

BrunWord Elite

Wordprocessor & Page Layout System
for the Amstrad CPC6128
including resident Spelling Checker

Brunning  Software

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THE

BrunWord Elite

OPERATING MANUAL

BrunWord Elite is written to be used on the Amstrad CPC6128 but also has built in software to work on an Amstrad CPC464 fitted with a Dk'tronics 64K or 256K memory expansion.

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BrunWord 6128 (Elite)

1.1. The First Step

Make sure that both the computer and the printer are switched OFF. Then connect the special printer lead, with the 8 bit printer status port, between the computer and the printer. (BrunWord Elite will not work correctly if any other lead is used). Switch ON, insert the BrunWord Elite disc and type RUN "BRUNWORD" <ENTER>. When the main menu is displayed, press L, type TUTOR1 <ENTER> and then follow the instructions on the screen. When TUTOR1 is finished, work through the example on page 18.

1.2. Introduction

BrunWord Elite incorporates all the features of BrunWord 6128 except that the 10 part printer codes are used purely for printer control or 'IBM' boxes. The first half of this book is a modified version of the BrunWord 6128 manual.....

BrunWord 6128 is a completely original programme designed to avoid the complications and slow response associated with many word processors. Once the programme, spelling checker and dictionary are loaded no access to the disc is needed which means no disc delays for any of the routines. This, and being 100% machine code help to give an almost instant response to most routines.

There are three screen modes, 40, 80 and 128 columns which are automatically selected according to the setting of the right margin. Text is normally entered in the 80 column mode and when the last word in the line reaches the right margin the whole word instantly transfers to the next line. If this happens part way through a paragraph then the following words are instantly grouped into full lines. Insert and overwrite modes are available and even touch typists will be unable to beat the programme. The true print format is always displayed.

Both margins can be set for each paragraph and the whole text or just one paragraph can be right justified with one command. BrunWord uses a complex process for justifying that adds spaces after punctuation and then between words alternating left and right towards the centre of the line. This ensures that the printed text looks balanced. When the command to justify the whole text is used, the programme displays the text as it is adjusted and updates the Line/Col/Page display as it progresses. This is a fast routine but there is just enough time to see the result. This is a very useful way to check the general format before printing.

To avoid the problem of accidentally loading a new file on top of the current file, BrunWord only loads a file into the work area when it is clear. If not then the new file is loaded into free memory and may be transferred or merged as required. Any number of files can be stored in this way but the limited memory makes it most useful for cut and paste editing or for storing the current work while trying some changes.

The printer routine works correctly with any Epson compatible printer. Most requirements are catered for with embedded printer commands but a sequence of up to nine codes can be sent to the printer before printing to set the initial conditions. Other printer facilities include - page throw markers, multiple copies, page numbering, odd and even page headers and footers and the ability to print part of the text using page numbers.

The maximum file size is about 8 or 9 pages of text but books or very long articles can be written by saving 6 or 7 pages at a time and using a group file to print all the files together. Group files are simply a list of the file names with '&&&' at the beginning and these can contain any number of files even files on different discs. Each file can be printed on a new page or follow on directly from the last file.

Extensive cursor control is based on the the cursor keys using normal, shift and control keys. and <CLR> are single letter delete as used in BASIC. Quick local editing is easy with the word delete/undelete commands while block save, move, copy, merge and delete can be used for cut and paste operations on a larger scale.

Superscript and subscript numbers are fully supported with a true display on the screen. (note¹ note₂ $Y=ax^2+bx^3+cx^4$ H₂SO₄).

Single words or short phrases can be found and, if desired, replaced with a new phrase. This is simple and fast to use with upper and lower case treated the same during FIND but treated separately when replacing. The main menu, print menu and spell check menu can all be referred to without losing the current cursor position. The main menu includes a true word count, free memory display and printer status report. The user can set a security code of up to fifteen characters and if this is set the file will be encrypted before saving to disc.

The spelling checker is an integral part of the programme and is supplied with a 30,000 word dictionary which can be expanded to about 35,000 words. Once loaded the dictionary is stored in the memory and a spelling check can be performed immediately without waiting for the spelling programme or the dictionary to be loaded.

It takes just 8 seconds to check a 530 word page and as the words are tested they are flashed onto the base of the screen. When a possible error is found the programme stops and the user can edit, save the word, continue the test or ask for help. The help routine searches the dictionary for the nearest words it can find. NECESAY, NECCESARY, NEZESSARY, NECXSRY will all give a list of words that includes NECESSARY. The error can be automatically corrected by stepping through the help list to the correct word and pressing T for Transfer. A single word can be checked instantly without leaving the editor and then saved or automatically corrected if necessary.

Out of Memory

OUT OF MEM will be displayed if the free memory is less than 336 bytes. There must be 256 bytes free to be able to save the current file to the disc, so a further 80 characters can be typed after first seeing the warning. The free memory is displayed in the main menu.

Warning

Software piracy is a major problem and we have been forced to devise special protection for our programmes. The BrunWord disc cannot be copied. Some copiers will appear to make a working copy but these actuate a random long delay mechanism.

BRUNWORD MUST BE LOADED FROM AN ORIGINAL BRUNNING SOFTWARE DISC.

2. Loading BrunWord

If the computer is already ON, use the switch on the keyboard to switch OFF count to three and switch ON. Insert the BrunWord disc and type RUN "BRUNWORD" <ENTER>. When the programme has loaded the main menu will be displayed. Press <ENTER> or <RETURN> to enter the editor. 'Insert' will be displayed at the base of the screen with the cursor data and the file name which will be NONAME until it is set.

3. Editor Functions

left Arrow	: Cursor back one space.
Right Arrow	: Cursor forward one space.
Up Arrow	: Cursor up one line.
Down Arrow	: Cursor down one line.

<SHIFT>	Left Arrow	: Cursor to beginning of line.
<SHIFT>	Right Arrow	: Cursor to end of line.
<CTRL>	Left Arrow	: Cursor back to start of text.
<CTRL>	Right Arrow	: Cursor forward to end of text.

<SHIFT>	Up Arrow	: Scroll up one line.
<SHIFT>	Down Arrow	: Scroll down one line.
<CTRL>	Up Arrow	: Scroll up two thirds screen.
<CTRL>	Down Arrow	: Scroll down two thirds screen.

<CTRL>	<TAB>	: Insert/Overwrite.
<CTRL>	B	: Justify Paragraph.
<CTRL>	W	: Justify Whole Text.
<CTRL>	V	: Unjustify Paragraph.
<CTRL>	Q	: Unjustify Whole Text.
<CTRL>	C	: Centre Line.
<CTRL>	D	: Delete Word.
<CTRL>	U	: Undelete Word.
<CTRL>	L	: Set Left Margin.
<CTRL>	R	: Set Right Margin.
<CTRL>	T	: Set TAB to cursor column.
<CTRL>	X	: Cancel TAB at cursor column.

<TAB>	: Move to next TAB.
<CLR>	: Delete character at cursor.
	: Delete character before cursor.
<ESC>	: Press twice to display the main menu.

FUNCTION	!	: Next Find.
FUNCTION	0	: BrunSpell Delete Marker.
FUNCTION	1	: Set Left Margin until end of Paragraph.
FUNCTION	2	: Set Right Margin until end of Paragraph.
FUNCTION	3	: Spelling Instant Lookup.
FUNCTION	4	: Fixed Space.
FUNCTION	7	: Display Main Menu.
FUNCTION	8	: Page Throw Marker.
FUNCTION	6	: Mark Text.
FUNCTION	9	: Clear Marked Text.

3.1. Entering Text

When either 'Insert' or 'Overwrite' is displayed at the bottom left of the screen then BrunWord is in the editor and text that is typed in will appear at the cursor position. The end of the text is marked with a diamond shaped marker and the cursor cannot be moved past this point with the cursor keys. Use the space bar or TAB key to move across the page and the <ENTER> key to advance down the page.

For normal typing use the 'Insert' mode and type each paragraph as if it is a continuous line. The programme will move words as necessary to prevent them breaking at the end of the line. The result will be a block of text with an uneven right margin. At the end of the paragraph press <ENTER> or <RETURN>. If a gap of one line or more is required between paragraphs then press <ENTER> once more for each line. The next paragraph can then be typed.

3.2. Cursor Movement

The cursor will normally do as expected (page 4) except that it cannot go outside the margins or between a page throw marker and the end of the page. This means that if the text scrolls with a page throw marker at the top of the screen then the start of the next page will be set to the top of the screen.

3.3. TAB

The programme has one TAB preset at column 51 but a total of 10 TABs can be set by the user by pressing <CTRL> T when the cursor is in the required column. All the TABs are shown in the ruler at the top of the screen with '*' but if the TAB memory is full then no more TABs can be stored and 'TABS FULL' will be displayed. Similarly, the TABs can be cancelled with <CTRL> X when the cursor is in the correct column.

Pressing the <TAB> key will move the cursor to the next TAB position. In 'Insert' spaces will be inserted but in 'Overwrite' the cursor will jump over any text in the line and insert spaces as necessary after the text.

3.4. Justify Right Margin

The text as it is typed in will have an uneven right margin which can be left as it is or justified. In either case it will be printed as it is displayed on the screen.

To justify a single paragraph move the cursor to within the paragraph and press B while holding the <CTRL> key. If the paragraph is required to be indented then the <f4> key in the function key pad must be used to set fixed spaces. Any ordinary spaces in this position will be removed. The example shows how this works. (A single paragraph can be unjustified using <CTRL> V - the key to the immediate left of B).

In a similar way, the whole text can be justified using <CTRL> W and in this case the programme advances through the entire text justifying each paragraph and displaying the new layout as the process continues. (The whole text can be unjustified using <CTRL> Q - the key to the immediate left of W).

3.5. Centre Line

<CTRL> C can be used to centre a single line that ends with a paragraph end marker, or to centre a paragraph, such as this one, that has temporary left and right margins.

3.6. Set New Margins

The user can set the left and right margins that are displayed in the ruler at the top of the screen. These apply for the entire current file. Temporary margins can then be set for each paragraph if necessary, using special markers.

The main margins can be set without leaving the editor, using <CTRL> L or <CTRL> R. A number between 1 and 128 can be entered or if no change is required just press <ENTER>. Numbers that bring the margins closer than 20 will be ignored. On return to the editor the whole text is adjusted for the new margin which takes a few seconds. It must be right justified, if required, before printing.

