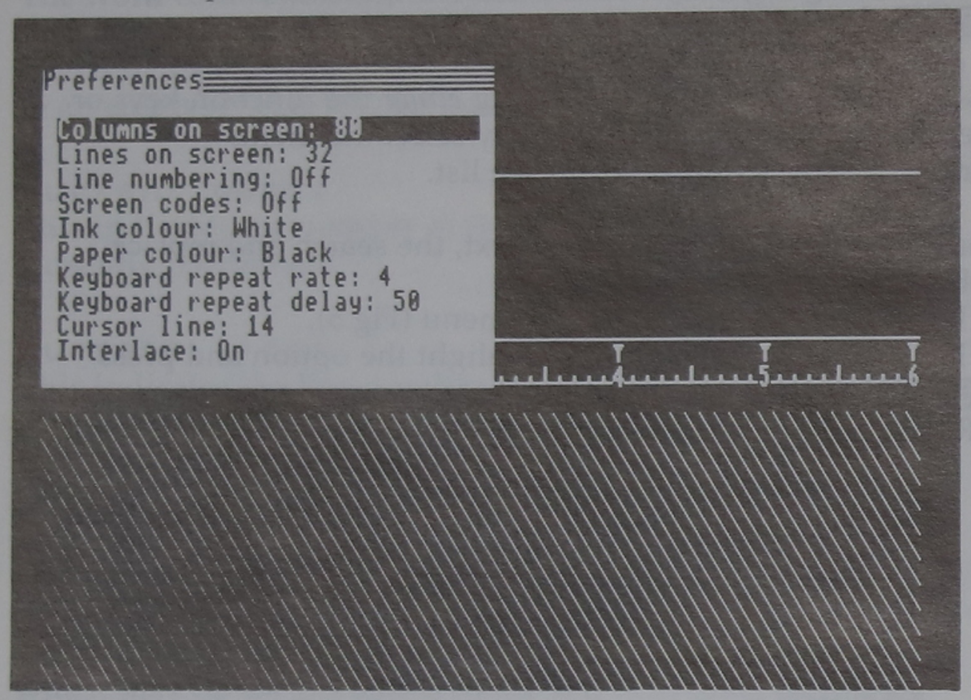

Fig.6 Preference menu.

`Columns on screen:`
Four possible character densities are possible for screen dislay: 40, 53, 80 and 106 characters per line, i.e. columns per screen.

A BBC model-B, without shadow RAM, uses memory for displaying the screen, which could otherwise be used to store text. The addition of shadow RAM, as is standard on the BBC model-B+ and Master, alleviates the problem. Without shadow RAM, the text capacity is dramatically reduced. The memory

figures which follow apply only to non-shadow RAM systems.
40 or 53 columns, 25 lines : 8K used.
40 or 53 columns, 32 lines : 10K used.
80 or 106 columns, 25 lines : 16K used.
80 or 106 columns, 32 lines : 20K used.
It is also worth pointing out that the 40 and 53-column modes both use the same amount of screen memory; similarly the 80 and 106-column modes are equal to each other.

Obviously, without shadow RAM, very little text can be entered whilst using the 80 or 106-column modes. Users without shadow RAM are strongly advised to seek advice on a system most suited to their use. Use of either the "Watford Electronics 32K RAM board" or the "Aries B20/B32 RAM board" is recommended for INTER-WORD in general.

The 40-column mode displays much larger characters than does the 106-column mode, though less of the text is visible on the screen at one time. To aid the use of text wider than the displayed screen width, sideways scrolling is provided.

Sideways scrolling allows the ruler to be extended beyond the right hand edge of the screen, to a maximum of 120 characters total width. When the cursor is moved off the right hand edge of the screen, the text scrolls sideways, bringing the next characters onto the right while text overflows the left hand edge. It is best to envisage the screen as a window through which only part of the text can be seen.

Whilst sideways scrolling, the SHIFT ← and SHIFT → keys may be used to advantage to move all the way to the left or right hand end of the cursor line.

`Lines on screen:`
The number of lines of text shown on the screen at one time is limited to the choices available on the BBC micro itself. There may be either 25 lines or 32 lines shown, together with any of the choices of character size.

`Line numbering:`
This option is only useful when the text is broken into pages.

With line numbering ON, a line number is displayed on the end of each screen line. The number is displayed only, not stored in the text in memory. Even if the ruler exceeds the width of the screen, the line number is always shown at the end of the screen line. Line numbers run from 1 to the page length, repeating for each page. Line numbers are not shown when the text is printed.

Screen codes:

The RETURN and TAB characters have an obvious effect on the text when entered, but this option allows their position to be seen exactly. When screen codes are ON, the RETURN character is shown as its standard symbol (an arrow turned left), and the TAB character is shown as a short arrow pointing right.

Ink colour:

Sets the text colour. The screen colour changes at the same time as the option is selected. Obviously if the screen paper colour is the same as the ink colour then nothing is visible. Holding down either the cursor left or right keys will cycle quickly through the available colours. All colours are available in all screen modes.

Paper colour:

The same as ink colour above, except that it is the background colour which is set.

Keyboard repeat rate:

If a key is held pressed, it will automatically repeat. This option sets the rate at which it will repeat, i.e. the number of repeats which will occur within a given time period. The normal repeat rate on the BBC micro is 6, though this is far too slow to be practical, so the INTER-WORD default is 4. Users familiar with the keyboard should decrease the number to 3 or possibly even 2, thus increasing the number of repeats. This also increases the rate at which the cursor moves when a cursor key is held pressed. With a repeat rate of 2 the speed of INTER-WORD 80-column scrolling is shown at its best.

Keyboard repeat delay:

When a key is held pressed, there is a short delay period before

it starts repeating. The normal delay period is 50. Experienced typists may decrease the number, thereby decreasing the delay, though most would leave it alone. Inexperienced and 'heavy handed' typists may increase the delay time to prevent unwanted key repetition which might otherwise occur.

Cursor line:

Usually the cursor remains on the center screen line. It is possible to position it up or down several lines from the center if that is found to be more convenient. The cursor line must always be less than the current page length. In an exceptional case where the page length is set very small, the cursor line will have to be changed first. For example, after setting the cursor line to 9, it will be possible to set the page length to 10. This rarely needs to be taken into consideration, since page lengths are never usually less than sixty lines.

Interlace:

Interlace is a technical term concerning the screen display. As far as the user is concerned and depending upon the monitor in use, changing this option can make the screen absolutely rock-steady. When using most colour monitors, there is an irritating 'wobble' to the display; if this is found to be the case, simple turn interlacing OFF.

8. Marked sections

INTER-WORD allows any section of text to be marked for a subsequent operation. The range of operations offered is detailed in this chapter.

The Marked section menu is shown in Fig.7 below.

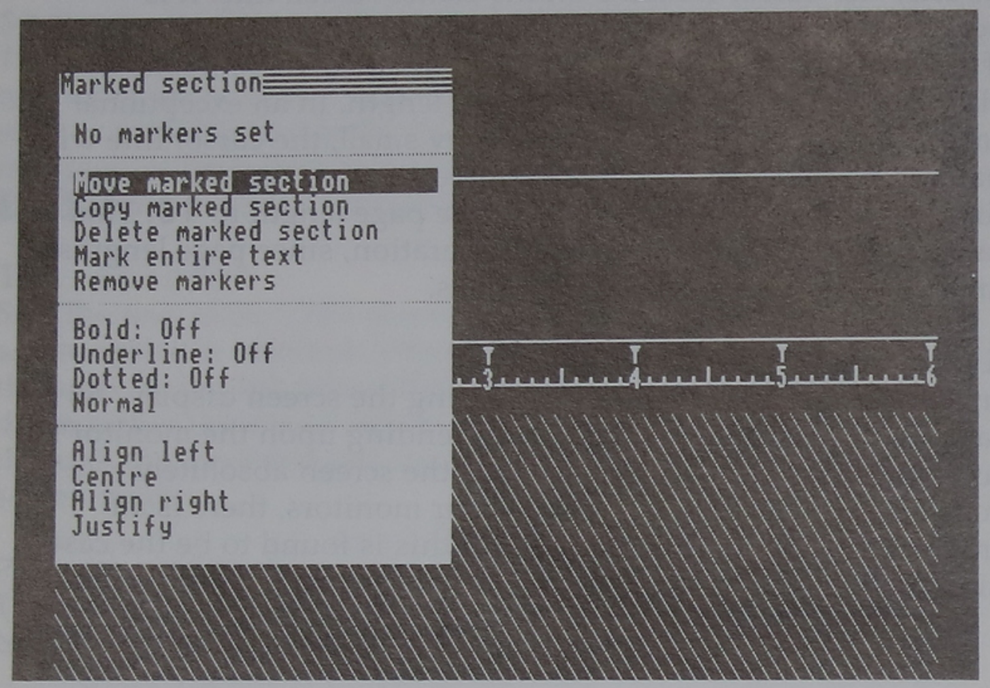

Fig.7 Marked section menu.

MARKING A SECTION OF TEXT

A marked section is a piece of text between two 'markers', shown reversed on the screen, i.e. ink and paper colours reversed. A start or end marker is inserted at the current cursor position by pressing f3.

The first marker inserted is shown as a character-sized block inverting the character underneath it which is included as part of the marked section. The block is shown in the current ink colour (white by default). By inverting the character at the marker position, the marker does not upset the format of the line. When just the first marker has been inserted the cursor will

blink at twice the normal rate, as a reminder that the second marker has yet to be placed.

The second marker may in fact be positioned before or after the first marker. As soon as it is positioned, all of the text between the markers becomes inverted (pen and paper colours reversed). This is the marked section.

The status menu and the marked section menu both show how many markers are currently inserted. If two markers are already inserted, pressing f3 once more will delete the previous two markers and insert a new first marker at the current cursor position. If the existing markers are a long way apart, or a long way from the new cursor position, deleting them may take a second or two.

Deleting markers

Pressing CTRL R whilst in edit mode will delete any markers which exist anywhere in text at the time. No error is given if no markers currently exist when an attempt is made to delete them. This performs the same function as the `Remove markers` menu option (see below).

Operations on marked text

There are three groups of operation which may be performed on marked sections, as shown in Fig.7 above. The operations for deleting and copying marked sections are duplicated on function keys f8 and f9 respectively. There are also keys which may be used to set styles or alignment of text at the cursor (the marked section at the cursor or the paragraph at the cursor), rather than just operating on the marked section. These are indicated on the function key strip.

Text underline, bold and dotted underline are described in the section headed "Function keys", as too are the left align, center, right align and justify functions.

`..markers set`

Purely for information, this message indicates the number of markers currently set in the text. The message will be any one of: "`No markers`", "`1 marker set`", or "`2 markers set`".

Moving and copying
Any style changes turned on prior to the start of a marked section will not be on the text when moved or copied. Only style changes actually turned on *within* the marked region will be moved or copied.

`Move marked section`
Provided that both markers are set, this option will move the marked section of text to a new position starting at the current cursor. It is obviously not possible to move a marked section to a new position which lies within the marked section itself. The move operation is the same as copy followed by delete. No single key operation is provided as a direct equivalent, though pressing f9 followed by f8 will perform the task.

`Copy marked section`
This is the same as pressing f9. It will copy the marked section to the current cursor position.

`Delete marked section`
This will delete the currently marked section. If the marked section is more than about 250 characters long, a warning message will prompt for confirmation before the text is deleted. Pressing f8 performs the same function.

`Mark entire text`
On some occasions it is necessary to mark the entire text ready for a subsequent operation. For example, the entire text may be deleted without losing current format and preference settings by marking it with this option and then using the delete marked section option. Pressing CTRL X is an alternative method of marking the entire text.

`Remove markers`
This option will remove any markers from wherever they may be in the text. This may sometimes take a few seconds if the amount of text is large because of the size of the search area. Pressing CTRL R will perform the same function, without having to go through the menu.

CTRL Z will mark the current word at the cursor. For underlining a single word this is much quicker than using the menus.

Style changes
The following four options will act *only* on the currently marked section, regardless of where it may be in relation to the current cursor position. In this respect they differ from the related function keys. The function keys will operate on the marked area only if the cursor is positioned *on* the marked section, otherwise they will act on the paragraph at the cursor. A paragraph is defined as the text which lies between two carriage return characters.

`Bold:`
This option will embolden the characters within the marked section. Any new characters typed within the bold area will also be emboldened. The `normal` option should be used to reverse the effect, should it be necessary. When printed, the bold on and bold off printer control sequences (defined in the control code menu) are sent to the printer at the start and end of the bold section. No action is taken if no section is marked.

`Underline:`
As above except that the marked section is underlined.

`Dotted:`
As above, except that the text is shown with a dotted underline. No such style as dotted underline exists on printers; it is merely intended as a general purpose style visible on-screen. By default, the corresponding control code sequences are those required for the *italic* style on Epson and compatible printers.

`Clear style changes`
This option will remove any of the above style changes from within the marked region.

Text alignment and justification
The following four options will act only on the currently marked text. Otherwise they are the same as function keys f4 to f7 inclusive.

`Align left`
This option will cause all text within the marked region to be aligned with the ruler left margin. This is the default state. This

option should be used to reverse the effect of any of the following options.

Centre

This option will cause the marked section to be centered between the ruler left and right margins. As text is entered within the centered region, it is continually re-centered. This may seem a quite surprising effect when first used, but is really quite advantageous.

Align right

This option will cause all lines within the marked region to be aligned with the ruler right margin. It may be set to affect text starting part-way through a line, separating at a tab character, but unusual effects may result if it is used inappropriately on lines which do not end with a return. Align right may be better known as 'fully indent', especially to users of WORDWISE PLUS.

Justify

A justified line is one which is 'padded-out' with spaces so that the first and last characters of each line of text are aligned with ruler left and right margins respectively thereby producing text with parallel margins. Text is continually re-justified as further characters are entered within the region.

9. Search and replace

There are two search facilities provided in INTER-WORD: the search and replace menu option and a quick 'go to' facility, accessed by pressing CTRL G. The go to facility is described at the end of this section. In both cases the search operation always starts at the current cursor position and works down through the text. Therefore, always put the cursor at the top of the text if all of the text is to be searched.

The search and replace feature allows any string of characters to be replaced by any other string of characters. The search and replace menu is shown in Fig.8 below.