3.7. Temporary Margins

The <f1> key can be used to set a left margin and the <f2> key, to set a right margin, both of which are reset at the end of the paragraph.

Move the cursor to the start of the paragraph and use the space bar to indent the text to the new left margin position. Press the <f1> key and the left margin will instantly move in.

To set the right margin, move the cursor across the text to the required position. Press the <f2> key and the right margin will instantly move in. Use both procedures together to set both margins and in this case <CTRL> C can be used, if required, to centre the block.

Remember that both temporary margins will be reset at the end of the paragraph. <CTRL> B and <CTRL> W will function normally on these paragraphs but, no change will occur in the first line if the temporary right margin is set.

3.8. Delete/Undelete One Word

<CTRL> D will delete one word to the right of the cursor and put it into a temporary store. <CTRL> U will remove one word from that store and insert it to the right of the cursor, even in the Overwrite mode. In principle, the entire current file could be put into this store and then retrieved but be warned that the memory allocated has low priority and is reset by other procedures that use free memory. (MEMORY save, TEAR, QUICK move/copy, LOAD, SAVE and the expanding work area).

FUNCTION 4 : Find Splice.

FUNCTION 7 : Display Main Menu.

FUNCTION 8 : Page Inrow Marker.

FUNCTION 9 : Mark Text.

FUNCTION 9 : Clear Marked Text.

3.9. IBM Box Characters

The number keys at the top of the keyboard produce special characters when used with the <CTRL> key. These have been setup to produce the IBM box characters but a separate programme SETCHAR is supplied on the BrunWord disc which enables the user to redefine these keys and various others. The text file TUTOR2 contains full instructions.

3.10. Fixed Space

When a paragraph is justified, spaces are added in a complex predetermined way to give the best chance of the text looking neat. If spaces are required that the programme must not alter then the <f4> key can be used in place of the space bar. Words with one <f4> between them will be printed with one space but will be treated by the programme as being one long word. This is useful to indent the start of a paragraph or to ensure that two words are always on the same line.

3.11. Page Throw Marker

If the <f8> key is pressed a special marker will be generated and all the following text will be pushed onto the next page. The screen will show the blank lines at the end of the page but the cursor cannot rest in that area.

3.12. Using 40 or 128 Columns

BrunWord has three screen modes that are automatically selected according to the setting of the right margin. The display will be forty columns wide if the right margin is 40 exactly, eighty columns wide if the right margin is 80 or less (except 40), or one hundred and twenty eight columns wide if the right margin is 81 to 128.

The 40 and 80 column displays are identical to the normal BASIC display (in appearance) but the 128 column display is unique to BrunWord and uses a 5 by 8 dot character rather than the usual 8 by 8 dot. The 128 column mode also displays an enlarged section of text in a box towards the bottom of the screen.

All routines are optimised in the eighty column mode, meaning that this will give the fastest and smoothest response. Text should normally be entered with the right margin set between 21 and 39 or 41 and 80, so that the eighty column mode is used.

However, if you have poor eye sight or are suffering fatigue then use <CTRL> R to set the right margin to 40. Once the text has been edited and spell checked, reset the right margin to whatever value is required. Use <CTRL> W to justify all the text and <CTRL> C to centre any lines that are required to be in the middle.

3.13. Main Menu

Press the <ESC> key twice or the <f7> key in the number key pad to display the main menu. This also shows the free memory, a count of the words in the current file and the printer status.

4. ESCAPE Functions

When in the editor (with 'Insert' or 'Overwrite' displayed), press <ESC> and 'BrunWord' will be displayed. Release that key then press the first letter of the key word. Press <ESC> twice to display the main menu. Press <ENTER> or <RETURN> to return to EDIT.

- L - LOAD from Disc.
 - S - SAVE to Disc.
 - A - ASCII Load or Save (Not for normal use).
 - <SHIFT> @ - CAT, DIR, DISC, ERA, TAPE.
 - M - MEMORY save.
 - G - GET from memory.
 - K - KILL file in memory.
 - D - DIRECTORY of memory files.
 - T - TEAR (copy) marked block to memory.
 - W - WEAVE memory file into text.
 - Q - QUICK MOVE or QUICK COPY marked text to cursor.
 - R - REMOVE marked text.
 - C - CLEAR work area or file area.
 - F - FIND or REPLACE.
 - P - PRINT.
 - O - Load OPTION. (such as Disc Extension).
 - U - User character set (see TUTOR2)
 - X - BrunSpell spelling checker.
 - Z - Set or cancel security code.
-
- | | | |
|---|-----------------------|-------------------|
| 1 | - Set white ink, | dark blue paper. |
| 2 | - Set white ink, | black paper. |
| 3 | - Set blue ink, | dark blue paper. |
| 4 | - Set white ink, | dark green paper. |
| 5 | - Set orange ink, | black paper. |
| 6 | - Set dark blue ink, | white paper. |
| 7 | - Set black ink, | white paper. |
| 8 | - Set dark blue ink, | light blue paper. |
| 9 | - Set Dark green ink, | white paper. |
| 0 | - Set Black ink, | orange paper. |

Care of Discs

Before a new unused disc can be used it must first be formatted. This can be done from within BrunWord if you have Disc Extension. If not, save all current files to a formatted disc and reset the computer by turning OFF and ON.

CPC6128 - Insert Side 1 of your master CPM system disc. Type !CPM <ENTER>. Type DISCKIT3 <ENTER>. Press <f4> then press <f6>. Insert the new disc and press Y. When it is finished turn the disc over and press Y again.

CPC464 - Insert the CPM disc. Type !CPM <ENTER>. Type FORMAT D <ENTER>. Now follow the instruction on the screen to format both sides.

BEWARE, FORMATTING A DISC WILL COMPLETELY ERASE ALL THE DATA. Do not to switch ON or OFF with a disc in the drive. Keep away from magnets.

4.1. <ESC> L – LOAD from Disc

This routine is used to load files from disc. The disc is automatically CAtalogued and then the name of the file to load is requested. The name of any current file in the work area will be displayed on the bottom right of the screen. Type in the file name and press <ENTER>.

Before the file is loaded, the programme tests the size and will display OUT OF MEM if there is not enough free memory. In this case some memory must be cleared (see CLEAR and KILL) before the LOAD is possible. If the work area is clear then the new file is loaded directly into the work area but otherwise it will be loaded into the file area.

If the new file goes into the file area then BrunWord displays the DIRECTORY of memory Files when the loading is complete. It is necessary to GET or WEAVE a memory file to load it into the work area.

4.2. <ESC> S – Save to Disc

This routine is used to save files to disc. The disc is CAtalogued and then the name of the file to save is requested. The name of the current file in the work area will be displayed on the bottom right of the screen.

Press <ENTER> before any other key to use the current file name or type in a new name followed by <ENTER>. If a new name is typed then the current name will be updated.

'Save?..Work or Files+Work' will now be displayed. Type W or F. In both cases the text in the work area will be saved but only if F is typed will the files in the memory also be saved.

4.3. <ESC> A – ASCII Load or Save

This routine must not be used for normal loading or saving to disc as it is very much slower and special data such as printer codes and header/footer data is not saved. It is intended for use with other word processors data and does not necessarily produce data that is fully compatible with BrunWord or the other word processor.

4.4. <ESC> Z – Security Code

A security code of up to fifteen digits can be entered which can consist of any printable keys. Spaces must not be used. The user must VERIFY by typing the same code again. If <ENTER> is pressed before any other key then there is no encoding. Files will be encrypted using the code word when they are saved to the disc or cassette. Be sure to remember the code as there is no way to retrieve it.

4.5. <ESC> <SHIFT> @ - ! Functions

Press <ESC>, <SHIFT> @. The disc will be CATalogued and ! will be displayed.

!CAT	The disc files and file sizes will be displayed.
!ERA NAME	Type ERA then one space, then the file name. The name will be deleted from the disc.
!TAPE	All subsequent loading and saving uses cassette.
!DISC	All subsequent loading and saving uses disc.

Press <ESC> to return to ESCAPE mode.

4.6. <ESC> M - MEMORY Save

This is used to save the whole work area to the file area of the memory. The file name is requested and if <ENTER> is pressed before any other key then the current name will be used. Otherwise type in the name and press <ENTER>.

If the name is already in the directory 'Being Used' will be displayed and another name must be chosen. If there is insufficient memory to complete the save OUT OF MEM will appear. In this case some memory must be cleared before the file can be successfully saved. KILL a file or shorten the length of the text to save (see TEAR).

If neither default occurs then the file will be saved in memory and the DIRECTORY will be displayed. Press <ENTER> to return to the text.

The left margin, right margin, number of lines per page, the printer control codes and the headers/footers are saved with the file.

4.7. <ESC> G - GET from Memory

Enter the name of the file required. BrunWord will search the directory and load the work area with the first file of that name and then return to the editor. If the file name request is answered by pressing <f0> in the function key pad, then <ENTER> - the first file will be loaded to the work area and then KILLED from the directory. This is the only way that a very long file can be transferred to the work area if it is LOADED into the file area from disc or cassette.

The left margin, right margin, number of lines per page and the printer control codes will be reset with the data saved with the file. If the headers/footers were set before the file was saved then these will also be updated. If not then any current headers/footers will be reset.

4.8. <ESC> K - KILL

If a name is entered then the first file with that name will be deleted from the directory. If the name is entered as <f0> <ENTER> then the top file will be deleted.

4.9. <ESC> D - DIRECTORY

This displays the names of all the files in the memory file area. Two files can only have the same name through being loaded from disc.

4.10. <ESC> T – TEAR

Tear is used to copy part of the work area to the file area. Mark the text using the <f6> key then type <ESC>, T, give a file name and press <ENTER>. If the name is BEING USED or there is not enough memory then a warning is given and the file is NOT saved.

The left margin, right margin, number of lines per page, the printer control codes and the headers/footers are saved with the file.

4.11. <ESC> W – WEAVE

This is used to insert a file at the cursor position. Move the cursor to the correct position then type <ESC>, W, give a file name and press <ENTER>. The inserted file will be displayed as marked text. Press <f9>, <ENTER> to reset the marked text.

The left margin, right margin, number of lines per page, the printer control codes and headers/footers will NOT be changed by this command.

4.12. <ESC> Q – QUICK Move/Copy

'Move/Copy Marked Text?' will be displayed. Press M to MOVE or C to COPY the marked text to the cursor position. N or <ESC> will cancel the change. If 'OUT OF MEM' is displayed then the text must be moved or copied in two or more smaller blocks. If QUICK COPY fails through OUT OF MEM then a MOVE/COPY file may be left in the memory file area. This should be deleted with KILL or CLEAR.

4.13. <ESC> R – REMOVE

'REMOVE-Marked Text?' will be displayed. Press Y to delete the marked text. N or <ESC> will cancel the change.

4.14. <ESC> C – CLEAR

'Clear Work or Files' will be displayed. Press W to clear the work area or F to clear the file area. Any other key will cancel the change.

4.15. <ESC> F – FIND or Replace

Type in up to 15 characters after 'Find Phrase?', using just one space between words and ending with <ENTER>. 'New Phrase?' will then be displayed. Type in a New Phrase only if you want to REPLACE the Find Phrase, otherwise press <ENTER>. If a New Phrase is entered 'All or Select?' will be displayed. Press A to replace all the phrases without stopping or S if you wish the programme to stop at each phrase.

BrunWord will search the work area, starting at the beginning, for the Find Phrase treating upper and lower case letters the same and taking all gaps as one space. The REPLACE routine will copy the New Phrase exactly as typed in, except for the first letter which will be made upper case if the first letter of the original phrase is upper case. (Answer 'REPLACE?' with either Y for Yes or N for No or press <ESC>).

A new search or replace can be started from the cursor at any time by pressing <f.> (the dot key in the function key pad).

5. <ESC> P – Printer Functions

When in the editor, press <ESC>, P, to display the 'Print Menu', the current margin settings, number of lines per page, form length and the pre print codes. The headers/footers and start page number will also be displayed if turned on.

- P - Print the text in the work area.
- L - Set Left Margin.
- R - Set Right Margin.
- N - Set No of Lines.
- F - Set Form Length. (Normally zero).
- H - Header (Set headers or footers).
- B - Set page number to BEGIN printing.
- E - Set page number to END printing.
- S - Set START Page number.
- Z - Set Pre Print.

NOTE:- The printer MUST be switched ON before pressing P from the print menu.

5.1. P...Print Text

Switch the printer ON then press P. The text in the work area will be sent to the printer using the margins, page length and other data as displayed in the Print Menu. Two questions must be answered.

Print Single Pages ? Answer Y for yes to stop at the end of each page to change the paper. Any other key will give continuous printing.

No of Copies ? Enter a number between 1 and 255 followed by <ENTER>.

If only part of the text is to be printed then the 'Begin Page' and 'End Page' can be set by pressing B or E.

5.2 L...Set Left Margin

This is used to set the left margin for the whole file and is the same routine as <CTRL> L from the Editor. A number between 1 and 107 may be entered but numbers that bring the left margin closer than 20 below the right margin are ignored. The text must be rejustified, if required.

5.3. R...Set Right Margin

This is used to set the right margin for the whole file and is the same routine as <CTRL> R from the Editor. A number between 21 and 128 may be entered but numbers that bring the right margin closer than 20 above the left margin are ignored. The text must be rejustified, if required.

5.4. N...Set No of Lines

This sets the number of lines that will be sent to the printer before sending a form feed. Normal fan fold paper has a maximum of about 60 lines but an allowance of two lines must be made if footers are set. Headers are automatically allowed for.

5.5. F...Set Form Length

Normally this is set to zero but for printers that do not use form feeds set the exact length of the page (66 for standard length fan fold paper).

This can also be set to obtain more than one copy of a short piece of text on one page. For two copies on one page using 66 line paper, enter 33 and request at least 2 copies. Providing the text is shorter than half a page exactly two copies will be printed on each page.

5.6. H...Headers and Footers

Press H from the print menu, and 'Head, Foot, Both or None ?' will be displayed. Press H or F to turn on headers or footers. Press B for one of each or N to turn off headers and footers.

If H, F, or B is entered the first current header/footer will be displayed. Press <ENTER> to leave this unchanged or overtype with the new header/footer. Two special characters can be used in the header/footer to format left, middle and right. '+' is used to indicate the start of the middle and '*' the end of the middle. Wherever a '?' is encountered it will be replaced with the current page number.

Example 1: Page ? * Manual

Page 13

Manual

Example 2: Manual+Page ?*Manual

Manual

Page 13

Manual

Example 3: + ? centre ? *

13 centre 13

Example 4: *Page ?

Page 13

After the first header/footer is entered the second will be displayed and this must be entered in the same way. This can either be the same lettering or changed as required.

5.7. S...Set Start Page

A number up to 999 may be entered. The first page of the file will start with this page number.

When using a group file the starting page number will be the one contained in the group file itself.

5.8. Z...Set Pre Print

Immediately before any text is sent to the printer, nine printer control codes are sent. These are normally zero but can be set for special purposes. Look through the printer manual and work out the codes for the required process. Press Z (from the Print Menu) and enter the codes in decimal numbers. Set all unused codes to zero.

Reset Printer.	27, 64, 0, 0, 0, 0, 0, 0, 0
Double Strike.	27, 71, 0, 0, 0, 0, 0, 0, 0
Double Strike + Emphasised.	27, 71, 27, 69, 0, 0, 0, 0, 0
Ignore Paper end Detector.	27, 8, 0, 0, 0, 0, 0, 0, 0
Double line spacing.	27, 65, 24, 0, 0, 0, 0, 0, 0
(Note:- For correct paging set 'No of Lines' to half)	

Indent left margin 6 col.	27, 108, 6, 0, 0, 0, 0, 0, 0
Indent left margin 8 col.	27, 108, 8, 0, 0, 0, 0, 0, 0
Indent 8 + set 12 char/inch.	27, 108, 8, 27, 77, 0, 0, 0, 0

6. Printer Control Codes

Special characters can be placed within the text that give instructions to the printer such as to change to emphasised printing. These characters are generated when the function keys <f1> to <f9> are pressed with <SHIFT> or <CTRL> also pressed. (Function keys are the separate pad of number keys).

These keys have been programmed to suit an Epson compatible printer where <SHIFT> turns the effect ON and <CTRL> turns it OFF. All eighteen keys can be redefined by the user and are saved with the text file.

When the programme encounters a control code three special characters and a space are sent to the printer. This arrangement ensures that the character can be treated as a space in the programme. When the printer control character occurs at the start of the line then the space is placed at the first convenient place in the same line.

<SHIFT> Function.....ON <CTRL> Function.....OFF

<f1>	ENLARGED mode. (Square bracket with 'E').
<f2>	CONDENSED mode. (Square bracket with 'C').
<f3>	UNDERLINE mode. (Square bracket with '-').
<f4>	EMPHASISED mode. (Square bracket with 'S' for Strong).
<f5>	SUPERSCRIP T mode. (Square bracket with up arrow)
<f6>	SUBSCRIP T mode. (Square bracket with down arrow).
<f7>	DOUBLE STRIKE mode. (Square bracket with 'D').
<f8>	ITALICS mode. (Square bracket with 'A').
<f9>	DOUBLE HEIGHT . (Large 'E' symbol).

Equations such as $Y=ax+bx^2+cx^3+dx^4+ex^7$ will be displayed on the screen with a proper display of the numbers. To achieve x^2 press x, then shift <f5>. x will be followed by a special square bracket up arrow character. Now press 2 and the special character will change to 2 . Similarly, H_2SO_4 or $NOTE_5$ can be achieved using shift <f6> followed by the number.

6.1. Redefine Printer Codes

Let us assume that the function key <SHIFT> and <CTRL> <f7> is to be programmed to set and cancel the double strike mode. The printer manual gives ESC G as the code to set the Epson RX80 to DOUBLE STRIKE. ESC is 27, and G is 71 in ASCII.

Press <ESC>, P to display the print menu then hold <SHIFT> and press <f7>.

'Printer Control G No.1' will appear. Type in the first number. In our example this is 27.

'Printer Control G No.2' will appear. Type in the second number. e.g. 71.

'Printer Control G No.3' will appear. Type in the third number. In our example the third number is not used so 0 must be input.

'Print Menu' is now displayed and the process can be repeated to set <CTRL> <f7> to cancel the double strike mode. Press <CTRL> <f7>.

'Printer Control P No.1' will appear. Enter 27.

'Printer Control P No.2' will appear. Enter 72.

'Printer Control P No.3' will appear. Enter 0.

The <SHIFT> and <CTRL> function keys can be set to any code and need not be in pairs. However, this does help in remembering the code.

6.2. Non Epson Compatible Printers

The Elite version of BrunWord has no provision to drive printers that do not use the standard Epson printer codes.

7. Group Print Files

A group print file is a file containing the names of several files that are to be printed automatically and is any file that has &&& or &&&\$ at the start before any other text. The page numbering will start from the page number in the group file but headers and footers will be taken from the last file loaded. Each file name must be on a new line.

Example 1	&&&	Example 2	&&&\$
	Part1		Part1
	Part2		Part2
	Part3		Part3

Example 1 will print the three files in sequence starting each file on a new page. Headers/footers will be updated as each file is loaded but page numbers will follow from the previous page. With \$ immediately after &&& as example 2, the files will follow directly without starting a new page. The disc can be changed while printing.

8. <ESC> X – BrunSpell

A file in the work area can be checked for spelling errors using BrunSpell. Press <ESC>, X and the BrunSpell menu will be displayed, showing the word counts of the four dictionary sections ABCD, EFGHIJK, LMNOPQR, STUVWXYZ + non letter words.

BrunSpell can also be entered directly from the editor by pressing <F3>. In this case BrunSpell will test just the word at the cursor and then return to the editor. This also has the effect of setting the BrunSpell pointer and can be used to set a particular starting point.

8.1. Check Spelling

Press X to start the spelling check. The file is tested for normal words and then for non letter words. Any marked text will not be checked. The words as they are tested will be flashed on the bottom left of the screen. When a word is found that is not in the dictionary, the testing will stop and 'Save, Edit, Help, Cont?' will be displayed after the word. Press S, E, H, C or <ESC>.

S..Save The word will be added to the dictionary in the computers memory but the disc will not be updated. This must be done when the test is finished (see para 8.4) but ONLY if a PERMANENT change is wanted.

Often words will be saved to the memory to form a temporary working dictionary, but NOT saved to the disc. Abbreviations or unusual words should not be added to the disc but can, of course, be saved to the dictionary in memory.