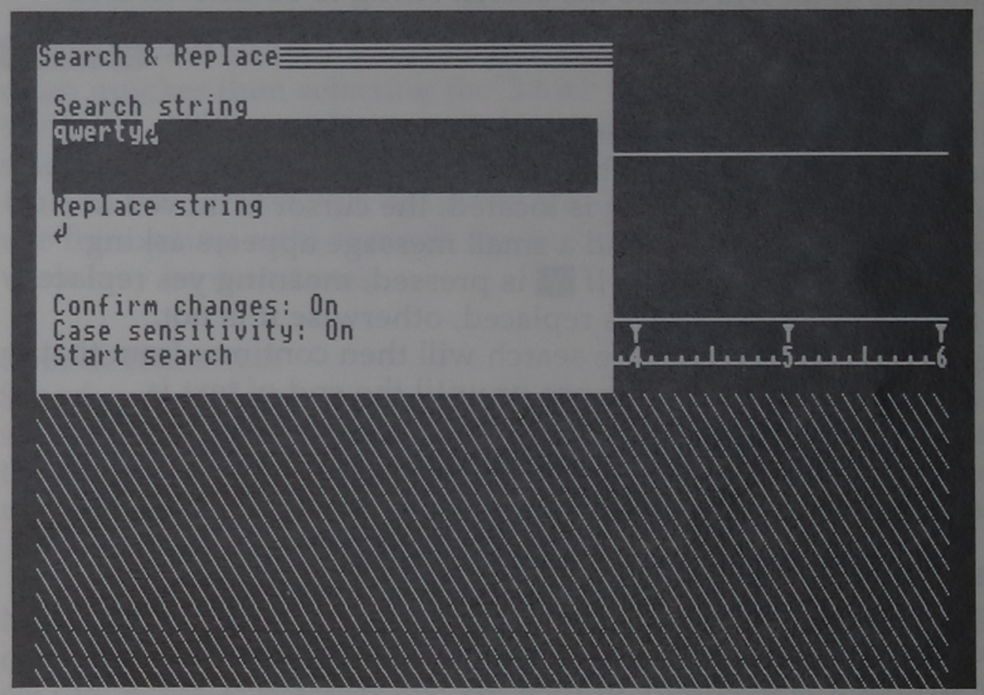

Fig.8 Search and replace menu.

Once this menu is displayed, the cursor up and down keys can be used to move between the items. Once entered, the search and replace strings remain in memory for subsequent operations. The search and replace strings can be entered without initiating a search operation. Searching can be initiated from the menu or by using the CTRL F key combination.

The maximum length is sixty character each for the search and replace strings. This is far larger than is likely to be necessary.

`Search string:`
The search string may include the 'hash' symbol (`#`) to indicate a wildcard, (this matches with any single character). For instance a search string: `#ad` will match with strings such as `sad`, `had`, `Bad`, etc. See also 'special characters' below.

`Replace string:`
The replacement string will be substituted in place of the search string when found (after confirmation only, if the `Confirm changes` option is `ON`). It may be of lesser, equal, or greater length than the search string. A replace string containing no characters at all will cause the search string to be deleted and replaced with nothing. See also 'special characters' below.

`Confirm changes:`
With this option set ON, as is the default, the search is interactive or 'selective'. This simply means that whenever a match for the search string is located, the cursor is moved to that position in the text and a small message appears asking "`Replace ? (Y/N)`". If **Y** is pressed, meaning yes replace it, then the search string is replaced, otherwise it is not. Regardless of response, the search will then continue from that point until the next occurrence or until the end of text is reached. Pressing the **ESCAPE** key will terminate the search, leaving the cursor where it is. The search can then be re-started later by pressing **CTRL** **F**.

`Case sensitivity`
Computers do not treat upper case characters (capital letters) in the same way as lower case letters. Sometimes when searching for strings it is desirable to treat the two differently and some times it is not. This option allows the user to select which is appropriate in that instance. With case sensitivity ON the word `Computer` is not regarded as a match with the word `computer`, because the first letter is upper case in one and lower case in the other.

When case senitivity is OFF, a replacement word is inserted so that its characters match the case of characters in the string

being replaced. For example, with a search string `THE` and a replacement string `ABC`, an occurrence of `the` would be replaced with `abc`, but an occurrence of `The` would be replaced with `Abc`. Because the first character of the string being replaced was a capital letter, the new string is made to match, also having an initial capital letter.

`Start search`
Moving onto this option, thereby highlighting it, and pressing **RETURN** will start the search and replace operation. It starts at the current cursor position and works down the text. This is almost the same as pressing **CTRL** **F** whilst the menu is not displayed (see below).

CTRL **F** will re-start a search and replace operation. This is often quicker than selecting the `Start search` option from the menu. However, because it is possible that it could be started mistakenly whilst editing, it always forces the `Confirm changes` option to `ON`. This prevents accidental use from going right through the text replacing all occurrences wich may be disastrous.

Special characters
Search and replace strings may freely contain one or more special characters. These are single capital letters preceded by the double bar character (`|`, shown as a vertical split bar in edit mode and on the keyboard). These are listed below:
`|M` – represents **RETURN**
`|I` – represents **TAB**
Note that the end of a screen line is not necessarily a **RETURN** character. The CODES option in the preference menu may be set ON to show exactly where **TAB** and **RETURN** characters exist in the text.

Quick 'go to' search, CTRL G
This merely allows one or more characters to be searched for, NOT replaced, without having to go through the search and replace menu. The string of characters entered is entirely independent of the main search and replace strings. Therefore a further advantage is that it enables a quick move to a known

character or string, without destroying the current search string which may still be needed.

This facility does not allow automatic replacement of one string for another, it merely moves the cursor to the next occurrence of the specified string. If no occurrence is found, a message is displayed stating "`Not found`", and the cursor is left in its current position.

When CTRL G is pressed, a small menu appears in the top left corner of the screen, prompting for a string. This may be up to thirty characters long. After entering the string, the ESCAPE key must be pressed. The cursor is immediately moved to that position.

CTRL Q will repeat the 'go to' operation on the same string as previously entered for the CTRL G operation.

One further use for the quick 'go to' facility is that of searching for special hidden codes in the text. It is possible, by specifying a special code, to move to a ruler, a bold code, an underlining code, an embedded command, and others. The search and replace facility may *not* be used for this function.

The table below lists all the codes necessary to search for the various highlights, rulers, etc. All of these consist of the split bar character (|) followed by a capital letter or other symbol found on the keyboard. A 'go to' string may contain one or more of these codes, alone or intermixed with text.

| A Force new page
| B Conditional page
| E Ruler
| I Tab character
| J Single marker
| K Bold start
| L Underline start
| M Carriage return
| N Dotted start
| O Marked section start
| P Centered start

| Q Right aligned start
| R Justified start
| S Bold end
| T Underlined end
| U Dotted end
| V Marked section end
| W Centered end
| X Right aligned end
| Y Justified end
| Z Change heading number
| \ Change footing number
| ^ Embedded `*`, `:`, or codes

10. Page layout

This menu controls page length, top and bottom space, and positioning of headings and footings. All but the first option have numeric values dealing with a number of lines. The menu is shown in Fig.9 below.

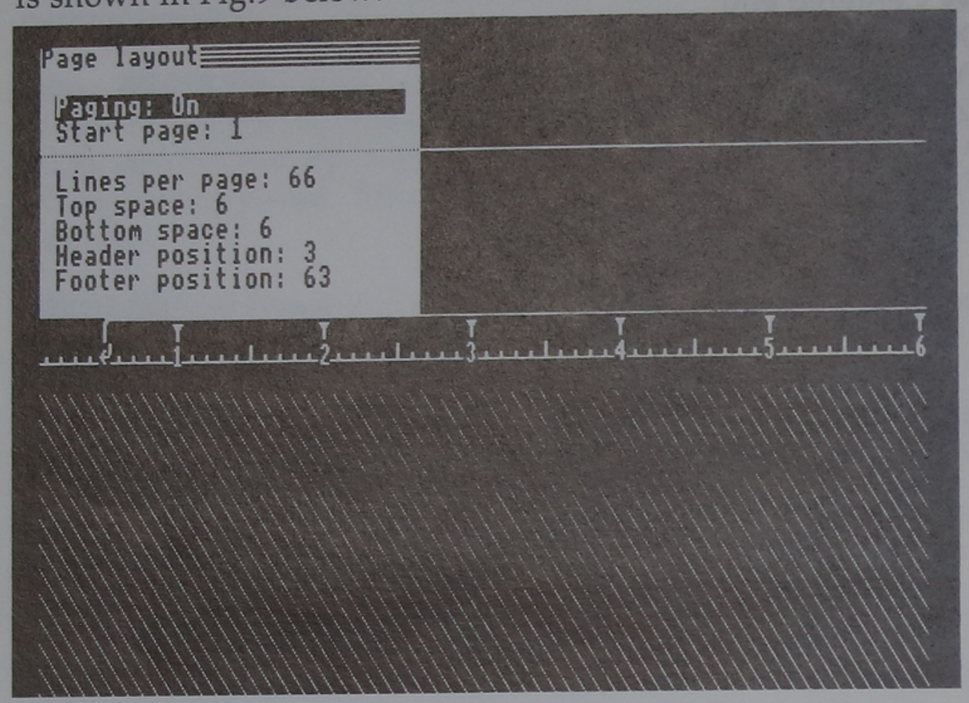

Fig.9 Page layout menu.

Paging:
This option may be On or Off. INTER-WORD will normally divide text into pages. However, this is not always required. Changing to the Off setting hides all page breaks and sets the top and bottom space to zero lines. This makes the text appear as one stream without breaks. Continuous text is useful in applications such as editing programs.

Some users may find it less distracting to use paging Off whilst entering and then to turn on paging afterwards. Turning off the paged mode merely hides the page breaks, headings, footings, etc. Any embedded commands used to force a new page will still have an effect, and line numbering if enabled will

also act just as if paging were still on. This allows paging to be turned off temporarily, without permanantly destroying the paged structure.

The option may be set either way at any stage during editing.

Whilst using the continuous option, the following options in the menu will have little if any effect on the display, since they apply only to page settings. The changed settings will come into effect if paged mode is later re-selected.

Start page:
Usually documents will start at page 1, which is of course the default setting. If, however, a document must start at some other page number, it should be set with this option. The number automatically increases by one on all subsequent pages in the document. The maximum page number is 255.

Lines per page:
This controls the total number of lines per page, including top and bottom space. The maximum page length is 120. The page length should not be set less than 16. If a shorter page length is selected, the display may not always be accurate. The user is prevented from selecting a page length less than the total of top space plus bottom space plus one. For example, if the top space is ten and the bottom space is ten, the minimum page length would be 21.

Top space:
The top space is the number of lines always left at the top of each page, including the heading line. The minimum top space is zero lines and the maximum is whatever will fit in the page, together with the bottom space and at least one line of text.

Bottom space:
The bottom space is the number of blank lines always left at the bottom of each page, including the footing line. The range is the same as for top space.

Header position:
The heading position is simply the line number on the page at

which the heading is always to be printed. If the heading position is set outside the current top space, the heading is simply not printed. INTER-WORD allows flexibility in positioning of the heading line, even allowing it to appear in the bottom space. This would mean that nothing appeared in the top space, but that two lines could be printed in the bottom space.

`Footer position:`
This is the line number on the page at which the footing is to be printed. As with the heading position, this may be set outside the page range or even in the top space to provide two lines of heading.

Removing the default page numbering
By default, a footing consisting of the word "`Page`" and the current page number is defined and displayed at the foot of every page. The simplest way to remove this altogether is to set the footing position (see above) to a number greater than the page length. For example, if the page length is `66`, set the footing position to `67` and it will not be displayed or printed.

Use during Multi-file mode
Note that the page layout can only be changed whilst on the first file in multi-file mode. Consequently, the page layout menu is not even accessible during multi-file mode, unless on the first file.

11. Printer setup

The printer setup menu contains all the options that are likely to be needed for handling the printing of text. It includes the ability to print multiple copies of a document, to print text in several columns per page, to print a specified range of pages only, and several other options. At the foot of the menu there is access to a sub-menu, used for defining in detail the printer codes required to print the various character styles visible in the text. The control code menu is also accessible as an option from the status menu and is described in the next section. The printer setup menu is shown in Fig.10 below.

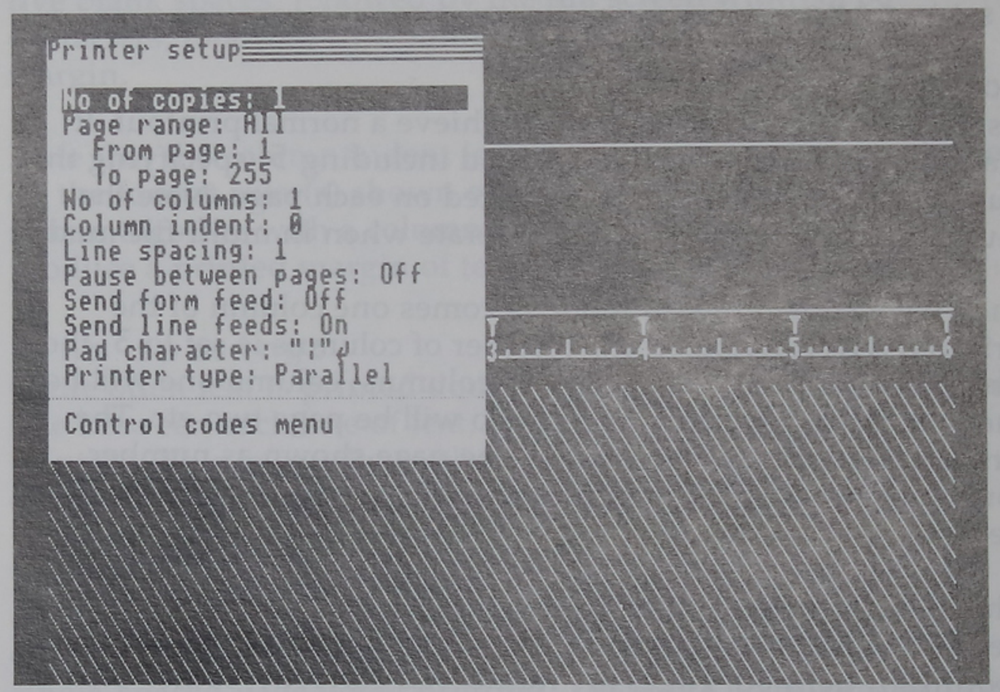

Fig.10 Printer setup menu.

`No. of copies:`
This option defines the number of copies to be printed when main menu option-6 is selected. The setting is `1` by default, so that only one copy is printed unless changed.

`Page range:`
The two settings available are `all` and `some`. If the option is

set to `all`, then all pages will be printed. If the option is set to `some`, then only some of the pages will be printed, as specified by the following two related parameters. In order to print just one page, set the option to `some` and set *both* the `From page` and the `To page` options to the same required page number.

`From page:`
Specifies the first page to be printed when the page range is set to `some`.