E..Edit The user is returned to the editor with the cursor at the start of the last word tested. The word can be changed and the spelling checker re-entered with <ESC>, X. In this case the BrunSpell menu will display 'CONTINUING' in place of the word count lists. Press X again to start the test from the beginning of the word that the cursor is at.

H..Help The BrunSpell help routine has two levels of search. The first is quite rigorous while the second takes a broader spectrum of possibilities intended for errors that are only vaguely similar to the word. At the end of the first search '* * *' is displayed under any words found and the programme waits for instructions. Press <ESC> to exit or C to Continue with the second search.

At the end 'Finished' is displayed but <ESC> can be pressed at any time to stop the Help routine.

The testing will also pause when the screen is full. Press <ESC> to exit from HELP or C to continue.

C..Cont The spelling check continues ignoring the possible error.

The <ESC> key can be pressed at any time to stop the testing. In this case the word counts are replaced with 'CONTINUING' to warn that the test will continue from the word which contains the cursor.

8.2. Automatic Correction

Spelling errors can be automatically corrected using one of the words found with the help routine. First, use HELP as above and as soon as the correct word is displayed, press <ESC>. The first word in the HELP list will be displayed immediately above the incorrect word.

Step through the list to the correct word using the down arrow key (or back using the up arrow key) then press T for Transfer. The error will be automatically corrected keeping the first letter the same case as the original word. The programme will return to the editor so that the correction can be seen. Resume the testing with <ESC> X X.

8.3. Load Dictionary

With the BrunSpell menu displayed, press L and 'INSERT DICTIONARY DISC' will be displayed. Press <ESC> to return to the BrunSpell menu or insert the correct disc and press any other key.

8.4. Save Dictionary

Press S when the BrunSpell menu is displayed and 'Save Dictionary' will be displayed. Answer Y for yes, N for no or press <ESC>. If the answer is Y then 'INSERT DICTIONARY DISC' will appear. Insert the dictionary disc and press any key. BrunSpell is supplied with over 30,000 words which use about 49K of memory. Another 15K is available which should store another 5000 words.

8.5. Reset Pointer

If 'CONTINUING' is displayed when BrunSpell is entered and it is required to start the checking from the beginning then press R to reset the pointer.

When Brunspell is exited before the checking is complete the pointer will store the last position. This happens quite normally when editing corrections. On entering BrunSpell the next time the checking will start from the last pointer position unless the cursor has been moved back to the start of the text at any time since leaving BrunSpell.

8.6. Delete Words

If it is found that an incorrect word is in the Dictionary then this can be deleted by typing the word in the BrunWord work area with the special character generated with the <F0> function key placed immediately after it. Run Brunspell in the usual way and the option to delete that word will be given. This will remove all words with the same stem from the dictionary. (e.g. help, helped, helps, helping etc).

8.7. Non Letter Words

The BrunSpell Dictionary can contain strings that are numeric or alphanumeric. These use more memory than normal words and only the most common should be stored. Single numbers 1 to 10, 1st, 2nd, ..., 31st, 1987 etc are already stored. No 'number trap' option is given as it is quite simple when the programme finds an unknown number, to press <ESC> to end. It is pointless not testing numbers that it recognises. The HELP facility does not work with non letter words.

9. A Worked Example

This is a step by step example to demonstrate the basic principles of using BrunWord. The methods used are intended to show the simple formatting capability of the programme and should be developed by the user to suit his own style.

Load the programme as explained on page 4 and press the <ENTER> key to enter the editor. 'Insert' will be displayed at the base of the screen with the cursor data and the file name 'NONAME'. Type the following text exactly as instructed.

Brunning Software,
34 Helston Road,
Chelmsford,
CM1 5JF.

Word Processor User,
Your Address.

Dear Sir,

This is a demonstration letter to show the basic principles of using BrunWord. Remember that all words must have at least one space between them and that each paragraph is typed as if it is one very long line. The programme automatically moves words as necessary to prevent them being broken at the end of the line.

Each paragraph must be ended by pressing either ENTER or RETURN. It is difficult to forget this as the cursor will not move past the end of text marker. To test the spelk checher we need some errors!

Yours sincerely,

Brunning Software.

With the cursor sitting on the diamond end of text marker, at the top left corner, type 'Brunning Software' then press <ENTER>. A paragraph end marker will appear at the end of the line and the cursor will move to the start of the next line.

Press the up arrow key to move the cursor back to the 'B' of Brunning then press the <TAB> key to move the text across the screen. Press the space bar until 'Software' moves down to the next line, then use the key until 'Software' just moves back.

Press the down arrow key and type '34 Helston Road,', press <ENTER>, press up arrow and again use the <TAB>, space bar and key to position the '3' under the 'u' in Brunning.

Press the down arrow key and type 'Chelmsford,', press <ENTER>, up arrow and move to the right using <TAB>, space bar and so that 'C' is under the gap between '4' and 'H'.

Press the down arrow and type 'CM1 5JF', press <ENTER>, up arrow and move to the right using <TAB>, space bar and .

Press down arrow and then <ENTER> to move down. Type 'Word Processor User,' and press <ENTER>.

Type 'Your Address.' and press <ENTER> twice.

Type 'Dear Sir,' and press <ENTER> twice.

Now type in the first paragraph as a continuous stream using the space bar between words. At the very end press <ENTER> twice. If <ENTER> is used part way through the paragraph then the formatting routines will treat it as more than one paragraph.

Type the second paragraph in the same way, copying the spelling errors in the last line, then press <ENTER> three times.

Type 'Yours sincerely,', press <ENTER> and press up arrow once to come back to 'Y'. Now centre the line by holding the <CTRL> key and pressing C.

Press down arrow then press <ENTER> 4 or 5 times. Type 'Brunning Software' and press <CTRL> C to centre the line.

The paragraphs as typed in will have a ragged right margin. This can be left as it is or justified using either <CTRL> B for one paragraph or <CTRL> W for the whole text. Hold the <CTRL> key and press W. The entire text will be justified.

This letter with its spelling errors will be used for further demonstrations so save it to disc as follows. Insert a disc into the disc drive. (See bottom of page 8 'Using New Discs').

Press the <ESC> key. 'BrunWord' will be displayed at the bottom left of the screen. Release the <ESC> key and press S. The current files on the disc will be CATalogued then 'SAVE-Name?' will be displayed. Type LETTER1 and press <ENTER>. 'SAVE?..Work or Files+Work' will be displayed. Press W and the programme will save the work area onto the disc.

9.1. Loading the Example

All further examples will assume that LETTER1 has been typed exactly as described in section 11 and saved to a disc.

Before loading, CLEAR the work area. Press <ESC> then press C. 'Clear Work or Files?' will be displayed. Press W. The work area will be cleared and the main menu displayed. Insert the correct disc in the disc drive and press L. The disc will be CATalogued then 'LOAD-Name?' will be displayed. Type LETTER1 and press <ENTER>. As the work area is clear the letter will load directly into the editor.

Before any changes are made the letter can be saved into memory for fast access. Press <ESC> then press M and 'Mem Save-Name?' will be displayed. To use the current file name LETTER1 press <ENTER> before any other key. The file will be copied into memory and the directory of memory files will then be displayed to show that the file has been saved. Press <ENTER> to return to the editor.

9.2. Spell Check Example

This continues from section 9.1 Press <ESC> then X.

If you have followed this example exactly then the BrunSpell menu will be displayed showing the word counts of the four dictionary sections. Press X to start the spelling check.

Our test letter has some deliberate spelling errors. The words will be flashed onto the screen until SPELK is reached. The checking will stop and 'SAVE, EDIT, HELP, CONT?' will be displayed on the bottom right of the screen.

Press H to request HELP and BrunSpell will search the dictionary for similar words, displaying them on the screen. '* * *' will show the end of the first search and 'ESC or CONT?' will be displayed at the bottom right'. Press <ESC> to exit from HELP and the first word in the HELP list will be displayed immediately above the error. Press the down arrow key until SPELL is reached then press T for Transfer. (The up arrow can be used to go up the list if the correct word is passed by).

SPELK will automatically be corrected to SPELL and the programme will return to the editor so that the correction can be seen. Press <ESC> then X and X again to continue the spelling check.

The next error is 'CHECHER'. Again press H for HELP and just two words will be found the first is the correct spelling. Press <ESC> to stop the search then T for Transfer.

Press <ESC> then X and X again to continue the checking. The next error is 'ERRER'. Press H and a list of words will appear on the screen. Press <ESC> to exit from HELP then use the down arrow key to advance down the list to the correct word. Press T for Transfer.

Press <ESC>, X and X again to continue the checking and when 'Finished' is displayed, press any key to return to the editor. Hold <CTRL> and press W to re-justify the text.

The HELP routine always 'Pauses' after the first search. Normally, it is only worth continuing with the second search if the word is very badly spelt or if the second letter may be wrong.

Now Memory save the corrected version. Press <ESC> then M. Then type LETTER2 <ENTER>. Press <ENTER> again to return to the text.

9.3. Editing The Example

Either continue directly from section 9.2 or follow section 9.1 to load LETTER1 with a copy in the memory file.

Indent Paragraph

The paragraphs in the letter are not indented and if the space bar is used to do this they will be removed with <CTRL> B or <CTRL> W. Fixed spaces must be used to indent.

Move the cursor to sit on the 'T' in 'This' at the start of the first paragraph and press the <f4> key in the function key pad nine times. The special character generated is a fixed space. Press <CTRL> B and the paragraph will justify. When this is printed the <f4> fixed spaced will be printed as spaces.

Set Main Margins

The margins are preset at switch on to 10 and 70 which are convenient for letter writing and short pieces of text. These can be set either from the print menu or while in the editor.

Hold the <CTRL> key and press L. 'Left Margin 10' will be displayed. Type in 5 followed by <ENTER>. Now press <CTRL> R and type 75, <ENTER>. The margins will now be set to 5 and 75 but the text will need to be justified. Press <CTRL> W.

The address at the top is now too far to the left. Press the space bar to move the top line right and the key to move it back. Move down with the down arrow key and correct the rest of the address.

Set Temporary Margins and Centre Paragraph

Move the cursor into the second paragraph and press <CTRL> and V to unjustify the paragraph. Then press the space bar until the column count at the bottom of the screen reaches 20. Press <f1> in the function key pad and the left margin will move in.

Now move the cursor across using the right arrow key until the column count reaches 60. This is not a convenient position as the cursor is resting on the end of 'pressing'. Move right one more space. Press <f2> and the right margin will instantly move in.

Press <CTRL> B to reformat the paragraph which will also set the cursor to the start of the paragraph. Press <CLR> several times and the paragraph block will move left keeping its basic format. Now hold <CTRL> and press C and the paragraph will automatically centre itself. The cursor can be anywhere in the paragraph for <CTRL> B or <CTRL> C.

Sometimes it is better to define the format in the preceding blank line, particularly when exact margins are required. Move the cursor to the start of the first paragraph and press the up arrow key to move the cursor to the start of the blank line above. Press the space bar until the column count reaches 20. Press <f1> then press <f4> until the column count reaches 60. Press <f2>. The format is set but it has its own paragraph end marker and so the first paragraph is not affected. Press <CLR> once or twice to remove the paragraph end marker. Press <CTRL> B.

GET from Memory

The letter is not quite what is wanted after all the editing. Press <ESC> then press G. The DIRECTORY of memory file will be displayed with 'Get Mem File-Name?' at the bottom. As there is a current file in the work area a warning will be given 'File In Work Area'.

Type in LETTER1 (or LETTER2 if the errors have been corrected) and press <ENTER>. The original Letter will be loaded into the editor.

QUICK Move and QUICK Copy

Now the first and second paragraphs will be changed round. Move the cursor to the start of the first paragraph and press the <f6> key. All the text from the cursor onwards will turn to inverse video. Move the cursor to the line between the paragraphs and press <f6> again. The text from the cursor onwards will turn back to normal video.

Move the cursor to two lines below the second paragraph and press <ESC> then press Q. 'Move/Copy Marked Text?' will be displayed. Press M and the marked paragraph will move to the cursor position and will still be marked. <f9> can be used to reset the marked text but leave it for the next example.

Move the cursor to the start of the other paragraph and press <ESC> then press Q. Press C and the paragraph will be copied to the cursor position. It will now be in both positions. Press <f9> to reset the marked text.

Use of TEAR WEAVE & REMOVE

The same result as QUICK move and QUICK copy can be achieved using the TEAR, WEAVE and REMOVE commands. Mark the second paragraph again using the <f6> key as described above. Press <ESC> then press T and 'TEAR-Name?' will be displayed. Type in PARA2 and press <ENTER>. If no warning is given then the file is saved in memory.

Press <ESC> then R. 'REMOVE Marked Text?' will be displayed. Press Y for yes and the marked block will be deleted.

Now move the cursor to two lines below the bottom paragraph. Press <ESC> then W and the DIRECTORY of memory files will be displayed with 'WEAVE-Name?' at the bottom. PARA2 should be one of the files listed. Type in PARA2, press <ENTER>, and the paragraph will be inserted at the cursor position.

These examples of moving text have used whole paragraphs but any piece of the text can be marked and moved in the same way.

Delete/Undelete Word

For moving one or two words the DELETE word and UNDELETE word functions are very useful. Move the cursor to the space on the left of 'show' in the first paragraph. Hold <CTRL> and press D. 'show' will be deleted. Move the cursor to the space on the left of 'demonstration' and use <CTRL> D again to delete that word. Move the cursor to the space to the left of 'the basic' which is to the right of where 'show' was removed. Hold <CTRL> and press U to return 'demonstration' to the new position.

9.4. Printing The Example

If continuing from 9.3 above, press <ESC> then G and enter either LETTER1 or LETTER2. If starting at this section then first load LETTER1 into the work area as explained in section 9.1.

To print the letter press <ESC> then P and the print menu will be displayed. FOOT 1 and FOOT 2 are shown and are both the same. These are set to give a simple page number at the bottom of the page.

Set the paper to the top of the form and switch the printer ON. Press P and 'Single Pages?' will be displayed. If single sheets are being used then answer Y for yes but normally fan fold paper is used and the answer is N. 'Copies?' will be asked, enter 1 followed by <ENTER>.

The letter will be printed. At the end of the letter the paper will be moved up to print the page number two lines below the 'No of Lines' which in this case will be line 60. The <ESC> key can be pressed at any time to stop the printer.

Now repeat the printing but without the page number. Display the print menu with <ESC> P. Press H and then N for None. The print menu will now show no headers/footers. Press P and answer the question as before. This time the letter will be printed and then end with a form feed. If a file needs to be printed without the form feed this can only be done automatically using a group print file.

9.5. Special Formatting Example

Follow these instructions to produce some special effects.

- A. Press <CTRL> back arrow, to move to the start of the text.
- B. Press <f4> on its own. (Forces C & D to be treated as spaces).
- C. Press <SHIFT> and <f4> to set emphasised.
- D. Press <SHIFT> and <f1> to set enlarged.
- E. Type 'Headed Note Paper'.
- F. Press <CTRL> and <f1> to cancel enlarged.
- G. Press <CTRL> and <f4> to cancel emphasised.
- H. Press <f4> seventeen times (once for each character in the heading).
- I. Press <ENTER> twice then up arrow twice to get back to the top line.
- J. Press <CTRL> and C to centre the heading.
- K. Move the cursor to the 'd' in demonstration.
- L. Press <SHIFT> and <f3> to set underline.
- M. Move the cursor to the space after 'n' at the end of the word.
- N. Press <CTRL> and <f3> to cancel underline.
- O. Press <CTRL> W to justify the text.
- P. Press <ESC>, P, P, N, 1, <ENTER>.
- Q. Switch on the printer to see the result.

The formatting routines do not take account of different character lengths. This can be overcome as illustrated above by adding fixed spaces to force the correct format. Enlarged characters are twice as long and so require an equal number of fixed spaces.

Introduction

Our original aim in designing this programme was to produce a fast desk top publisher with very high quality printing. This was to include a spelling checker and was all to be memory resident. We quickly realised that two 256K memory extensions would be needed and that even then the response would be very slow.

BrunWord Elite is our solution to this dilemma and can best be described as a 'Page Processor' rather than a word processor. It tells the printer what to print and where to print but not how to print. BrunWord Elite assumes that the printer knows best how to print and provides only a controlling hand, to help choose the right compromise.

A desk top publisher would go that final stage and control how the printer prints. This demands the programme to have the same resolution as the printer if the print quality is to be at its very best. Using this criteria, the available memory on a standard CPC6128 is adequate to produce just one quarter of a page of text using a 9 pin printer or one eighth of a page using a 24 pin printer.

All the editing features of BrunWord Elite are virtually the same as BrunWord 6128 (see the first section of this manual), except that BrunWord Elite will only display 40 columns when the right margin is EXACTLY 40. There are other minor improvements such as automatic CATaloguing with the <SHIFT> @ controls.

BrunWord Elite will work with any printer that uses Epson control codes and this means ALL modern dot matrix printers. The programme is designed to drive the printer to its limit, so a better printer can produce a better result. At the bottom end, the simplest printer will be able to print up to 6 columns. If the printer also has IBM codes then lines and boxes can be drawn, and if the printer has reverse line feed then blocks of text can be printed anywhere and everywhere on a page. At the top end, a 24 pin printer will be able to use the fonts supplied with the programme, print lines and boxes, print in columns and use micro-justification.

The programme has two systems for printing columns. The easiest involves just telling the programme the number of columns (up to six) and the left margin required for each. It tests to find the true page breaks and then prints consecutive pages as adjacent columns. All the top lines are printed, then all the second lines and so on, ensuring that even the simplest printer will produce the right result. Footers or page numbers will be printed at the bottom, if required, and then the process starts again for the next page. The columns can be thought of as being stacked vertically in the programme, allowing the text to be edited and justified in the normal way.

The second system is really a system of page layout. A series of simple instructions are placed near the start of the text, which tell the programme the layout that is required. These are acted upon sequentially, allowing all the layout codes to be grouped together and enabling the whole layout to be adjusted simply by changing data in these lines.

All printers can also make use of BrunWord Elite's ability to download disc files directly to the printer. This can be the data to produce a picture or to set up a font in the printer. There is no restriction on the type of data that can be sent.

Some of BrunWord 6128's special printer control characters have been defined, in BrunWord Elite, to print the IBM box characters. ANY printer with this facility can print lines and boxes. However, this becomes a little tricky with large boxes or when proportional printing is used. BrunWord Elite has a second system for use with 24 pin printers where the line or box is specified with co-ordinates. The printer will print the lines and then return to its starting point so that printing continues normally.

All 24 pin printers and some 9 pin printers can perform justification. Study the format of this booklet. The text has even left and right margins. This is full justification. All word processors can produce this effect, unless proportional printing is used. In this case the width of each character and the setting of the printer would need to be given to the programme. This information is only available for some of the printers. So the programmer has an impossible task, unless the printer justifies the text.

BrunWord Elite has an elaborate system for use with printers that can justify (using Epson codes). The programme has a table of characters widths and the user can choose for the text to correspond to the screen or allow lines to be filled according to the true character widths. The latter gives a much better overall appearance particularly with narrow columns.

The printer could be allowed the freedom to fully control the justification but then the programme would lose track of what is happening and some of the flexibility would be lost. It would also produce the annoying effect of squaring the last line of a paragraph if it exceeds 75% and leaving all lines shorter than this unjustified. BrunWord Elite works very hard to ensure that the printer only has enough freedom to make the correct decision.

10.1. Where to Start

BrunWord Elite is most easily understood as an extension of BrunWord 6128 where the fundamental technique for driving the printer has been totally rewritten. This means, of course, that the user must be familiar with BrunWord 6128 before the finer details of BrunWord Elite can be used. The first section of this book is the full BrunWord 6128 manual with a few minor changes incorporated. If in doubt, turn to page 2.

10.2. Using This Manual

We have arranged this part of the manual so that the first sections cover the features that can be used on all 9 pin and 24 pin printers. This leads on to features that require the printer to have special facilities such as reverse line feed and auto justification. The final sections cover features that apply only to 24 pin printers and at the very end we explain how these features can be optimised for a particular 24 pin printer.

We suggest that you work through in the order printed until you reach the sections that use facilities that your printer does not have. That is the place to stop unless you intend to purchase a better printer

However, we must first explain the fundamental printer control system and this is covered in the very next section. BrunWord 6128 has a series of single character printer control codes which provide most of the normal printer control (see page 14). As BrunWord Elite needs to provide the printer with much more information, it has been necessary to introduce a more comprehensive system which we call INCODEs. It is the use of these new control codes that give BrunWord Elite its special powers.