`To page:`
Specifies the last page to be printed when the page range option is set to `some`.

`No. of columns:`
Usually this option is set to `1` to achieve a normal printout. It may be set to any number up to and including `5`, specifying the number of text columns to be printed on each page. Note that multi-column printing will not operate when in multi-file mode.

Each page shown in edit mode becomes one column of the printout. For example, if the number of columns is set to `3`, the first printed page will show three columns; column one will be the text from page one, column two will be page two etc. The first column on page two will be the page shown as number four in edit mode. Thus, each page shown in edit mode becomes one column when printed.

The complete multi-column page has top and bottom spaces as defined by the page layout settings, together with headings and footings if defined. Pages are numbered correctly, rather than showing the numbers used in edit mode on every column.

The user must set the ruler(s) in the text to keep the sum width of columns printed within the required printout size. For example, if the paper width is 78 characters, and three columns are being printed, the width of the three columns added together should not exceed 78 including left margins and column indent (see below). If the columns are equal widths, that would allow 26 characters for each column, including margins.

`Column indent:`
The column indent may be regarded as a printout margin. Whenever text is printed, the number of characters specified for column indent are printed prior to each 'column'. If more than one column is printed, the spaces are printed between each column. This is its intended use, though it can be quite useful in other instances.

If a single column of text is being printed with a total printed line length of 90 characters, the 80-column screen mode can be used with the ruler set to full screen width; then with the column indent set to `5`, the printed output will have a margin of five blank spaces, followed by the full screen width of 80 characters, followed by nothing – i.e. an equal blank right margin.

Note that the column indent is in addition to any left margin set on the format ruler(s) shown on-screen. A ruler margin of five spaces together with a column indent of five spaces will produce a printed margin of ten spaces.

`Line spacing:`
Quite often text is printed double-spaced, that is with one blank line between each line of text, for checking prior to final printing. This is usually to allow correction marks and comments to be written on the printout.

When the line spacing option is set to `2`, the printout will be double spaced, and triple spaced when the option is set to `3`, etc. Note that blank lines are simply inserted in the normal single-spaced page when printing. Therefore, with a page length of 66 lines, 132 lines will be printed for one page when double spaced. In order to keep the same printed page length of 66 lines, it is simply necessary to halve the number of lines per page, top space, bottom space, header position and footer position.

If there is a regular need to start with double spacing, simply save a blank file with all the page layout options set accordingly. This file may then be loaded each time when starting a

document. The same applies to any other 'standard' page layouts that may be needed repeatedly.

`Pause between pages:`
Printing on single sheets of paper requires that printing must pause at the end of every page while the next sheet is inserted. Setting this option to ON will halt printing at the end of each page. Printing will then continue when the user presses a key to indicate that the printer is ready.

`Send form feed:`
Sometimes it can be difficult to print paged text at equal positions on each sheet of paper. Most printers accept a special 'form feed' character (often called simply FF) to instruct the printer to move to the start of the next sheet. Printers do this by working to a set number of lines per page, counting each line printed so that the remainder may be fed through upon receipt of an FF code.

With the send form feed option set to ON, INTER-WORD will send a FF character to the printer immediately after the footing of each page. The footing position, and indeed its presence, dictates the point at which the FF code is sent. If the footing is not positioned in the bottom space, the FF is not sent. Note however that positioning the footing in the top space will produce unwanted results.

Some printers may be fitted with an optional mechanism known as an automatic sheet-feeder. This holds a stack of single sheets of paper and feeds them automatically to the printer as they are required. Most will feed the next sheet as the preceding sheet nears the end, but this is usually very inaccurate. It is far better to use the FF code, recognised by most sheet feeders, to cause insertion of the new sheet at exactly the right point.

`Send linefeeds:`
Setting this option to `On` is effectively the same as is usually achieved by the command `*FX6,0`. Some printers feed the paper up one line whenever they receive just the carriage return character, but some explicitly require a line feed character. If

this option is set to `OFF` then line feeds are not sent to the printer.

If the printer in use fails to feed the paper, overprinting each line on top of the previous one, then this option should be set to `ON`. If the printer feeds a blank line after every line of text, this option should be set to `OFF`.

`Pad character:`
Whenever a space character is entered into text, INTER-WORD may split the line at that point, or may insert justification spaces. A pad character may be inserted instead of a space, causing INTER-WORD to treat items joined by pads as a single 'word' which cannot be split. Inserting a pad character shows the chosen character in edit mode and when previewed, but it is printed as a space. This option allows the user to choose which character should act as the pad character.

By default the pad character is a split vertical bar (| , ASCII code 124). Consequently this means that any of these characters which occur in the text will actually print as spaces! If the double bar character is required as a printable character, simply define the pad character to be something else. (Defining the pad character as a space effectively selects *no* pad character.)

`Printer type`
This option governs the printer interface to be used. This actually issues an `FX5,n` command, as defined in the BBC User Guide. There are five standard options: `None`, `Parallel`, `Serial`, `User`, and `Network`. The default type is parallel.

When using a serial printer it may be necessary to set the transmission rate, known as the 'baud rate'. This is done using a standard operating system call, `*FX8,`*n*where *n* is a number between 1 and 8, as defined in the BBC User Guide. For convenience, the rates are listed below:
1 = 75 baud
2 = 150 baud
3 = 300 baud
4 = 1200 baud
5 = 2400 baud

6 = 4800 baud
7 = 9600 baud
8 = 19200 baud

The manual for the printer in use, or for the particular serial interface in use, will give details of the appropriate setting necessary.

Control code menu

Highlighting this option and pressing **RETURN** will display the printer control code menu. This defines the codes which will be sent to the printer in order to achieve underlined, emboldened and dotted underlined text shown in edit mode. See the following section for a detailed description.

12. Control codes

The control code menu holds all of the printer-specific information needed for INTER-WORD to perform automatic underlining, bold, and other effects.

Fig.11 below shows the Control codes menu.

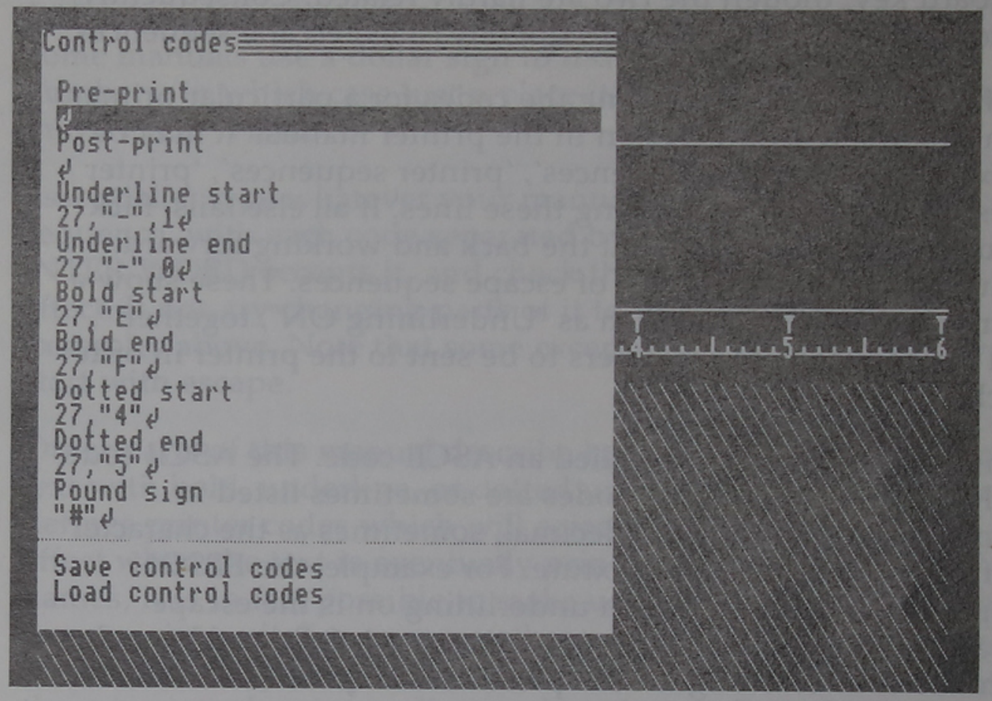

Fig.11 Control codes menu

For users who lack technical experience, printer codes are often a source of frustration. This is usually not helped by the appalling technical descriptions given in printer manuals, often badly translated into pidgin-English.

In order to achieve any given effect on a printer – underlining for instance – a sequence of codes must be sent to the printer. As if this isn't difficult enough, the codes are different for different printers. The only standard which is becoming recognised is the Epson printer codes. These have become standard, not because they are better than any others, but simply because the Epson printers have sold in such large

quantities. INTER-WORD uses Epson codes by default, but these may easily be changed for other printers.

Codes are expressed in many different ways in printer manuals. Most codes start by sending a special character code which the printer recognises as being the start of an instruction, rather than being printed text. This special character is called an ESCAPE character, the same name which happens to be on a keyboard key, though the two are hardly related. Consequently, the code sequences are most frequently called escape sequences.

The first step to understanding the codes for a particular printer is finding the relevant section in the printer manual. It may be indexed under 'escape sequences', 'printer sequences', 'printer codes', or something else along these lines. If all else fails, flick through the pages, starting at the back and working forward. Manuals usually give a table of escape sequences. These show a description of the effect, such as "Underlining ON", together with the sequence of characters to be sent to the printer in order to achieve that effect.

Each character has a code, called an ASCII code. The ASCII code for the letter A is 65. These codes are sometimes listed in decimal, sometimes in hexadecimal, sometimes as the character itself, and frequently as a mixture. For example, the EPSON escape sequence used to turn underlining on is the escape character, followed by a dash (negative sign), followed by code or character 1. This might be expressed as any of:

```
ESC, 45, 1
ESC – 1
ESC "-" 1
27,45,1
&1B,"-",1
&1B,&2D,1
```

All of the above mean the same thing; no wonder it is confusing. Escape is usually abbreviated to `ESC`, but may also be shown as `27`, its ASCII value in decimal or `&1B`, in hexadecimal.

INTER-WORD makes escape sequences as easy to use as possible. It will accept any of the above alternatives, provided that each code is separated from the next by a comma.

Some ASCII codes are even given names of their own. These names like `NAK`, `ACK` and `SOH` are totally meaningless without technical knowledge. INTER-WORD has a vocabulary of them and will also accept them in sequences.

INTER-WORD can accept any of the codes as hexadecimal (base sixteen) numbers when they are all preceded by an ampersand (&) character. For example, the character "`A`" might be listed as `&41`, though it is not obvious that the two are the same thing. Some manuals use a dollar sign to indicate hexadecimal numbers, in which case just replace it with & when it is entered into INTER-WORD.

Essentially, type whatever your manual lists as the code sequence, with each code separated by a comma, and see if INTER-WORD accepts it, and check that it gives the desired effect. If not, try changing parts of it to fit the style of the examples above. Note that some exceptional codes may not even start with escape.

Other parts of this manual describe how to highlight an area of text with bold, underline, or dotted underline. The code menu defines printer codes which will correspond to each screen effect when the text is eventually printed. Regardless of the names, it is in fact possible to make underlining shown on the screen print as italics or some other such style, just by putting the correct escape sequence into the code menu. Of course, there is no such printer effect as dotted underline; this is intended to represent on the screen whatever printed style the user selects.

It will be found in use that when a sequence of codes is entered, INTER-WORD will examine it and translate it to a standard format. This will not always be exactly as the user entered it.

Some printers appearing on the market are less than comprehensive in the facilities they offer. INTER-WORD can output any control sequence, but if the printer does not have a certain facility, the user can do little about it.

If all else fails, turn to an expert. Remember that your printer may be quite unusual, and so an expert is unlikely to be able to

assist unless sufficent information is supplied. A list of escape codes is a necessity.

Note: Some printers are unable to support certain combinations of printed effects. For example, som Epson printers are unable to print bold characters when set in the elite mode. In this particular case, the simplest 'solution' is to use double strike instead, which is permitted. Because printers vary so much in their capabilities it is unfortunately not possible to document all such intricate details.

Pre-print:
Before starting to print anything, the pre-print sequence is sent to the printer. This might be used, for example, to form feed to the start of the next sheet before printing, or to reset the printer (Epson code `27,64`). It may be left blank, as it is by default, so that no sequence is sent.

Post-print:
A code sequence which will be automatically sent to the printer at the end of a printing operation. See also above.

Underline start:
This is a code sequence which will be sent to the printer, corresponding to the start of underlined text. The default sequence is:`27,"-",1`

Underline end:
This sequence corresponds to the end of underlining. The default is: `27,"-",0`

Bold start:
This sequence corresponds to the start of bold text. The default is: `27,"E"`

Bold end:
This sequence corresponds to the end of bold text. The default is: `27,"F"`

Dotted start:
This is intended as a general purpose sequence. It corresponds

to the start of dotted underlining in text. The default is merely a suggested use, namely italics. As usual, the default code is Epson compatible: `27,"4"`

Dotted end:
This sequence corresponds to the end of the general purpose dotted underlined text. The default, which turns off italics, is Epson compatible: `27,"5"`

Pound sign:
The character code for a pound symbol is different on different printers. The Epson printer requires ASCII code 35 decimal, the BBC hash character (#). It is possible to use a sequence instead of a single code, often useful when it is necessary to change between international character sets in order to print the correct character. Some daisy wheel printers require the sequence `27,32`. Refer to the printer manual for specific details.

This can of course be used to deliberately select a special character other than a pound symbol, though the screen will always show a pound symbol regardless.

The default code is `"#"`. For Epson compatible printers this will only work correctly if the printer is already in the U.K. character set. If it is actually in the U.S.A character set, then a hash symbol will be printed. In which case, define the pound sign as:
`27,"R",3,"#",27,"R",0`
This selects the U.K. character set, prints the pound sign, and re-selects the U.S.A. character set for every pound sign which occurs in the text. This has the advantage that hash symbols in the text will not be converted to pound signs.

Save printer codes
This may be used to save the codes contained within the control code menu. They may later be re-loaded with the following option. This is particularly useful for storing codes to achieve the same effects on different printers. The option is selected by pressing the **RETURN** key while the highlight bar is on the option. The usual file selector will be displayed so that a file name for saving the codes may be selected or entered.

`Load printer codes`
This option will re-load a file of printer control codes previously saved by the `Save printer codes` option, described above.

EDITING KEYS
When editing an existing printer sequence, it is not necessary to re-enter the whole line in order to make a small change. The cursor left and right keys operate as they do in edit mode, as do the CTRL A, COPY and DELETE keys for deletion.

Any characters typed are inserted at the current cursor position. Simply delete the existing sequence if a completely new one is to be entered.