11. INCODE Printer Controls

INCODEs, as the name suggests, are printer control codes that can be typed anywhere within the text. These complement the normal BrunWord 6128 printer codes (page 14) and it is very common to use both types within a piece of text. The BrunWord 6128 codes are primarily intended for simple printer switching operations such as to underline or to **emphasise** a word. These all show on the screen as a single character but send either 3 or 10 codes to the printer.

INCODEs have a much more complex use and generally control HOW the programme instructs the printer rather than sending a specific set of codes. Hold <SHIFT> and press the dot key in the function key pad, to produce the INCODE character. This must always be followed immediately with a letter, with no space inbetween, and then normally a number or a series of numbers. These are fully explained on the following pages but here is a brief summary:-

11.1. All printers

- 1.1. **Line Spacing (GAP).** In inches multiplied by 216 (9 pin) or 180 (24 pin).

■G36	Sets 9 pin printer to 1/6 inch.
■G30	Sets 24 pin printer to 1/6 inch.

- 1.2. **Printer Margins.** Left offset followed by column width (optional).

■M10 30	Sets left margin to 10, right margin to 40.
■M50 30	Sets left margin to 50, right margin to 80.

- 1.3. **Header Margins.** Left offset followed by column width.

■H5 70	Sets header margins, left to 5 and right to 75.
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- 1.4. **Direct Printer Codes.** String of decimal numbers sent to the printer.

■P3 27 85 1	Sets printer to uni-directional printing.
■P2 27 71	Sets printer to double strike printing.

- 1.5. **Download Disc File.** File name must begin \$.

■D \$PICTURE	Sends \$PICTURE directly from disc to printer.
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- 1.6. **Delayed INCODE.** Inches from top, multiplied by 216 (9 pin) or 180 (24 pin).

■"432■M50 30"	Margins will be set to 50 and 80, 2" from top (9 pin).
■"360■M50 30"	Margins will be set to 50 and 80, 2" from top (24 pin).

- 1.7. **Print in Columns.**

■"■C2 0 40"	Whole file printed in 2 columns offsets 0 and 40.
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11.2. Printers with Reverse Line Feed

- 2.1. **Reset to.** Inches from top, multiplied by 216 (9 pin) or 180 (24 Pin).

■R648	Sets 9 pin printer 3 inches below top of text.
■R540	Sets 24 pin printer 3 inches below top of text.

2.2. Epson Reverse. Special control for Epson LQ500 & LQ550.

■E5	Set reverse routine for Epson LQ500 & LQ550.
■E3	Set reverse routine for normal printer.

11.3. Printers with Justification

3.1. Justification Control.

■J0	Sets printer to ragged right. (Prints against LHS).
■J1	Sets printer to centre the line of text.
■J2	Sets printer to ragged left. (Prints against RHS).
■J3	Sets printer to justify the text within paragraphs.
■J4	Same as ■J0 but line filled according to char size.
■J5	Same as ■J1 but line filled according to char size.
■J6	Same as ■J2 but line filled according to char size.
■J7	Same as ■J3 but line filled according to char size.

All normal BrunWord 6128 printer codes, <SHIFT> <f1> etc, will only have a space sent to the printer if ■J0 (the default condition).

3.2. Reference Width. Number required depends on the width of 'a'.

■W	Sets Width to the value of 'a' in internal table.
■W27	Sets Width to 27.

3.3. Size Factor. Number required depends on the printer and the font.

■F	Sets Factor to 27. Usual proportional requirement.
■F32	Sets Factor to 32. Usual non-proportional requirement.

3.4. Use Absolute TAB in place of left margin.

■A0	OFF (Star LC24-10, Citizen HQP40/45).
■A2	ON (Epson LQ500).
■A3	ON (Epson LQ550, Citizen Swift-24).

11.4. 24 Pin Printers

4.1. Download Font. Any file name NOT beginning \$ is assumed to be a font.

■D FINELINE.M	Downloads middle size FINELINE font.
■D FINETYPE.L	Downloads large size FINETYPE font.

4.2. Print Box or Line. Thickness, depth, type, 1st position, 2nd position, etc.

Thickness	1 pin thick = 16. 2 = 24. 3 = 28. 4 = 30. 5 = 31.
Depth	Inches multiplied by 180.
Type	2 = box. 0 = hor line. 1, 3, 4 etc = vert line(s).
1st position	Inches multiplied by 60 from current left margin.
2nd position	Inches multiplied by 60 from current left margin.

■B16 360 2 60 180	Box, thin line, 2 inch square, 1 inch from margin.
■B28 0 0 60 180	Hor line, 3 pins thick, 2" long, 1" from margin.
■B24 360 1 60	Vert line, 2 pins thick, 2" deep, 1" from margin.
■B16 360 3 30 60 90	Vert lines, thin, 2" deep, .5" 1" & 1.5" from marg.

12. All Printers

All facilities described in this section can be used with any printer that uses the standard Epson control codes (all well known modern dot matrix printers). BrunWord Elite uses some very complex printer techniques and because of this there is no provision to drive printers that are not Epson compatible.

12.1. Line Spacing (GAP)

This INCODE enables the line spacing to be changed any number of times on a page. This is very useful to finetune the layout of a page. If the GAP is set then the automatic formfeed at the end of the text is inhibited. The INCODE character <SHIFT> <f.> is followed by G and then a number calculated as follows (if in doubt see ESC J in your printer manual):-

9 pin printer	Gap in inches multiplied by 216.
24 pin printer	Gap in inches multiplied by 180.

■G36	Sets 9 pin printer to 1/6 inch.
■G30	Sets 24 pin printer to 1/6 inch.
■G15	Sets 24 pin printer to half line spacing.
■G60	Sets 24 pin printer to double line spacing.

If the line spacing is not constant on a page and normal footers are used, then these will not be in the correct place unless the GAPs add up to cancel the changes. (e.g. ■G15 followed by ■G45). The best solution is to use the Reverse INCODE to print a line of text at an exact position.

The Reverse INCODE will always reference itself to the first line where the GAP is set (or the top of a new page if it is already set). Normally, the GAP will be set in the first line.

12.2. Printer Margins

The printer margins will normally correspond to the screen but the margin INCODE can be used to set the printer margins independently. This is most useful when the printer is being used to justify or when very wide printing is required.

The INCODE character <SHIFT> <f.> is followed by M and then the left margin offset and the column width (optional). Simple text can be thought of as being one column, in which case the column width is the width of the text.

■M15 40	Sets left margin to 15, right margin to 55.
■M0 40	Sets left margin to 0, right margin to 40.
■M25	Sets left margin to 25, column width unchanged.

The programme will use the column width shown on the screen with zero offset until a margin INCODE is encountered. If just the left margin offset is specified then the column width will be left unchanged.

- Notes
1. This INCODE sets an offset and a column width rather than absolute margins.
 2. If the column width is changed from that shown on the screen then it is normally essential for the programme to be allowed to fill the line independently from the screen. (INCODEs ■J4 ■J5 ■J6 or ■J7 section 13.1.).
 3. The offset value is always added to the left margin shown on the screen.

12.3. Header Margins

If no action is taken then the header and footer margins will be the same as the screen, even if the printer margins are changed within the text.

When two or more columns are printed, it is usual for the total width to be much wider than the screen. The automatic footers (not headers) can still be used but their column width must be set to the full width of the text. This is done in the same way as setting the margins but using the 'header' INCODE ■H followed by two numbers. This can be done anywhere before the footer is printed.

■H5 80 Sets 'header' margins, left to 5 and right to 85.

With complex layouts it is often not practical to use the automatic headers and footers and in this case it is best to use the Reverse INCODE to print a line of text at the exact position. On this page the footer is printed 9 inches below the first line (before photographic reduction).

12.4. Direct Printer Codes

BrunWord Elite can send an embedded string of decimal numbers directly to the printer. This is most useful in situations where a special feature of the printer is needed, which does not warrant a permanent change to the BrunWord printer codes.

The INCODE character <SHIFT> <f.> is followed by P, the number of codes to send, and a list of the numbers.

■P3 27 85 1 Sends 27, 85 & 1 to the printer.

All the INCODE instructions contained in a whole line of print are acted upon **before** the line is printed. If an effect is turned ON and turned OFF in the same line using INCODEs then the whole line will be printed according to the last instruction. Normal Brunword single character control codes are acted upon at the point they occur.

12.5. Downloading Disc File

Any file saved on disc can be downloaded directly to the printer, during normal printing providing that its name starts with \$. The INCODE character <SHIFT> <f.> is followed by D and then the name of the file. If the file name does not start with \$ then the programme will assume that it is a FONT and will be unable to recognise it.

This routine is intended for bit image data to produce pictures or ultra large text. The ASCII end of file character is ignored and so ASCII files should not be used as these will have unwanted characters at the end of the file.

It is important to realise that the file must contain exactly what is to be sent to the printer as the programme does not interrogate the data in any way. The length of the data is taken from the header.

12.6. Delayed INCODE

This is the fundamental page layout control of BrunWord Elite and it allows any INCODE to be set to operate at a particular distance down the page. This INCODE will always reference itself to the first line where the GAP is set (or the top of a new page if it is already set). Normally, the GAP must be set in the very first line for this to work correctly.

First work out the distance down in inches that the INCODE is required to operate at, and multiply this with 216 (9 pin) or 180 (24 pin). Place this number in front of the INCODE instruction that is being delayed and put in double quotes with a second INCODE character at the beginning

■"648■M5 40" Sets margins to 5 and 45, 3" below top (9 pin).

■"540■M5 40" Sets margins to 5 and 45, 3" below top (24 pin).

Before any printing takes place the programme searches the whole work area for a delayed INCODE. It stops at the first one it reaches and notes its operating point. At the beginning, and after each line feed, the programme tests to see if the operating point of the current delayed INCODE has been reached. If it has then its instructions are activated and the programme looks for the next delayed INCODE.

Each delayed INCODE is operated in sequence, starting with the one nearest the start of the text and ending with the one nearest the end of the text. Later delayed INCODEs often operate higher up the page particularly when complex layouts are used. (Obviously, reverse line feed would be used inbetween).

Delayed INCODEs can consist of any compatible INCODEs strung together. Compatibility though, will depend on how your printer is able to cope. For example, setting the margins may cause the printer to ignore a previous instruction within the sequence. There are ways round this such as ■P1 13 to effect a line return within the INCODE sequence but this is not a solution for all problems with all printers. Keep it simple at first.