13. Multi-file documents

The memory available for storing text on a BBC Micro is quite limited. Although it is adequate for handling letters, short reports, etc., there is no chance of it holding a large document the size of a book. INTER-WORD provides a means for handling long documents by splitting them into a number of manageable files which each fit into memory.

Multi-file processing offers several advantages over the alternative method of creating one huge file. Using one large file limits documents to the size of one side of a disc, which the multi-file method does not. Multi-file documents are easier to manage; it is easier to re-arrange sections, and it allows movement backwards through the document instead of only forwards.

Rather than have INTER-WORD automatically choose generic and usually meaningless names for each file, such as FILE1, FILE2, ...etc., the user is allowed to choose all the filenames. The files are held in a list. The order of the list dictates the order in which the files are printed as part of the document. Simply moving a filename from one position in the list to another has the effect of changing the order of the files in the document. This makes it very simple to re-arrange the order of sections within the document as late as the final printing.

Printing is an automatic process; loading and printing each document in order is handled without user intervention.

Starting a multi-file document

If the user is at the stage of having entered an amount of text and realises that it is necessary to enter multi-file mode then the present document must be saved. Normally this existing text will become the first file in the multi-file document. If however the user knows from the start that multi-file processing is going to be required (i.e. for a manual or book) then it is best to start in multi-file mode.

The multi-file menu has the option "`create new document`" which is used to start a fresh multi-file document.

Selecting this option (move onto it and press RETURN) will then display the normal file selector asking the user for the document name. Remember the document name is the name given to the overall multi-file document. This file will not hold any text but will hold the list of files that make up the complete document. If there is some text in memory before selecting the `create new document` option, INTER-WORD will prompt `Are you sure ? (Y/N)` before continuing. Replying Y will delete any text in memory.

Having entered a document name the user is then asked for the first filename. This should be the name of the file to be the first one in the list. If the user already has some text saved that is to be the start of the document then the name of that file should be entered first. INTER-WORD will now load this first file and leave the cursor at the start ready for editing.

If starting a fresh multi-file document with no text then enter a new filename. INTER-WORD will present the user with a blank INTER-WORD ready for entering text.

At this stage INTER-WORD is now in multi-file mode. This can be confirmed by looking at the status menu where the option `Multi file` should say `On`. At this stage only the one file exits, pressing CTRL f7 will select the multi-file menu which should show the file list on the right containing just this one filename.

If the user now wishes to extend the document to two files, either because there is little room left in the current file, or simply because it is appropriate to start a new chapter and therefore a new file at this point. The way to add a new file to the end of the list is to select the multi-file menu and move the highlight bar down to below the last filename in the list. At this point simply pressing RETURN will tell INTER-WORD that a new filename is to be added to the end of the list. It will now ask for a new filename to be entered in the normal manner. Again entering an existing filename will load the file and add its name to the end of the list.

The `Insert filename` option could be used to add a filename between other files, but not to the end of the list. The above method is much simpler anyway.

It often makes sense to split files on chapter boundaries or some other convenient place. It is not necessary to fill each file with as much text as possible, indeed it is a positive disadvantage to do so. It is quite possible in INTER-WORD to have files that consist of a few lines of text only. This is perhaps going a little too far, but it does make sense to leave a reasonable amount of room at the end of each file.

At this stage the document will consist of two files. The same process is used to add more filenames to the list. INTER-WORD has room for about 30 or 40 files in this list allowing documents of several hundred pages to be produced.

While in mutli-file mode, selecting the multi-file menu will always show the list of files in the current document. The current file will be highlighted. In order to move to any other file in the list it is just a matter of simply moving the highlight bar to the required filename (with the up/down arrow keys) and pressing RETURN. INTER-WORD will now save the current document and move to the selected one.

If all that is required is to move up or down one file at a time, then there is a much simpler way. Remember that pressing SHIFT ↑ will always move to the top of the current text, and similarly pressing SHIFT ↓ moves to the bottom. However if the cursor is already at the top of the text then pressing SHIFT ↑ will save the current file and load the previous one. Likewise SHIFT ↓ while at the bottom will move onto the next file in the list. In this way it is very simple to move up and down the list of files one at a time.

Multi-file handling has another hidden advantage. Whenever moving off the current file to another in the list, the current one is always saved. This means that if for any reason the computer goes wrong while editing in multi-file mode (for example, there is a power cut) all that is lost will be the changes made to the current file since it was last saved, i.e since the last move from

one file to any other file in the list. This means that it is perfectly safe to move to another file in the list and then simply switch off the computer. While in multi-file mode this is probably the simplest way to end an editing session.

Once the computer has been switched off the simplest way to start editing a multi-file document is to load the DOCUMENT. The main menu option-2 (Load new text) should be used. This option detects an attempt to load a document name (as opposed to a filename) and will start up the multi-file mode and load the correct filename, starting exactly where it was left at the end of the last session.

The multi-file menu
The menu for handling multiple files is shown in Fig.12 below. In fact, the option menu is shown on the left of the screen whilst the file list is shown on the right. The file list will not be displayed until actually using multi-file mode.

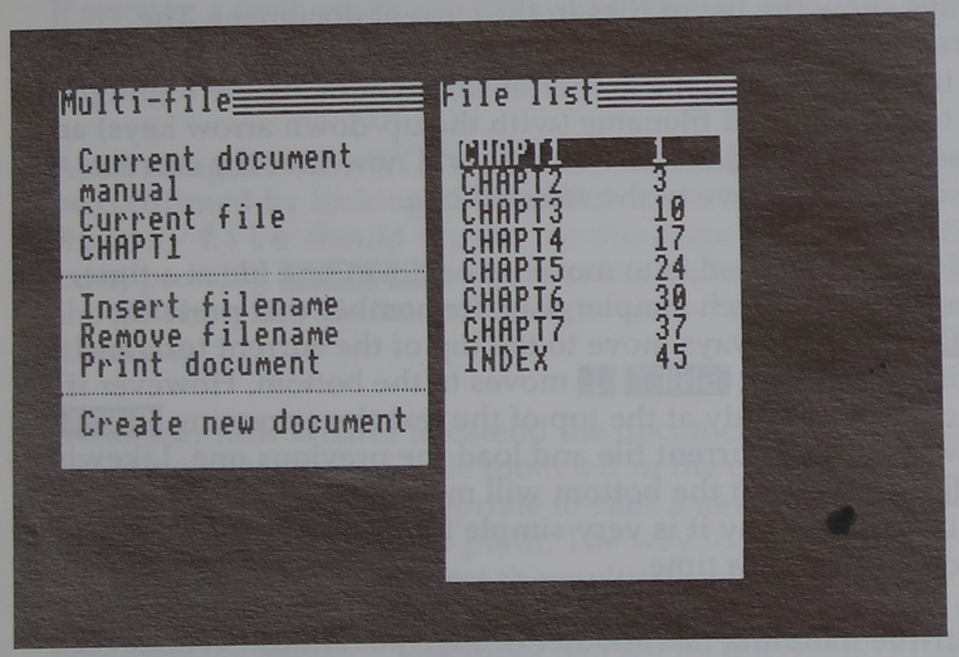

Fig.12 Multi file menu.

The process of transfer from editing the current file to editing the previous or following one is semi-automatic. Simply by

moving to the very top or very bottom of the current text and pressing SHIFT ↑ or SHIFT ↓, the current text is saved and the previous or following file is loaded for editing.

An alternative method of moving from one file to another is via the file list. When the multi-file menu and the file list are displayed, a highlight bar is used to move between options in the usual way. However, in addition, pressing cursor left or cursor right keys will move between the option menu and the file list. Whilst on the file list, a highlight bar is used to move up and down the files. Pressing RETURN will save the current file (so that any editing changes are retained) and load the highlighted file. Moving to a file earlier in the document, i.e. a file higher in the list, is very fast indeed. Moving forward is not so fast!

When moving down the file list, which may take a noticeable time, the file list is displayed and the highlight bar shows the file reached so far, updated as it goes, until it reaches the destination file.

The format of the document (set by rulers and by the page layout menu) is carried forward through the files automatically. This means that if *any* change is made to a file, *all* files following will be re-arranged. For example a narrow ruler may have been inserted, increasing the number of pages to accommodate the same amount of text. As a result, when moving forward through the list of files it is necessary to load and format every file on the way to the required file. It is still of course faster than any other method.

Because text styles and allignments are turned on and off within a single file, these effects must be handled individually for each file. If all files are to be underlined, then it is actually necessary to mark and underline each file individually. Of course, it is highly unlikely that this would be required.

Menu options
`Current document:`
This is status information, indicating the name of the entire document being edited. Effectively this is the file containing the

list of filenames which form the complete document. For example, if this manual were being edited, the name might be "MANUAL". This name must not then be entered as one of the files within the list.

`Current file:`
This is also status information, showing the name of the file currently in memory. For example, if this section of the INTER-WORD manual were being edited in memory at the time then a suitable short filename might be "MULTI".

`Insert filename`
This option, when selected by pressing RETURN whilst it is highlighted, will allow insertion of a new filename, provided there is room in the list. The filename is inserted in the list immediately before the highlighted position, i.e the current file. To insert a file at a different position in the list, it is necessary first to move to the file at that position, before using the insert option.

`Remove filename`
This option simply removes a filename from the list. It *does not* delete the actual file itself from the disc. It may therefore be used for temporarily or permanently removing a file from the document. To change the order of the files in the document, the filename to be moved must be removed and then inserted at its new position. To rename a file, simply remove its name from the list, rename the file on the disc, and insert the new name.

`Print document`
This option will print the document, starting at the current filename. It is therefore necessary to move to the first file in the list if the entire document is to be printed. Current options set in the printer setup menu and printer code menu are used. Hence, only pages both within the page range *and* between the current file and the last file will be printed.

`Create document`
This option should be used ONLY to start an entirely new document, i.e. a completely new list of files. Any text currently in memory is liable to be lost, so it is necessary to ensure that

anything valuable is first saved. A safety-net prompt forces the user to confirm this operation if more than a few lines of text already exist in the current package.

The user will be prompted to supply a document name and a first filename, via the usual file selector menus.

Page numbers
Page numbering is carried across files automatically. To the right of each filename in the list is the number of the first page in that file. However, it is important to note that these numbers are only updated when its corresponding file is formatted. Any files below the current file are not accurately formatted according to changes made in files above. Therefore their page numbers may be incorrect. When printing takes place, each file is formatted, so they will never be seen to be incorrect except on the file list below the current file.

Operational notes
As the current file nears the memory size, a new filename should be inserted following the current filename in the list. In practice it is important never to try to fill the current memory right to the limit. In fact it would be best to leave a few thousand characters free in every file if possible. This makes life easier when it is necessary to insert forgotten paragraphs and also to allow for occasions when it might be necessary to enter another ROM-LINK package.

If a file in memory becomes unmanageably long then it is advisable to split it into two smaller files. The simplest way to do this is to mark and save the bottom half of the text. The saved section should then be deleted and the remaining text saved under the existing filename. Finally the name of the saved section should be inserted into the file list.

The main menu `Load new text` option-1 should *not* be used whilst in multi-file mode. Option-4 may be used to load a section of text to the cursor in the normal way. Should it be necessary, options 1 and 3 may also be used.

Page layout
The page layout may not be changed part-way through a

multi-file document. It may only be changed when on the first file in the list. Consequently, the page layout menu may not even be selected unless on the first file.

Multiple columns
It is not possible to use multi-column printing during multi-file operation.

To start a new page.
Usually, INTER-WORD fills out the last incomplete page of a file with a cross hatched area, and outputs blank lines to complete that page when printing.

During multi-file operation, this automatic completion of the last page still occurs on-screen for every file, but it would be inconvenient to have to start a new page every time the text continued on to the next file. For this reason, each subsequent file actually starts on the next line of the same page that the previous file finished on. For example, if `"FILE5"` finished on line 21 of page 4, the following file `"FILE6"` would start on line 22 of page 4.

The problem therefore is how to *really* start a completely new page, for example, when starting a new chapter. The answer is simply to insert a `Force new page` embedded command at the start of the following file.

14. Spelling checker

INTER-WORD has no built-in spelling checker. However, it is designed to make use of the ROM-LINK compatible spelling checker available separately. If the spelling checker is not fitted to the machine in use, then a message will indicate its absence if an attempt is made to access the spelling check menu.

If the spelling check ROM is fitted to the machine, the menu in Fig.13 will be available.

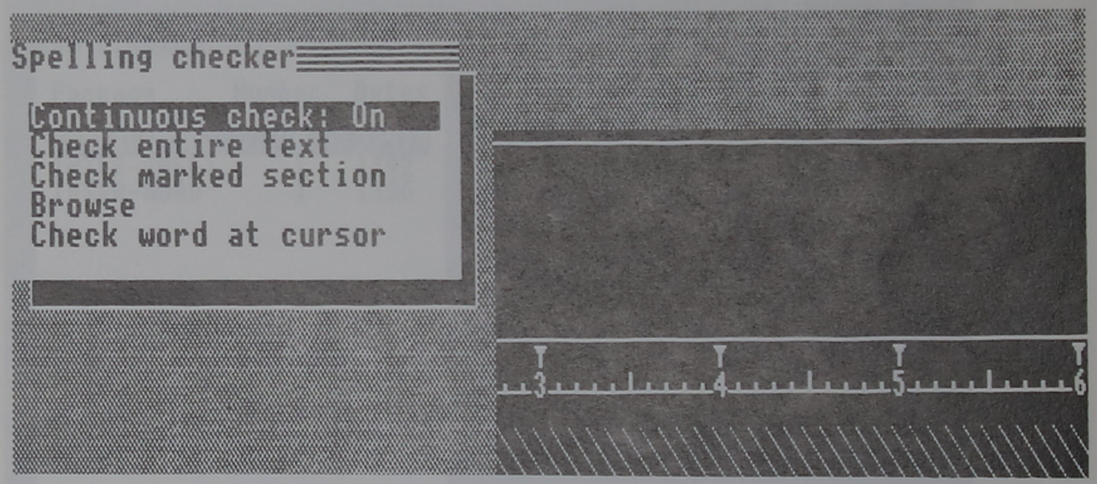

Fig.13 Spelling check menu.

Full details of operation can be found in the manual supplied with the spelling check ROM.

`Continuous check:`
In this mode, each word is checked as it is typed. The very fast checking speed of the spelling check ROM allows this to occur without interfering with the typing speed.

Check entire text
When selected, this option calls for a complete spelling check on the entire text in memory.

Check marked section
As above, but only a selected section of text is checked.

Browse
The spelling check ROM has facilities to allow the user to 'browse' through the dictionary to find the required word.