12.7. Temporary Margins

BrunWord Elite controls the temporary margins in a different way to BrunWord 6128 but most of the time this will go unnoticed. (see page 6). BrunWord Elite actually resets the printer margins when the temporary margin characters are encountered. This ensures that the margins are in the correct place to allow the printer to justify correctly.

Printer margins can only be set in 0.1 inch steps but BrunWord Elite always ensures that the column width is kept constant if the left margin is moved. However, when the temporary left margin is encountered a new column width is calculated and the new right margin can have an error of 0.1 inches. If this happens then the right margin will not be in line. Moving the temporary left margin one character width will usually correct this.

12.8. Absolute TABs

If your printer has the ESC \$ command (absolute dot position) then the absolute TABs of BrunWord Elite can be used. Move the cursor to the position required, hold <SHIFT> and press <F0>. When this is encountered, the programme calculates the absolute dot position from the position on the screen and moves the print head accordingly. With proportional printing the programme assumes that all characters are 'a'.

12.9. Printing in Columns

There are two ways that the programme can print in columns. The method described in this section will work with any printer that uses standard Epson codes to set the margins. (This means all well known modern dot matrix printers). The columns are created by sending control codes to switch the printer margins as required. The second method is covered later in the section on Page Layout.

Simply type or load any text into the work area and set the width of the margins to the width of the column. This means that a single page of text that is to be printed in two columns would show as two pages on the screen and a three column printout would show as three pages on the screen.

The column information is given to the programme as an INCODE instruction. This consists of the INCODE character <SHIFT> <f.> followed by C then the number of columns (1 to 6) then a list of the left offsets for each column. For example, the INCODE instruction to produce two columns with left margins of 5 and 40 is:-

Actual INCODE **■C2 5 40**

Delayed format **■"■C2 5 40"**

This INCODE is typed once, anywhere in the text, regardless of how many pages there are. Usually it will be typed near the start of the text but any convenient line, or a blank line, can be used. Before the programme starts printing it searches the whole work area for column data and the whole file will be printed in columns if this INCODE is found.

If the INCODE is used exactly in the form **■C2 5 40** then all the numbers in the INCODE will be printed, as it is not recognised as a normal INCODE. This is because it cannot be allowed to be acted upon a second time when it is encountered during the printing. It MUST therefore be used in the delayed format **■"...."** to prevent the numbers being printed.

It is a useful rule to remember, that all correctly used INCODEs are not printed. If all or part of an INCODE is printed, then it is not in the correct format or has an error.

When this INCODE is used, the programme will make a dummy run through the print routine to find the start of each page, and then print consecutive pages in adjacent columns. The maximum number of columns is six and there is no limit to where the columns can start. They can overlap each other or be in any order simply by changing the column data at the start of the file. The column width is normally taken as the width on the screen. However, if the programme is performing the justification, then the column width can be set by placing the margin INCODE at an appropriate place.

The temporary left margin **<f1>** cannot be used as this will confuse the programme but the temporary right margin **<f2>** can be used.

All embedded controls will be applied during the dummy print run (except embedded column data). These will normally apply across all the columns and this means that most embedded controls cannot be used properly. (The page layout commands must be used to achieve complex layouts and these can be used with any Epson compatible printer that has reverse line feed).

As you might expect, BrunWord Elite is being used to print the masters of this manual, and we have used the layout of this page to show a typical simple column layout. The heading is wider than one column but we have ensured that the second column starts with two blank lines so that the text is below the heading.

The first example file demonstrates the use of this method of printing columns. See section 16.1.

13. Printers with Reverse Line Feed

Some 9 pin and most 24 pin printers have the facility of reverse line feed. BrunWord Elite is programmed to use this feature to reverse to the top of the page or to set to an exact distance down the page. This gives the ultimate flexibility of layout, as several printouts can be superimposed on each other, with changes made to the printer inbetween printing.

Section 12.9. has already shown a simple method of printing columns that can be used with any printer, but this simple system is restricted to uniform text with equal line spacing.

If the columns are created one at a time, reversing the printer inbetween, then there are no restrictions on how the printing is done. It is possible to download a smaller or larger font and to change the line spacing (GAP) to suit the new type face. Other uses for the reverse formfeed include being able downloading bit image data so that graphics are printed over and around the text.

13.1. Reset to

This INCODE is used to set the print head to an exact position down the page, which can be higher or lower than the current position. It will always reference itself to the first line where the GAP is set or the top of a new page if it is already set. Usually, the GAP will need to be set in the very first line.

The INCODE character <SHIFT> <f.> is followed by R and then a number that is the distance down the page in inches multiplied by 216 (9 pin) or 180 (24 pin).

■R0	Resets the printer to the top of the text.
■R216	Resets the printer to 1 inch below the top (9 pin).
■R180	Resets the printer to 1 inch below the top (24 pin).

13.2. Epson Reverse

The Epson LQ500 does not officially reverse but in practice it will respond to this instruction if it is applied in a particular way. The mechanics of this printer are not ideal for using this facility and it will not test if the paper is in a sensible position. Great care is needed to ensure that the end of the paper has not passed the point of not being able to return and even then a helping hand may be needed.

■E5	Sets reverse routine for Epson LQ500 & LQ550.
■E3	Sets reverse routine for normal printer.

We have used the LQ500 to successfully print very complex pages. We tear off two joined sheets of continuous paper and set the printer with the single sheet feeder. The page is printed on the top of the two sheets and the second sheet ensures that the paper is able to reverse without getting caught. Alternatively, the tractor feed can be used, in which case it is necessary to help the paper back by pulling gently on the second sheet.

If your printer does not respond to the reverse instruction then it is worth trying the ■E5 INCODE. We have not yet found a 24 pin printer that will not reverse with one or the other (except for some early production models which had the facility left out). Some 'normal' printers tend to overshoot if the Epson reverse is used, so if both routines work then always use the 'normal'. The Epson LQ550 *may* reverse with both and so needs the ■E5 INCODE.

14. Printers with Justification

BrunWord 6128 has its own system of justification which will operate properly with any printer, providing that all characters have the same width. However, if this is used with the printer set to proportional printing, then the justification will not be correct.

Some 9 pin printers and most 24 pin printers have their own justification system which BrunWord Elite can use to achieve a near perfect result with any mix of text on a line. There are eight different INCODE instructions in this category, all of which start with <SHIFT> <f.> followed by J then a number between 0 and 7. These give the writer full control of the printers justification system.

Note:- All normal BrunWord 6128 printer codes, <SHIFT> <f1> etc, will only have a space sent to the printer if **J0** i.e. the default condition.

14.0. Print Against Left Margin

J0	Sets printer to ragged right. (Prints against LHS).
J4	Same as J0 but line filled according to char size.

The **J0** INCODE switches OFF the printers justification so that all text will be printed as shown on the screen (as far as is normally possible). This will only be needed if one of the other justification controls has previously been used. For example if **J1** is used to centre the heading then **J0** will normally be needed on the next line (unless a different justification control is required).

The **J4** INCODE switches OFF the printers justification but it also instructs the programme to ignore the end of line shown on the screen, unless it is marked with a paragraph end marker, and to fill the line according to the current column width.

The **J4** INCODE can be used to print unjustified text that is much wider than is shown on the screen. Simply type in the text in normal paragraphs, using any convenient screen margins (usually 1 and 80). Set the printer margins with the margin INCODE then **J4** and print out the file as normal. Its can also be used in situations where a long sequence of control codes would otherwise upset the layout. i.e. where the line is made too long on the screen with codes that will not be printed.

14.1. Print in Centre of Margins

J1	Sets printer to centre the line of text.
J5	Same as J1 but line filled according to char size.

When the programme encounters the **J1** INCODE, it immediately sets the printer to centre all the text. Usually, it will be necessary to reset the printer on the next line, with **J0** (or other justification instruction). When text is centred in this way IT MUST BE TYPED ON THE SCREEN AS CLOSE TO THE LEFT MARGIN AS POSSIBLE. Any spaces at the beginning, or the end, will be included in the length that is centred and so these can cause an offset.

The **J5** INCODE sets the printer to centre the text and instructs the programme to ignore the end of the line on the screen unless this is a paragraph end marker. This can be useful when a line is made too long on the screen with codes that will not be printed, or if the screen column width is narrower than the printer column width.

14.2. Print Against Right Margin

■J2	Sets printer to ragged left. (Prints against RHS).
■J6	Same as ■J2 but line filled according to char size.

When the programme encounters the ■J2 INCODE, it immediately sets the printer to print against the right margin, with a ragged left appearance. This is useful to print the top address and the date of a letter. When text is printed in this way it will normally be typed close to the left margin but this is not essential. Any spaces at the end of the line will offset the text from the right margin.

The ■J6 INCODE has the same function but also instructs the programme to ignore the end of the line on the screen unless this is a paragraph end marker.

14.3. Full Justification

■J3	Sets printer to justify the text within paragraphs.
■J7	Same as ■J3 but line filled according to char size.

The ■J3 INCODE instructs the programme to switch on the printers justification 'when appropriate'. If the justification was simply switched on, then all lines longer than 75% of the column width, would be justified and all lines shorter than this would be left unjustified. This is an over simplified answer to the problem and would often cause the last line of a paragraph to be justified, when obviously it should not be. BrunWord Elite will only turn on the justification for a line when the line does not end with a paragraph end marker. This ensures that the last line in all paragraphs is unjustified and that tabulated text is unjustified even if justification is ON.

The ■J7 INCODE is similar to the ■J3 but is much more powerful. It allows the programme to fill the line according to the true character size and it expands any short lines so that lines shorter than 75% are justified when it is right to do so.

When complex pages are laid out using the delayed INCODE, it will always be necessary to use ■J7 (or ■J4 for unjustified printing). If this is not used then the programme will take the line ends from the screen, and be unable to follow the margin changes correctly.

NOTE:- The printer justifies between its own margins. This means that BrunWord Elite always sets both left and right margins so that the column width is correct. Most printers set margins to the nearest 0.1 inches but BrunWord Elite is programmed for the general case to cater for all printers. This means that occasionally the programme and the printer will have a small disagreement in the true width of the column. The programme may decide that the last line in a paragraph does not need to be justified and cause the printer to overspill onto a second line. If this happens then 3 or 4 fixed spaces <f4> should be added to immediately follow the last word. (This makes the last word effectively longer and forces the whole word onto the next line).

When ■J4 ■J5 ■J6 or ■J7 are used, then the screen will not normally show the correct position of words, lines or pages.