Check word at cursor
Obviously this option causes a spelling check on the word at the cursor.

15. ROM-LINK menu

The ROM-LINK menu is very simple. It shows which packages currently exist in memory, together with the number of bytes allocated to each.

The current package is always shown at the top of the list, occupying *all* of the available memory. Exactly how much of that memory it is using can be seen from the bytes used count in the package (or perhaps a percentage free in INTER-SHEET).

Using the cursor up and down keys in the normal manner, the user may move the highlight bar on to any one of the packages shown. Pressing **RETURN** will select the highlighted package.

The ROM-LINK menu is shown in Fig.14 below.

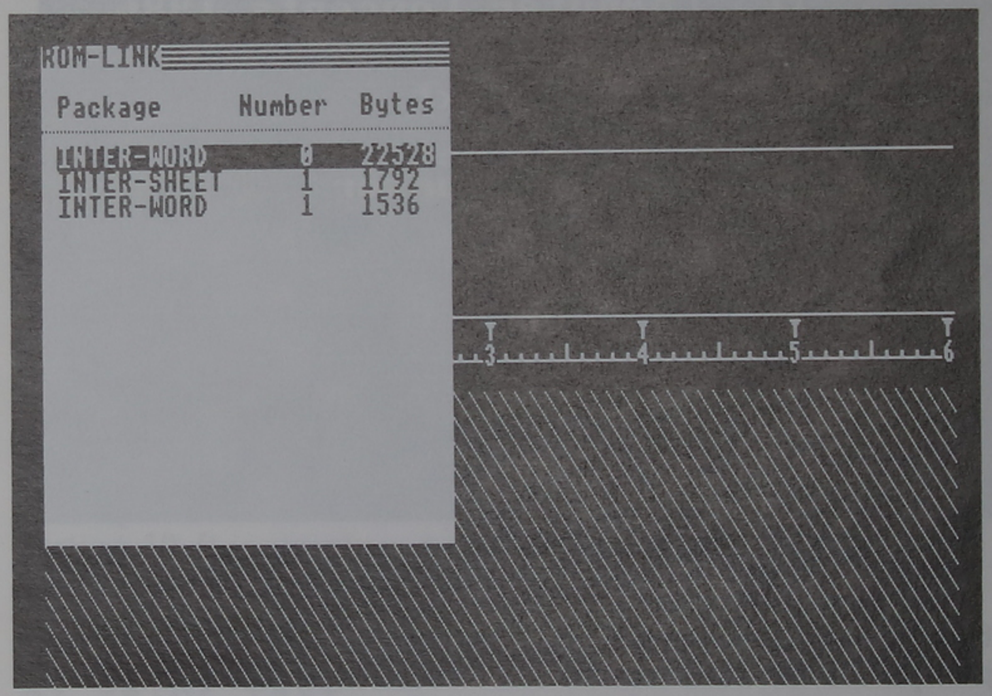

Fig.14 ROM-LINK menu.

THE MAIN MENU

16. Menu options

On entry to INTER-WORD the main menu is displayed. It is in the same style as other ROM-LINK programs and very similar to WORDWISE. Following the INTER-WORD title at the top of the screen the current package number is shown.

The complete menu is shown in Fig.15 below.

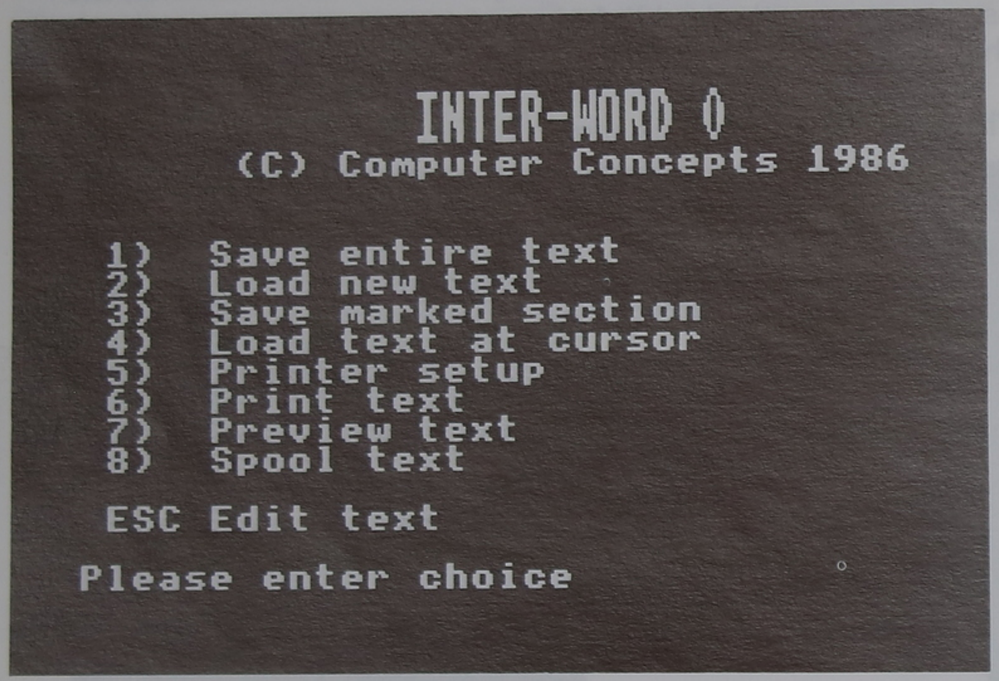

Fig.15 The main menu.

Listed below is a brief summary of each menu option. The major options are described in more detail in the following sections.

1) Save entire text

Saves the current text on to the current filing system. Files saved with this option are intended for re-loading by INTER-WORD.

The current preferences and settings for all menus are saved at the front of the file, though this is transparent to the user.

2) Load new text

This option is intended for re-loading files saved by option-1. It expects the header information containing preference and menu settings. If files from other sources are loaded with this option, all preferences will be set to their default state. If the file being loaded is too large to fit in available memory, the error message "No room!" is given and no part of the file is loaded. A safety-net prompt will ask for confirmation before going ahead with the load new text operation if more than a few lines of text will be overwritten as a result.

3) Save marked section

This option will save the currently marked section of text only. No additional data (preferences etc.) is saved, purely the text itself. If embedded commands, highlights etc. are within the marked section, they are all saved complete.

4) Load text at cursor

A text file saved by INTER-WORD options, or plain text without control codes from other programs, may be loaded with this option. The text is loaded into the current text at the cursor position. It may therefore be used to perform a 'merge' or 'join' operation on text files. If there is insufficient memory to hold the additional file being loaded, a "No room!" message is issued and no part of the new file is loaded.

5) Printer setup

This option selects the printer setup menu, as described in section-10. It is simply a shortcut method of setting options in the menu prior to printing, without having to go to edit mode to see the menu, as would normally be the case.

6) Print text

Sends the text to the currently selected printer.

7) Preview text

Previews the text on screen, usually as a final check before printing. Because INTER-WORD shows the finished document

layout whilst editing, their is little use for the preview option. However, preview does have its uses, namely for showing multiple columns, multiple copies, data imported by colon commands, etc. The preview occurs in the screen mode and colours as currently selected for editing.

Note that pressing **BREAK** whilst previewing or printing is liable to corrupt everything in memory! If it is necessary to abort previewing or printing, use the **ESCAPE** key.

There are two ways in which the preview can be paused. Holding down the **SHIFT** key whilst previewing will halt the scrolling as long as the key is held pressed. Pressing **SPACE** once will halt scrolling at that point and only continue again when **SPACE** is pressed again.

`8) Spool text`
This option saves the formatted text to disc. According to the 'spool with codes' option in the print menu, printer codes may be included or excluded from the file saved.

`ESC – Edit mode`
The **ESCAPE** key is used to select between the menu and edit mode.

***Commands**
Star commands may be issued from the menu. Users should beware of commands which will corrupt memory, such as `*COPY` etc.

Entering BASIC
To enter BASIC, or any other language, the appropriate star command can be used. However, it is advisable to use the `:KILL` command to delete all current ROM-LINK packages, prior to entering a non-ROM-LINK language ROM. If BASIC is to be used for quick calculations or such, this is not usually necessary. If **CTRL** **BREAK** is pressed and another language is entered as the highest priority ROM, for example BASIC, it will not be possible to re-enter the previously active package.

:Commands
ROM-LINK colon commands may be issued from the menu. Most colon commands supplied by INTER-WORD are for transfer of text to other ROM-LINK packages; these are detailed in later sections. Some colon commands however, are useful as general utilities. Because any ROM-LINK program can access colon commands in any other ROM-LINK program, most of the utility commands will be detailed in the manuals for the specific programs.

INTER-WORD offers two general utility colon commands. Both of these are also in the INTER-SHEET program, but they are duplicated in INTER-WORD for users without INTER-SHEET. The utility commands are as follows.

`:CANCEL`
This command, usually abbreviated to-
`:CAN.` **RETURN**
will cancel the current package completely. Because its action is drastic, a safety-net prompt will be issued – `Are you sure? (Y/N)` before the package is actually cancelled.

When a package is cancelled, an asterisk prompt appears, awaiting selection of a new INTER-WORD package or, in fact, any other ROM. Most commonly at this point the `*IW.`*n* command will be typed to enter the package which has just been cancelled. All text will have been deleted and all options will be in their default state. Other packages in memory are left intact.

`:KILL`
This command should be used with extreme caution. After confirmation, *all* ROM-LINK packages in memory, for all ROM-LINK programs, are deleted irretrievably. After use of this command, an asterisk prompt appears and awaits entry of an appropriate star command to enter a language ROM, perhaps `*IW.` **RETURN**

Accessing colon commands from other programs
As stated, colon commands in other ROM-LINK programs can be used from INTER-WORD. INTER-SHEET provides a useful

command `:PRINT` which takes a mathematical expression and calculates the result. One example of its use is to calculate average word length in INTER-WORD.

INTER-WORD shows the number of bytes used and the number of words typed. The number of bytes used is not accurately the number of characters typed, but it is good enough for most purposes.

For example: if the number of bytes used is shown as `1965` and the number of words is shown as `300` then the command:
`:PRINT 1965/300` **RETURN**
entered from the INTER-WORD menu would show the result `6.55`, that is an average of 6.55 characters per word.

This example requires the INTER-SHEET ROM to be present in the machine.

Note: The ROM-LINK menu, accessed from edit mode, may be used to list all ROM-LINK packages currently in memory.

17. Saving and spooling

This section details the use of menu options `1) Save entire text`, `3) Load text at cursor` and `8) Spool text`. All of these options perform a saving function.

Cassette operation
INTER-WORD is not designed to save and load as effectively on tape as it does on disc. Although tape saving and loading is supported, it only operates in a very rudimentary fashion. It should be possible to save and load text on the same machine, though many of the safety checks are omitted on cassette. For example, it is up to the user to ensure that files being loaded will fit within the available memory.

Filing system compatibility
INTER-WORD is designed to be fully compatible with the Acorn DFS and ADFS. Provided that other alternative systems operate fully to Acorn standards, they should operate perfectly with INTER-WORD.

Operation
The following description applies equally to options 1, 3 and 8, unless otherwise stated. This does not apply to cassette operation.

INTER-WORD is much more sophisticated than other programs when it comes to saving and loading. Most programs require the user to remember and enter filenames, whereas INTER-WORD shows them in a menu.

As soon as a save option is selected, the current directory on the current filing system is interrogated. All filenames and sub-directory names are displayed in the menu. An example is shown in Fig.16 overleaf.

***Commands**
Star commands may be issued without exiting the save menu. Simply enter the *command instead of a filename and press **RETURN**. This is useful for commands such as:
`*DRIVE 1` **RETURN**

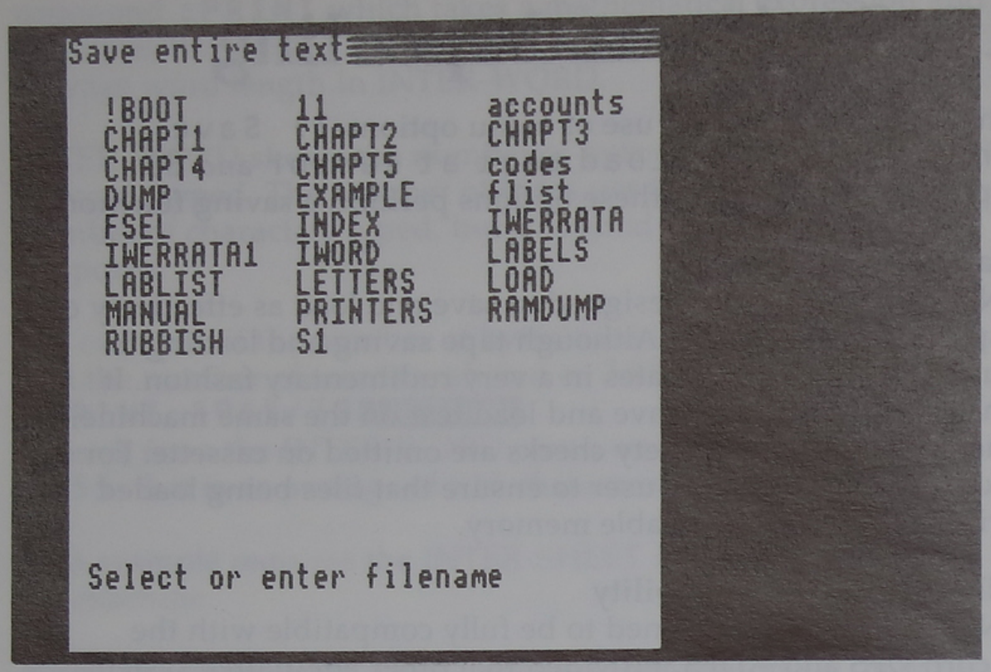

Fig.16 An example of a save menu.

ADFS use
The Acorn ADFS has a hierarchical directory structure; a directory may contain sub-directories which may in turn contain further sub-directories etc. There are two noteworthy points in relation to the use of INTER-WORD together with such systems.

Selecting a directory: The save and load menus show directory names amongst the filenames. Selecting a filename will load the file, whilst selecting a directory name issues a `*DIR` command for the chosen directory and updates the menu to show the files within.

SHIFT ↑ : will issue a `*DIR` command to move up one directory level.

Saving with a new filename
To save with a new filename the user must type the filename and press RETURN. Filing systems usually allow drive and directory to be specified as part of the filename, though the syntax may vary.

Re-saving a file
To save with an existing filename, the cursor keys may be used to move a highlight bar to any filename shown, then pressing RETURN will use the highlighted filename. As a safety-net the warning message:
`Replace old file ? (Y/N)`
is shown when attempting to overwrite an existing file. Replying with the Y key will save the file whilst any other response will not. If the file is locked, INTER-WORD asks if it should be replaced. Confirming replacement unlocks the file and saves the new version.

When using option-1, the primary save option, it is possible to cut corners on re-saving under an existing name. Whenever options 1 or 2 (load) are selected, the filename last used by either option is highlighted. This allows the file to be re-saved under the same name by simply pressing RETURN.

Note:
At any time when a filename is highlighted, pressing the COPY key will copy it onto the input line. The user may then add letters or change it in some other way to achieve the required filename.

Spooling
Option-8 will save a fully formatted version of the text. If multiple columns are in use, the spooled document is in the corresponding format.

Format settings such as center, justification, etc. are expanded to spaces, as is necessary to save formatted text.

Immediately upon selection of this option, a prompt "`With codes ? (Y/N)`" appears. This determines whether embedded printer codes are included in or excluded from the spool file. If they are excluded then the file produced will be suitable for loading generally, even into non-ROM-LINK programs. Such a format is also suitable for transmission over electronic mail systems.

Spooled text can be loaded back into INTER-WORD, but it is not very suitable. Spooled files have carriage returns at the end of each line which prevents INTER-WORD from re-formatting in a useful way.

18. Loading

This section details the use of main menu options `2) Load new text` and `4) Load text at cursor`. Both of these perform loading operations, bringing text into memory from the current filing system.

It is advisable to first read the previous section; many of the operational details are common to both saving and loading.

When a file previously saved by option-1 is loaded with option-2, the menu settings, page layout, screen colours, etc. are reinstated as they were when the file was saved. If a file from some other source is loaded then it will attempt to interpret it as if saved by option-1, and may have some unwanted characters. Exactly what will happen depends upon the source of the file and hence, what special control codes it contains. If the file is plain ASCII without control codes, the text will be perfect. If the file is from WORDWISE or WORDWISE PLUS, any embedded commands will be converted to simply the characters which make them up; these can then be deleted.

Loading a file with option-2 will, of course, delete any text already in the current package. For this reason, a safety-net prompt will ask "`Are you sure? (Y/N)`" when this option is selected, if more than a few lines of text are about to be overwritten. Simply respond by pressing the **Y** key to go ahead and load new text.

When option-4 is used, the incoming text is loaded starting at the cursor position, leaving existing text intact in memory. If a file saved by option-1, i.e. headed by menu related information, is loaded with option-4 then the heading information is stripped. Thus, a file saved with option-1 may be loaded with option-4, in order to retain current menu settings.

When either load option is selected, a menu is shown containing all filenames within the current directory. Fig.17 below shows an example of a load menu.

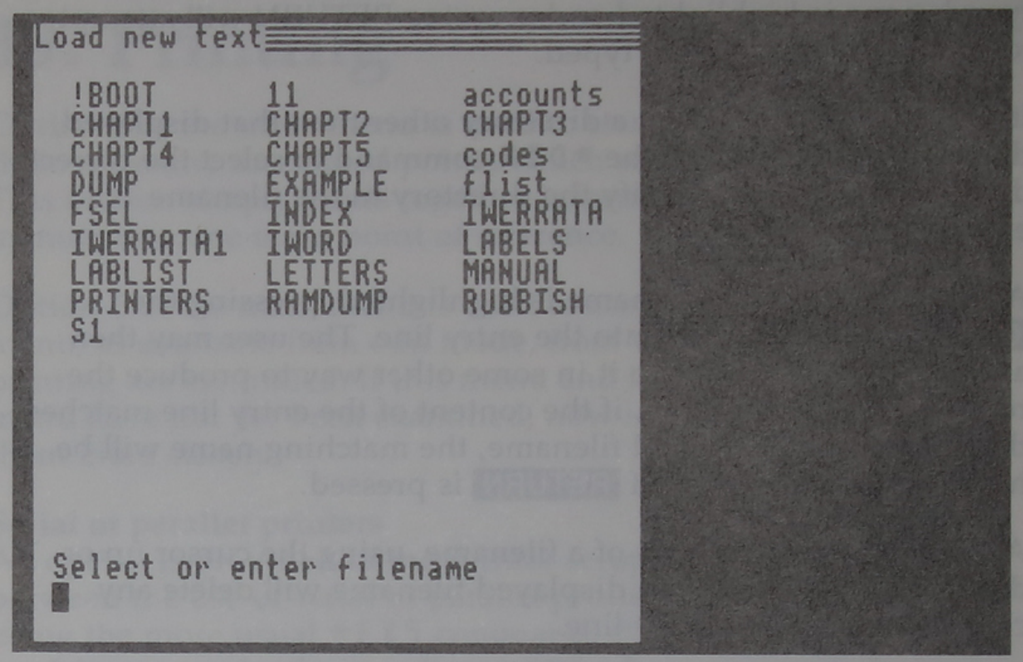

Fig.17 An example of a load menu.

Once the menu is displayed and the correct directory is visible, there are several methods which may then be used to select and load one of the files.

If option 1 has been used previously to save a file from the current package, this filename (the current filename) is highlighted. To re-load the same file it is necessary only to press **RETURN** immediately.

The cursor up and down keys may be used in the by now familiar manner to highlight any filename shown. Pressing **RETURN** will load the highlighted file.

The simplest way to specify a filename is to type one or more letters which distinguish it from other filenames. As each letter of a filename is typed, INTER-WORD will see which of those listed in the menu it matches best. If the letters entered are insufficient to distinguish between filenames, each having the same starting letters, INTER-WORD will highlight one of them. As usual, pressing **RETURN** will select the filename which is highlighted, if any. If no filenames in the list match the letters

typed, none is highlighted and pressing RETURN will attempt to load a file of the name typed.

If a file is known to be in a directory other than that displayed, the user may either use the `*DIR` command to select the correct directory, or simply specify the directory in the filename entered.

At any stage when a filename is highlighted, pressing the COPY key will copy it onto the entry line. The user may then add letters to it or change it in some other way to produce the required name. As usual, if the content of the entry line matches the start of any displayed filename, the matching name will be highlighted and loaded if RETURN is pressed.

At any time during entry of a filename, using the cursor up or down keys to highlight a displayed filename will delete any characters from the input line.

Using ADFS
When using the Acorn ADFS (or a compatible alternative) it is necessary to initialise the disc system before attempting to load a file. This is most easily done from the menu by simply cataloguing the disc. Failure to initialise in this way will result in a "`Bad FS map`" error message.

Directory names are shown in amongst filenames. A directory may be selected in just the same way as a filename, described above. When one is selected, the menu is updated to show all the filenames, and any sub-directories which it contains.

SHIFT ↑ will move up one directory level.

Loading WORDWISE/PLUS files
A file saved by WORDWISE or WORDWISE PLUS can be loaded immediately into INTER-WORD. Because embedded commands in WORDWISE/PLUS are so different from the commands used to drive INTER-WORD, they cannot be directly converted. Any WORDWISE/PLUS embedded commands in the text when loaded will still be found in the text with spaces replacing the f1 and f2 codes. It is preferable therefore to remove any embedded commands before loading the file into INTER-WORD.

19. Printing

Option-6 of the main menu is used to start printing. However, there are many associated points which require explanation. This section simply binds together information throughout the manual into one main point of reference.

Option-5 of the main menu is used to access the printer setup menu, as available from edit mode, from which most aspects of printing are controlled. If this menu and its associated code menu have not yet been examined, now is the time to look at them more closely.

Serial or parallel printers
An option is provided in the printer setup menu to select between the use of serial or parallel printers. This is easier than using the more usual `*FX5` command, though it may still be used for unusual values such as `*FX5,3`.

When using a serial printer, it may be necessary to set the correct baud rate for the particular printer in use. The default rate is 9600 baud, but can be set differently by use of the `*FX8` command, described in the section covering the printer setup menu.

Multiple copies
A number of duplicate copies of the text may be printed by setting the 'number of copies' option in the printer setup menu. Each time option-6 is selected to print, the specified number of copies will be automatically printed. This will even make multiple copies of the currently selected page range. For example, setting the `From page:` and `To page:` options both to `2` and the `No. of copies:` to `10` on the printer setup menu, will result in ten copies of just page two.

Single sheet stationery
Use of single sheet stationery, as opposed to continuous stationery, is easily provided for.

The text must be in paged form (printer setup menu, option: Continuous/Paged) with the page length set accordingly (Page

layout menu: Lines per page). Note that if the first sheet is headed paper, a number of blank lines should be left at the start of the first page of text.

To cause printing to be suspended at the end of each sheet, whilst the next sheet is inserted, the 'pause between pages' option in the printer setup menu should be set to ON. This causes printing to halt at the end of each page until the user presses a key to indicate that it may continue.

Some printers may have an automatic sheet feeder attached. This will feed a new sheet of paper each time one is required. If this is the case then the pause between pages is not required. Most automatic sheet feeders will feed the next sheet when a Form Feed character (often abbreviated to FF, ASCII code 12 decimal) is sent to it. This is the most reliable method and is provided for by INTER-WORD. With the 'Send form feed' (printer setup menu) option set to ON, a FF character is sent after the footing on each page. It is necessary to have a footing at the right position in the bottom space for this to work, even if the footer is blank.

Multiple column printout
With the 'number of columns' option in the printer setup menu set to a number between 2 and 5 inclusive, text is printed in that number of adjacent columns on each page. This will not operate whilst in multi-file mode.

Each column is taken from the contents of each subsequent page. For example, with three columns of text, the first page printed will show the text from pages 1, 2 and 3 and the second page will show pages 4, 5 and 6, and so on. Pages are constructed according to current settings of the page layout menu, so that the current top and bottom space are printed at the top and bottom of each multi-column page and numbering within footers is according to the number of pages actually generated.

Option-7 may be used for previewing multi-column text which cannot be seen during editing.

The width of each edit mode page remains the same when printed in multiple columns. Therefore it is necessary to reduce the width of each page, controlled by rulers, so that the total width of the adjacent columns will equal the required printed width. The width of each page includes its left margin. A further margin, set by the 'column indent' option in the printer setup menu is also added between each column.

The column indent is a margin printed in front of each column, even if only one column is being used.

Printing the marked section
If markers are set within the text when the print option is selected, a prompt `"Print marked section"` allows printing of just the marked section in isolation. Note that it is not possible to print or preview just the marked section in multiple columns.

Note 1: Any embedded printer codes, as entered from the embedded command menu, which occur in the text prior to the marked section will still be sent to the printer. This will rarely have any adverse effect and is in fact more of an advantage.

Note 2: It is important to ensure that the printer paper is correctly positioned with the top of the sheet immediately opposite the print head for pagination to be correct. When using a tractor feed mechanism which 'pulls' the paper through the printer, it may be necessary to turn the paper up to the next full page in order to start printing on the first line of the first sheet. This is an unfortunate effect of current printer design, rather than any reflection upon INTER-WORD's capabilities.

Note 3 Automatic perforation skip, a feature provided on most printers, is sometimes turned on with an internal switch when printers are supplied. This is not required when using INTER-WORD and should be turned off (see printer manual). If it is left on, there will probably be occurrences of six or seven unwanted blank lines appearing on the printout, but not on the screen.

20. Function keys

INTER-WORD function keys have pre-defined operations, but may also be programmed in the normal way.

User-defined strings – *KEY
Using the normal *KEY command, function keys may be programmed with strings of characters. The characters are then generated by holding down SHIFT and CTRL when pressing the appropriate function key.

For example, if the string of characters "INTER-WORD" occurs frequently when entering text, it may be stored in a function key with the command:
*KEY0 INTER-WORD RETURN
from the main menu. In which case, pressing SHIFT CTRL f0 whilst in edit mode would type the programmed string of characters into the text wherever it is required.

Programmed keys can be equally useful in the INTER-WORD main menu. Whilst in the main menu, pressing the function keys alone will generate the programmed strings. A pair of commands such as:
*KEY0 *IW.0|M RETURN
*KEY1 *IW.1|M RETURN
could be used to give single-key commands which swap between INTER-WORD package 0 and package 1.

Note that the pair of symbols |M indicate the code for the RETURN key. This is an operating system convention.

Edit mode function keys
Whilst in edit mode, all of the function keys perform a fixed operation (in addition to programmed strings discussed above). Some operations are performed by pressing just a function key whereas some are performed by holding down the SHIFT key at the same time. The action of each key is described below.

Status menu – f0
Pressing f0 will display the status menu. This is also the menu from which all the major sub-menus are accessed.

Embedded command menu – f1
This will display the embedded command menu. If no embedded command already exists at the current cursor position then this key may be used to set one; if an embedded command already exists at the cursor position, the menu will show the exact details of all the settings. An embedded command is shown in the text by inverting the ink and paper colour on the particular character, in the same way as a single marker is indicated.

Full details of embedded command settings are given in the specific section.

Insert ruler – f2
Pressing f2 will insert a ruler into the text at the beginning of the current line.

Insert marker – f3
This key is used to mark a section of text. Pressing the key once inserts a single marker. Pressing it a second time, at a new position, inserts the second marker and inverts the marked section. Pressing it again will remove the previous markers and set a new first marker at the current cursor position. Note that pressing CTRL R will delete any markers currently set in the text.

Further details may be found in the section devoted to marked sections.

Text alignment and justification
INTER-WORD allows text to be aligned with the ruler left margin, centered between the margins, aligned with the right margin, or justified between the margins.

Each of these options is set by defining an area in which the alignment type applies. Any text later entered within that area is also arranged similarly.

All of the following options may be set on a marked section using separate options in the marked section menu. The following function keys will operate on the currently marked

section *only if the cursor is currently positioned on the marked section*. Otherwise these keys will operate on the current paragraph at the cursor. A paragraph is defined as the text which lies between two carriage return characters.

It is important to realise that the use of these keys differs from the use of the near-equivalent menu options, which will *only* work on the marked section.

Align left – f4
This is the default arrangement for all text. It causes all lines of text to start directly underneath the ruler left margin indicator.

Centre – f5
Although this function will operate on entire blocks of text, it is only sensible to use it on lines which each end with a return (shown when the preference menu screen codes option is set ON). As characters are entered within a centered region the line is continually re-centered. The effect may seem quite unusual at first, but is far easier than having to manually re-center text with a command whenever it is changed.

Align right – f6
The last character on a line of text which is aligned right is always directly below the ruler right margin indicator. As with the center option, it is only reasonable to use this arrangement on lines which each end with a return. It will operate on lines without returns, but the effect is of little use.

As usual, any characters subsequently entered into the right aligned region cause the line to re-format continually. This has the effect of moving all of the line to the left of the cursor one place further left, with the new character inserted at the cursor. The right hand end of the line remains directly under the right margin marker at all times.

Justify – f7
Justified text is 'padded' with extra spaces between words within the line, so that the first and last words in the line are directly below the left and right margin indicators respectively.

The spaces inserted to fill-out the line are not stored in memory as they are on some word processors, so that text storage space remains the same for justified text.

New characters entered within the justified region cause the line to continually re-format, showing the line justified at all times. Because of the extra time taken to handle justified text, it may be advisable to turn justification on only when the text is completed prior to printing.

Style changes
Several styles of text can be shown on-screen. There is the normal style, a bold syle, an underlined style and a dotted underline style. The following function keys may be used to set each of these styles on the region of text at the cursor.

These functions will operate on the current marked section *only if the cursor is currently positioned on the marked section*. Otherwise, they operate on the paragraph at the cursor, i.e. all text between two return characters. Obviously for precise style change on, say, just one word, it is necessary to mark that region. Pressing CTRL Z will mark just the word at the cursor, after which a style change may be applied by pressing the appropriate keys whilst the cursor is on the marked word.

All of these style changes are available in the marked section menu, except that they *only* operate on a marked section, not on the current paragraph.

Underline – SHIFT f4
The region of text at the cursor, as defined above, is underlined. New text entered within the region is also underlined. The 'normal' style must be selected in order to remove underlining.

Bold – SHIFT f5
The region at the cursor will be emboldened. New text entered within the region is similarly shown in bold style characters. The 'normal' option should be selected to reverse the effect.

Dotted – SHIFT f6
The region at the cursor will be shown with a dotted underline.

This is intended as a general style for which the user may define any printer effect. The default printer effect is defined as italic for an Epson or compatible printer. Note that some printers may not have the ability to show italics.
Any text subsequently entered within the region will also be shown with dotted underline. The 'normal' style should be selected to reverse the effect.

Normal – SHIFT f7
This will cause the region of text at the cursor to be reset to the normal character style. This has the effect of clearing all of the previous three character styles.

Operations on marked text
Delete marked section – f8
As with the equivalent option in the Marked section menu, this will delete the currently marked section of text. If no section is marked, an appropriate error message is displayed, but no harm is done. If the section being deleted is larger than 255 character in size, a warning message prompts the user to confirm the deletion in order to avoid large scale accidental deletion.

Copy marked section – f9
As with the equivalent option in the Marked section menu, this will copy the currently marked section of text to the cursor position.

Move marked section – f9 f8
Although no single function key is provided to move a marked section of text from its current position to the cursor, it is easily achieved by copying the marked text, then deleting the marked text. Of course, if the marked section is large, it will be necessary to confirm the deletion operation.

21. Using ROM-LINK

In order to understand how to use ROM-LINK commands correctly, it is necessary to understand just what the ROM-LINK system is. This section simply provides the user with background information on the ideas and operational techniques behind the ROM-LINK system. Users already familiar with ROM-LINK through other programs in the suite need not read this section. The next section describes the INTER-WORD colon commands provided for data transfer.

Many so-called integrated programs allow transfer of data only by saving the data on disc and re-loading it from another program. On the whole, this is both slow and inconvenient. The ROM-LINK system is designed to provide true integration. Not only can data be passed by file in the usual manner but it can also be transferred IN-MEMORY.

With a set of data for one ROM-LINK program in memory, another ROM-LINK program can be used immediately without saving the data on disc. The second program can 'ask' the first for some or all of the data. It is then transferred in-memory for use by the second program. In fact, more than one set of data can be handled by the *same* ROM-LINK program, allowing as many as sixteen packages of data to be held in memory by one or more programs all at the same time.

Each set of data belonging to a program is referred to as a *package*. There could be, for instance, five separate spreadsheets in memory at the same time, but all used by the same program. Only one package is actually used at one time, but any other can be selected for use and data can be read from any other package into the current one. The term package is used throughout the descriptions of ROM-LINK commands. It must be remembered that this refers not to a program, but to one set of data, of which there can be as few as one or as many as sixteen in memory at once.

Each program implements a common handling of ROM-LINK commands. All ROM-LINK commands are preceded by a colon

character (`:`) to distinguish them from any other commands. They are often therefore called 'colon commands'. Colon commands are provided for the transfer of data and as simple utilities.

Importing and Exporting.
Only one package of data is ever 'active' at any one time. Other packages lie dormant in memory waiting to pass their data to the active package, or to be themselves selected as the active package. Most of the ROM-LINK programs recognise commands which request some or all of their data to be exported. There will usually be a variety of commands for transferring different amounts or different types of data, as is the case with INTER-WORD. For instance, the spreadsheet program INTER-SHEET offers commands such as GETBOX to return the result from a single spreadsheet box, and GETBOXES which allows an area of boxes to be transferred with one command.

At any time the active package may ask any dormant package for any of its data by using the colon commands implemented in the ROM which owns the dormant package. For instance, with a dormant spreadsheet package and an active INTER-WORD package in memory, the active INTER-WORD package may request data from the dormant spreadsheet. The dormant spreadsheet package is temporarily 'woken' by the transfer request and processes the command. The data is passed back to the active package which remains in control. Only the active package can request data, the dormant package exports the requested data, and the active package imports it. It should be understood that dormant packages are only used when specifically requested to supply data.

Because there may be many packages in memory at the same time, it is necessary to distinguish between them. Otherwise a request for a spreadsheet box might get a result from *all* of the dormant spreadsheet packages! Each package is given a unique identity consisting of the name of the program to which it belongs and a package number between 0 and 15 inclusive. For instance, INTER-WORD0, INTER-WORD1 and INTER-CHART0 may all exist at the same time. Whenever a request for data is made, the name of the dormant package must be specified.

These names can be abbreviated, usually to the first two letters of the name and a full stop plus the package number; for example, `IW.1` and `IS.11`.

Utility colon commands
INTER-WORD offers two utility commands, described in the main menu section, and can make use of utility commands in other packages as well. For instance, INTER-SHEET offers several useful colon utility commands, all of which can be used by INTER-WORD. Whenever a colon command is entered, the ROM-LINK program in use will execute the command if it can. If it fails to recognise a command, it will offer it to other ROM-LINK programs present in the machine (regardless of whether they have yet been used). If the command is recognised by another ROM-LINK ROM, it will execute the command and return control to the ROM from which it was issued. If the command is not recognised, then a message "`Bad ROM-LINK command`" will be issued.

INTER-WORD colon commands

INTER-WORD offers a wide variety of colon commands for exporting data. Any active ROM-LINK package may issue the INTER-WORD colon commands to request data from a dormant INTER-WORD package.

The general syntax for a colon command to import data is `:` followed by the Package identity and number, followed by a second `:` followed finally by the command itself. Some of the commands require further data following them, which will be detailed below for INTER-WORD colon commands or in the respective manuals for others. This is not as complicated as it may at first seem. In fact, much of the information can often be abbreviated or omitted.

The initial colon and package identity need only be specified if another package of the same type exists in memory. For instance, a fully specified command to get box A1 from INTER-SHEET0 would be:

`:ISHEETØ:GETBOX A1` RETURN

But if no other INTER-SHEET packages exist in memory then the package may be omitted thus:

`:GETBOX A1` RETURN

Furthermore colon commands may be abbreviated in the same manner as star commands, to the fewest number of letters needed to distinguish it from all other colon commands. A shortened command name must be followed by a full stop (`.`). For example, the above can become simply:

`:GETB.A1` RETURN

When it is necessary to specify a package identity, the name of the package may be abbreviated in the usual manner. For example, INTER-WORD0 can be abbreviated to `IW.Ø`, INTER-SHEET to `IS.`, etc. INTER-WORD colon commands may be abbreviated in the same way.

The complete list of commands implemented by INTER-WORD is detailed below.

Where a parameter is specified as *"string"*, a series of characters is required. Note that this may include special characters specified in the normal operating system convention, e.g. `|M` specifies a return character. These codes are the same as those used by `*KEY` commands.

All commands which import data use a ROM-LINK pointer, perhaps best imagined as an invisible cursor. Initially this is set to the top of the text, but a specific `:MOVETOP` command should be issued before relying on its initial position. Thereafter, commands which transfer data move the ROM-LINK pointer as each character is transferred. Similarly, data transferred is taken from the specified package starting at the ROM-LINK pointer position. Several commands are provided for moving the ROM-LINK pointer specifically to the required position. If an attempt is made to import data from a package in which the ROM-LINK pointer has already reached the end, and error message will be issued and any printing or previewing which may have been in progress will halt.

`:IW.`*n*`:GETTEXT`
Transfers all text from INTER-WORD package '*n*'. This moves the ROM-LINK pointer to the start of the specified package before starting to import, and afterwards leaves it at the end of the text, as would be expected.

`:IW.`*n*`:GETMARKED`
Transfers all text within the currently marked section from INTER-WORD package '*n*'. The ROM-LINK pointer is left immediately after the marked section, following the data transfer.

`:IW.`*n*`:GETTO "`*string*`"`
This command will transfer all text up to, but not including, the character or string of characters specified. For example, the command:

`:IW.1:GETTO "|M"` RETURN

will import all characters up to the next return, from INTER-WORD package 1. The ROM-LINK pointer is left *after* the specified terminator string.

`:IW.n:MOVETOP`
This command instructs the ROM-LINK cursor to be moved to the top of the text in the specified INTER-WORD package '*n*'. Note that entering a package also sets its ROM-LINK pointer back to the top of text.

`:IW.n:MOVEAFTER "string"`
Moves the ROM-LINK cursor to the first character immediately after the specified string.

`:IW.n:MOVEFORWARD (number)`
This command will move the ROM-LINK cursor forward from its current position by a number of characters. The *number*parameter is optional, indicated by the parenthesis (), and if omitted defaults to one character position. The maximum number which can be specified is `255`.

`:IW.n:GETCHAR (number)`
This command will transfer a number of characters from the ROM-LINK cursor position onward. The *number* parameter is optional, and if omitted will default to one character. The maximum number of characters which may be transferred with one command is `255`.

Special codes in imported data
By default all text imported will have any special codes, such as rulers, style changes, etc. stripped. This is so that other ROM-LINK packages are not fed data containing codes only meaningful to INTER-WORD specifically. If these codes are required when transferring data from one INTER-WORD package to another, any of the above colon commands may have the three characters `(C)` appended. The `(C)` stands for 'Codes' and indicates that codes should be included when transfer takes place.

For example, the command:
`:IW.0:GETTEXT (C)` RETURN
Will transfer all text from package-0 to the current package, including rulers, style changes, etc.

Embedded colon commands
Using the embedded command menu (f1) it is possible to

embed data importing colon commands within text. The effect of this is that when the text is printed, the commands are executed at the exact point in the text at which they are embedded. They will therefore import data from another package and place it *temporarily* where the embedded command occurs. Any text imported during printing or previewing is formatted according to the current ruler at that point etc.

When multiple copies are printed or previewed, each copy will re-issue the colon commands, causing the ROM-LINK pointer to work gradually through the text in the source package. Perhaps the commonest use is to import one address for each copy of the same letter, from a package containing a list of names and addresses. See appendix-A for further details of mail merging.

INTER-WORD utility commands
There are two general utility commands provided by INTER-WORD. Both also exist in the INTER-SHEET ROM, but are duplicated in INTER-WORD for the benefit of users who do not have INTER-SHEET in their machine. Both commands should be used with care, since their effect is to delete large amounts of data irretrievably.

`:CANCEL`
This is used to delete the current package completely. After cancelling the current package, the user is effectively left in 'limbo', in no particular package. The operating system prompt appears and the user should then select a ROM, usually the same or a different package. See the example below.

Because the effect of `:CANCEL` is so drastic, a safety-net prompt `Are you sure? (Y/N)` forces the user to confirm the action before it is carried out.

The usual case in which `:CANCEL` is used is to delete all text in the current package and re-set all menu options to their default settings. In this case the object is to end up in the same package but with no text. This means cancelling the current package and then selecting it again. To do this from package 0, enter the following from the main menu:
`:CAN.` RETURN

and INTER-WORD will respond with the safety-net message asking for confirmation. Press **Y** to confirm the action. This leaves the cursor on a line with just an asterisk as a prompt. Type:

***IW.0 RETURN**

to re-enter the package from scratch.

`:KILL`

When it is necessary to delete *all* ROM-LINK packages currently in memory, the `:CANCEL` command would be rather tedious! Instead, the `:KILL` command is provided to delete all packages in memory at once. Like the `:CANCEL` command it forces confirmation and leaves the user with just an asterisk prompt. It is then necessary to enter a package name and number, or the command for entering some other language such as `*BASIC`.

Note that it is advisable to use the `:KILL` command before entering a non-ROM-LINK package. This deletes all trace of the packages and allows a clean entry into another ROM.

23. Embedded commands

Embedded commands are those which are stored in the text, in order to achieve some particular effect at exactly that point. Rather than show them on-screen at all times, INTER-WORD 'hides' them so that the screen format remains intact. It does this by storing the commands where they are entered, but only indicating their position, instead of showing the whole command. When an embedded command is put 'underneath' a character, the character hiding it is shown reversed, i.e. pen and paper colours swapped (in the same way as a single marker is displayed).

Function key **f1** is used to insert an embedded command at the current cursor position. In keeping with other INTER-WORD operations, insertion of an embedded command is menu driven. The user need only press **f1** and make a selection, rather than having to memorize complicated command words.
Although it is possible to select more than one option from the menu to be inserted at the same position, it is more usual to select only one.

Moving on to a reversed character which indicates a hidden embedded command and pressing **f1** displays the menu, showing any options which were set at this position. It may then be changed, further options set, or deleted.

Deleting an embedded command is the first option in the menu. This will delete all options shown on the menu existing at the cursor position. They cannot be removed in the same way as text by using the delete keys, because they do not occupy a space on the screen, but can be deleted as part of a marked section. Note that deleting the character at which the embedded command is stored, with a usual delete key, will simply move the embedded command to the character now occupying the same position. This can cause embedded commands to get 'stacked', but only the last is shown if the menu is displayed.

Options concerned with headings and footings are shown on the second half of the menu. These are discussed in more detail in the next section.

The embedded command menu is shown in Fig.18 below.

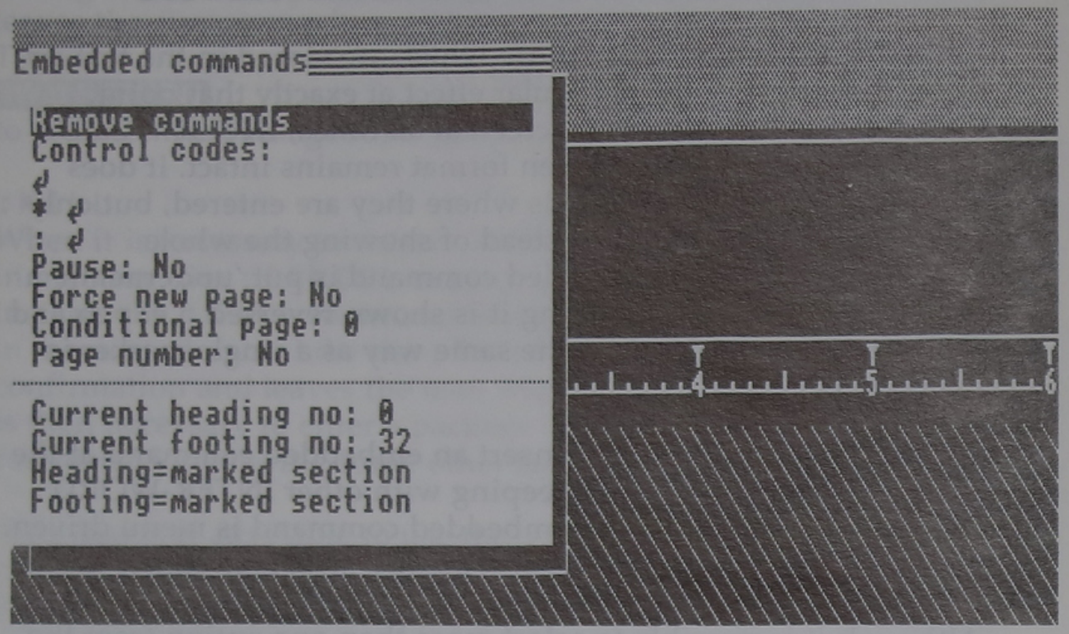

Fig.18 Embedded command menu

`Remove command:`
This option should be used to delete the embedded command at the current cursor position. If more than one option is set at the same point, they will all be deleted. (In the unusual case where embedded commands are 'stacked' on the same character position, only the embedded command shown on the menu is deleted; a second command under the first would then become visible.)

`Control codes:`
Printer control codes can be embedded at any point in the text. The codes should be entered under this option as decimal numbers, each separated by a comma. Although three printer effects may be placed anywhere in the text, represented on the screen as underline, bold, and dotted, any other printer codes must be inserted specifically as embedded commands using this control code option. For example, if a character is to be printed in subscript mode then embedded commands would be used. One embedded command to turn subscript mode on would be

inserted on the character, and one to turn it off would be inserted after the character. Control codes only have any effect when printed; (they may also be included in spooled files).

`*`
Star commands for the operating system or other ROMs may be inserted as embedded commands with this option. The line should be entered following the * and should conform to whatever syntax is defined for the command in the appropriate manual. Obviously commands which corrupt memory will do just that, destroying the text in memory. Therefore, avoid commands such as `*COPY`, `*COMPACT`, etc.

`:`
Colon commands, used for importing data during printing, may be embedded within the text. Their usual syntax should be used. For example, the command:
`:IW.2:GETMARKED`
Every time the text is printed, this command will import the marked section from INTER-WORD package 2, printing it within the text at the position of the colon command. For more detail, refer to the previous section.

`Pause:`
Occasionally it is necessary to cause printing to pause at one or more specific points in the text. The most frequent use is for halting on an unusual character whilst a printer daisywheel is changed, and this usually implies another pause to change back. It is important to note that the pause will occur immediately before the character under which the pause command is hidden. To insert a pause command at the cursor position, the option should be set to `Yes` in the menu.

`Force new page:`
When starting a new chapter, for example, it is usual to leave the end of the current page blank and restart at the top of the following page. This option, when set to `YES`, will insert an embedded command into the text at the current cursor position. This command is a slight exception to the rule insofar as it is not shown by reversal of the character at the cursor. Instead, its position is obvious, causing following text to be shifted to the

start of the page below. Any text subsequently entered above the command will continue to fill the page, but a new page is always forced at the point of the embedded command. The embedded command can be deleted by positioning the cursor anywhere on the forced blank lines and using the 'remove command' option.

It will be noticed that there is always a 'force new page' command at the end of INTER-WORD text. This causes the final page always to be completed, even when the text entered falls short.

`Conditional new page:`
This option may be used when a table or even a particular paragraph will not fit wholly on the end of a page and is 'split' across a page break. If a table is, say, ten lines long, this command should be used with a setting of `10`. The setting simply defines the number of lines which are to be kept together as a single 'block'.

`Page number:`
Anywhere within a page of text, selecting `YES` to insert this command will insert the current page number at the cursor position. This does not simply type the current page number into the text, but does in fact store an embedded command. If the number of the page changes, so too does the number displayed by this embedded command. It may be inserted in a heading or footing to show the correct page number on every page.

An embedded page number is not highlighted by reversed text because it is obvious where the command is. It also differs from other embedded commands in that it may be deleted using any of the delete keys as if it were normal text.

`Current heading No.:`
This shows the number of the heading currently being used and also allows it to be set. If a different heading is to be used for the current and following pages, its number is set by this command embedded in the text. Note that only on the following line will this heading number come into force as the current

one, and only at the start of the next page will the heading start being used (i.e. to use heading number 3 on page 2, the number must be changed during page 1).

`Current footing No.:`
As above, except applied to the current footing number. However, the footing number will apply for the current page, since the command will be set before the footing occurs.

`Heading = marked section`
This option is used to assign a line of marked text to be stored under the heading number current at this point in the text (Note: a change of number in the embedded command menu does not take effect until the following line).

`Footing = marked section`
As above, but assigns to the current footing number.

For more details about headings and footings, refer to the next section.

NOTES
Embedded commands provide the user with great flexibility; access to star commands, colon commands, printer codes, and so on. Such flexibility inevitably allows the careless user to play havoc with the system.

INTER-WORD, for technical reasons, is only designed to allow a maximum of approximately 250 stored characters per screen line. Obviously with a limit of 120 printed characters per line this is not likely to be a problem in normal use. However, embedded commands are included within that length. If the user inserts several embedded commands within one line, each with long star, colon, or printer commands within them, unpredictable results may occur and an appropriate error message may be issued.

Older word processors, such as Wordwise, relied very heavily on embedded commands. Because INTER-WORD shows the finished document layout on-screen, embedded commands are used far less often.

24. Headings and footings

Headings and footings are lines of text that appear in the top and bottom space of every page. a frequent requirement is to have a line of text appear on the top of every page as a title, and perhaps a page number on the bottom of every page.

Up to sixty different headings and footings can be defined, each being assigned a unique number. In practice, it is likely that only two or three will be required. It is possible to specify which of these will be seen by putting an embedded command in the text. For example, if an embedded command specifies the current heading number to be 4 then heading number 4 is displayed in the top space on *following* pages.

At any point in the text, further embedded commands may be inserted to select a different heading or footing number, and text may be assigned to the current heading or footing number at any time.

It may seem strange at first, but the heading footing numbers are common to each other. That is to say that heading number 5 and footing number 5 refer to the same thing. If a line of text is assigned to heading number 6, it may also be used in a footing wherever number 6 is specified as a footing number. Therefore, envisage just one list of numbers 1 to 60, each of which may have a line of text assigned to them. At any stage in the document, one of these lines can be displayed as a heading or footing, or both.

Once the heading and footing numbers are decided, it is a simple matter to define the text to be used. This is done by entering a line of text in the normal manner and marking it, using f3. If the current heading number is 4, set from the embedded command menu on a *previous* line, selecting the 'Heading = marked section' option from the embedded command menu will assign the marked text as heading number 4.
When a heading or footing is defined, the line of text is stored in memory, together with a copy of its current ruler. This means

that the line used need not remain amongst the text of the document itself, and can be deleted once assigned. It is often a good idea to retain any definitions at the end of the text, not deleting them until the document is finished. This simply makes it easier to make changes to the definition should the need arise.

Current heading/footing number
The embedded command menu has four options related to headings and footings. The first two show the current heading and footing numbers being used for each respectively.

By default, heading/footing number 1 is used for headings and number 2 is used for footings. Number 1 is pre-defined as nothing, i.e. a blank line. Number 2 is pre-defined as a centered line containing the word "Page " and a page number embedded command.

Either of the lines may be replaced by one of the user's choice, or others may be added. At any point within the text embedded commands may be inserted, selecting a new heading/footing number to be used for the heading or footing for following pages.

When changing the heading or footing number, the change does not come into effect until the following line. Therefore, ensure that the cursor is moved on to the following line before attempting to assign a marked section to the new number. When the number has been changed, a new heading will not be used until the next page, whereas a new footing will be used at the end of the current page.

Defining a heading/footing line
The second two options are selected simply by pressing RETURN whilst highlighted. These options assign the currently marked line of text to be the current heading or footing, according to the current number set for each.

A line of text can be stored as the heading/footing of any existing number, in which case it replaces the previous definition, or it may be a new number.

Example footing
Heading and footing lines may contain any of the usual embedded commands. For example, in order to change the footing to show page numbers in the form "99", i.e. without the word `Page` before it, follow these simple steps:

(1) Press **f1** to display the embedded command menu.
(2) Choose a new footing number, e.g. set the current footing number to `10` and press **ESCAPE** to exit the embedded command menu.
(3) Move the cursor down one line. (Create a blank line if there isn't one already, by pressing **RETURN** and moving back on to that line)
(4) Press **f1** to display the embedded command menu, select the `Page number` option, and press **ESCAPE** to exit. The current page number will be shown at the cursor position.
(5) Press **f4** to center the page number.
(6) Mark the line in the normal way. i.e. move to the line start and press f3 then move to the start of the next line down and press f3 again.
(7) Finally, press **f1** and select the option "`Footing=marked section`".
Moving down the text will then show that the footing has changed to show just the page number.

Appendix A
Mail merging

Mail merging is the name usually given to the process of combining a standard letter with each of a series of names and addresses. Automatically, the letter is printed with one of the names and addresses. This is a straightforward exercise in INTER-WORD, once the underlying principles have been understood.

It is important to read section-22, "INTER-WORD colon commands" before proceeding. The colon commands which import data into the current package are the mainstay of the mail merging process.

In general, it is necessary to use two INTER-WORD packages to achieve mail merging. One of these holds a list of names and addresses (and whatever other information may need to be included), while the other package holds a standard letter. The standard letter must have one or more embedded colon commands at any points at which data is to be inserted. Once this is set up, the number of copies is set as required and printing can go ahead. For each copy printed, one of the names and addresses will be read and included in the standard letter.

The rest of this section goes through the necessary steps in more detail, as a typical example.

Step by step Mail Merging.

Starting afresh having just switched the computer on, create two INTER-WORD packages by entering from BASIC:
`*IW.0` **RETURN**
and from the menu then enter:
`*IW.1` **RETURN**
The first of the two packages will be used to hold the standard letter, while the current package will be used to hld the list of names and addresses.

Press ESCAPE to enter the edit mode. (You may wish to set preferences for screen colours etc. at this point). Usually when mail merging there will presumably be a list of names and addresses already on file, which would now be loaded. Given that this is a first example, it is necessary now to type in a few names and addresses for trial purposes. First, press CTRL f4 to display the page layout menu and turn paging `Off`. This will avoid the page break lines and top and bottom space which would otherwise get in the way.

Names and addresses can be in any one of a number of formats, but in this example each line of an address will start on a new line and a blank line will be left between each address. The blank line between addresses allows one address to be distinguished from another by INTER-WORD. An example is given below. Ensure that the first line of the first name and address starts on the first available line.

```
Computer Concepts,RETURN
Gaddesden Place,RETURN
Hemel Hempstead,RETURN
Herts., HP2 6EX.RETURN
RETURN
Mr.J.Nessa,RETURN
The corner shop,RETURN
Watford High street,RETURN
HERTS.RETURN
RETURN
Tobias Gilphanget,RETURN
The Crown Lion Pub,RETURN
Red Water lane,RETURN
Hemel Hempstead.RETURN
RETURN
```

And so on. Notice that the blank line is just a carriage return character, and that the character immediately before it is the carriage return on the previous line. In short, this allows one name and address to be specified as 'all text up to a pair of carriage returns'. This will be referred to later

Next, switch back to INTER-WORD package 0 by typing:

`*IW.0`RETURN
from the main menu. Either load a letter (menu option 2) or enter edit mode by pressing ESCAPE and type a simple letter into memory, omitting the recipient's address and any space required for it.

When the letter is complete, decide where the address should be inserted and, in edit mode, move the cursor to that position. Leave a blank line above and below the address position; exact adjustment can be done later.
Press function key f1 to display the embedded command menu. Move the inverted bar down the menu by pressing the ↓ cursor key until it highlights the line starting with a colon (`:`). Now type:

```
IW.1:GETTO"|M|M"
```

This will get all text from the current ROM-LINK pointer, up to a pair of carriage return characters. As described earlier, the pair of carriage returns separate one address from another.

Press ESCAPE to exit from the menu, remaining in edit mode. Moving the cursor away from the current position will now leave behind an inverted square. This indicates the position of the embedded command just entered. Moving back on to that square and pressing f1 again will show the colon command embedded at that position. Press ESCAPE to exit the embedded command menu again.

Press ESCAPE to enter the main menu and select option-5 (printer setup). Change the number of copies to match the number of addresses stored in INTER-WORD package 1 (normally the number of names and addresses that have been loaded into INTER-WORD 1, although entering a higher number will not matter because INTER-WORD will stop when it reaches the end of text.)

Now, while still at the main menu, type:
:IW.1:MOVETOPRETURN

This will make sure that the ROM-LINK pointer is at the top of the name and address list.

As a check, prior to printing, menu option-7 can be used to preview the result on-screen. If this is done, it will be necessary to use the `:MOVETOP` command to move the ROM-LINK pointer back to the start of the list. Finally, use option-6 to print the results on paper.

If it is necessary to halt printing before completion, just press **ESCAPE**. This will operate as normal and will leave the ROM-LINK pointer at the position reached so far. To continue from the same point, simply select menu option 6 again without using the `:MOVETOP` command, unless deliberately starting from the top of the list again.

This is only a general description, so it may be necessary to use knowledge gained from previous sections to set the correct page length, printer type, single sheet stationery, etc.

Because all the names and addresses have to be loaded into INTER-WORD there is only room for about 200 to 250, leaving perhaps about 3K for the letter which would normally be enough. To cope with larger mail merging lists it will be necessary to either divide the list into memory-size chunks to work within the memory constraints, or use the ROM-LINK compatible database – INTER-BASE. By using INTER-BASE, it will be possible to work from a name and address list on disc, rather than in memory.

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