14.4. Reference Width

When printing normal non proportional characters, the printer margins are set by sending the simple logical number to the printer. However, when proportional characters are used, the programme must calculate the margin number according to the average number of characters per inch. BrunWord Elite has a table of widths so that it can look up the size of a proportional character. When the programme is loaded it starts by assuming that the printer is set for printing non proportional characters and that the margins will be the logical number.

The reference width can be set with the INCODE character <SHIFT> <f.> followed with W and then an optional number. If there is no number or the number is 0 then the programme will use the width of the character "a" as its average width. The switch ON value is 32 and this can be reset with **W32**.

When a Font is downloaded, it will normally be necessary to update the reference width by following the download INCODE with **W**. But you may wish not to do this, particularly when you want the width of the text to be the same as a previous font. (In this case **J4 J5 J6** or **J7** must be used otherwise the line end are taken from the screen).

A final point to remember, when using proportional printing, is that most printers set the margins to the nearest tenth of an inch and so the margins cannot always be exactly in the right place. Sometimes its worth juggling them up or down one digit to achieve the best compromise.

14.5. Size Factor

The size FACTOR is the ratio of the screen width to the printed width and is set to 32 unless changed. 32 is the correct value for all non proportional printing while 27 is normally correct for proportional printing.

The Epson LQ500 requires a FACTOR of 32 for proportional printing but the LQ550 and all other printers that we tested require 27.

The size FACTOR is set with the INCODE character <SHIFT> <f.> followed with F and then an optional number. If there is no number or the number is 0, then the FACTOR will be set to 27. The FACTOR can be set to a slightly different value and this will compact or stretch the printing, if the printer is justifying.

15.2. Fonts for Star Printer

14.6. Page Layout

If the delayed INCODE is coupled with the reset INCODE and the margin INCODE then the flexibility of layout is almost unlimited. If a very complex page is designed then it is best to produce just one page at a time. In this case the 'No of Lines' in the print menu should be set to 255 which will allow the page to have any number of lines.

Typical sequence:-

■G30	Sets 24 pin GAP to 1/6 inch. (First line).
■H0 116	Sets header margins to 0 and 116.
■M1 75	Sets start margins to 1 and 76.
■"612■M1 36"	At 3.4 inches set first column width to 36.
■"1908■M42 36■R648"	At 10.6in reset to 3.6in & set offset to 42.
■"1908■M81 36■R162"	At 10.6in reset to 0.9in & set offset to 81.
■R132■J7	Reset to one line above 0.9in. Justify On.
First line of actual text typed here.	

The text is typed into the word processor, on the line immediately below the ■R132 INCODE, without worrying about how it will be printed, or the margin widths. The delayed INCODE sequence will create three columns, with the first column being the width of two columns, for just over 3 inches. It will need to be printed out to find how well it fits the page and edited to be the right length.

Notice that the above delayed INCODE sequence has ■J7 in its last line which allows the programme to fill the lines according to the column width and character sizes. This can be omitted if you use non-proportional spacing but then the temporary right margin must be used to trim the screen columns in the correct places.

14.7. Absolute TAB Left Margin

The Epson LQ500, LQ550 and Citizen Swift-24 do not allow the left margin to be set beyond 4 inches which prevents printouts using more than two columns. In this case the programme can be instructed to use absolute TABs in place of the left margin.

■A0	OFF (Star LC24-10, Citizen HQP40/45).
■A2	ON (Epson LQ500).
■A3	ON (Epson LQ550, Citizen Swift-24).

If an Epson LQ500 is being used to create a page with three columns, or there is any other reason for needing to set the left margin far to the right, then place ■A2 anywhere before the need occurs. Similarly, if an Epson LQ550 or Swift-24 is being used then place ■A3 anywhere before the need occurs.

Once the instruction is given it will remain in operation, even with new files, until it is reset or the programme is reloaded.

Most 24 pin printers accept absolute TABs which means that most will accept the ■A2 or ■A3 INCODE. However, only SOME printers justify correctly after receiving this instruction. If your printer is not listed above then try three columns without this command (or use ■A0 to ensure that it is OFF). If the third column prints in the wrong position then try ■A3 at the start of the text.

15. 24 Pin Printers

BrunWord Elite is at its best when used with a 24 pin printer. However, all 24 pin printers are not the same. The Citizen HQP40/45 printers produce very good quality printing but are being made obsolete in favour of the Swift-24. We found that the Swift-24 is not fully compatible with its Citizen predecessors or with the Epson LQ500 or LQ550. The Star, although a good printer, does not produce quite such technically good printing and is a little heavy on ribbons. Both the Star LC24-10 and Panasonic KXP1124 have badly organised buffers so that a font cannot be downloaded without adding a RAM card, which greatly affects their cost effectiveness. The mechanics of the LQ500 are not ideal for reversing the paper but this is now replaced with the LQ550 which has a push tractor with paper parking.

On balance, the Epson LQ550 is a clear favourite, combining the best quality printing with superb mechanics.

15.1. Downloading a Font

BrunWord Elite is supplied with four proportional fonts, in various sizes, for use only with 24 pin printers. Before these can be used, you will need to read your printer manual and ensure that its buffer is correctly set for use with a downloaded font. Certain printers such as the LC24 and the KXP1124, will need a RAM card inserted before this is possible.

The INCODE for downloading a font is the same INCODE as for downloading a disc file (section 12.5). If the file name being downloaded does NOT begin with \$ then the programme assumes that it is a font.

A font can be downloaded any time during printing with the use of the INCODE character followed with D and then the name of the FONT. The name MUST be followed with a space, which will usually be followed with **W** **F** so that the reference WIDTH is updated and the size FACTOR set for proportional printing.

Often this INCODE needs to be placed at the very start of the text. In this case the space at the end of the font name will add a space to the start of that line. This is usually not wanted and can be prevented by using the delayed INCODE format. **W** and **F** must be outside the delayed INCODE, in this case, because of the space following the name

D FINELINE.L **W****F**

Downloads 'large' size FINELINE font.

D FINELINE.L **W****F**

As above but in delayed format.

Each font has a table of character widths and this updates the table in the programme. Numbers 2 3 4 5 6 7 8 9 0 and characters + - * / = % £ \$ are the same width to assist tabulation. The back slash character (key no. 22) has been defined as an equal width number 1 and shift back slash as an equal width decimal point.

15.2. Fonts for Star Printers

The Star LC24-10 does not allow the space character to be defined. With this printer, or any other that has this limitation, it is necessary to use the fonts with a full size space. These all have .SS after the name. e.g. the medium size of Finetype with full size space is called FINETYPE.SSM.

15.3. Font Print Examples

Most fonts used in magazines fall into one of two types. We have optimised our own variations of these, and named them *Fineline* and *Finetype*. 'Fineline' is the font used throughout this manual and is supplied in small, medium and 'large' sizes. 'Large' being the largest size that the printer can print without using double height or double width.

This paragraph is using the 'large' size 'Finetype', which is also supplied in the medium size. It is a little too heavy in the small size. Many readers would choose this type face for the whole booklet rather than our choice of *Fineline* as both styles have a wide appeal.

Now we are using 'Heavy', a simple name to depict a straightforward type setting font. Too heavy for this booklet but useful where a more rugged appearance is required or for short pieces of text such as letters. It is only supplied in this size, 'large'.

This is 'Comput', which is a simulated rather than a true computer font, intended for headings or other special uses. We have deliberately deviated from the normal interpretation of this font, and made the numbers over square but without the Computer blob. 1234567890.

15.4. Print Box or Line

This INCODE will draw a box or line of any size and with a line thickness of 1 to 8 pins (print head). The lines or box will start from the middle of the current print head position, while all the other parameters will be taken from the data in the INCODE. The programme draws the box or the lines and then reverses the printer back to the starting point. If an Epson LQ500 or similar printer is used, then the instructions in section 13.2 must be followed.

■B <thickness> <depth> <type> <1st position> <2nd position> etc.

Thickness	1 pin thick = 16. 2 = 24. 3 = 28. 4 = 30. 5 = 31. 6 pins = 63. 7 pins = 127. 8 pins = 255.
Depth	Inches multiplied by 180.
Type	2 = box. 0 = hor line. 1, 3, 4 etc = vert line(s).
1st position	Inches multiplied by 60 from current left margin.
2nd position	Inches multiplied by 60 from current left margin.

■B16 360 2 60 180	Box, thin line, 2 inch square, 1 inch from margin.
■B28 0 0 60 180	Hor line, 3 pins thick, 2" long, 1" from margin.
■B24 360 1 60	Vert line, 2 pins thick, 2" deep, 1" from margin.
■B16 360 3 30 60 90	Vert lines, thin, 2" deep, .5" 1" & 1.5" from marg.

Boxes with lines thicker than 5 pins will not have perfectly square corners and some printer ribbons may jam when a thick line, of 4 or more pins, is drawn using the Star LC24.

16. BrunWord Elite Examples

BrunWord Elite is a very powerful programme, yet easy to use, but that does not mean that you will be able to use the programme without spending some time learning about the control techniques and potential pitfalls. These examples are included to show you exactly how the programme works and to enable you to ensure that your printer will perform in the way that you are expecting.

Before loading the programme, switch the computer OFF and switch the printer OFF. Then connect the special printer lead, with the 8 bit printer status port, between the computer and the printer. BrunWord Elite will not work correctly if any other lead is used.

When this is done, switch ON the computer, insert the BrunWord Elite disc and type RUN "BRUNWORD" <ENTER>. When the main menu is displayed, remove the BrunWord Elite disc and put safely away.

The programme discs have extensive protection and cannot be copied but the Fonts & Examples disc is unprotected. If you use a 24 pin printer and expect to regularly use the supplied fonts, then it is best to make a working copy of the Fonts & Examples disc. To do this using Disc Extension, insert the BrunWord Elite disc, press <ESC> letter O, type DISC <ENTER>. When it is loaded, remove the disc and press X C. Ensure that the Fonts & Examples disc is write protected (both tabs open) and that your new disc is not write protected. Follow the instructions on the screen to copy side A then side B of the Fonts & Examples disc to your own disc.

16.1. Example 1 – Simple Columns

This example demonstrates the simple method of printing in columns and will work correctly with any 9 pin or 24 pin Epson compatible printer.

1. Insert the Fonts & Examples disc. Press <ESC> C W to ensure that the work area is clear. Press <ESC> L EXAMPLE.1 <ENTER>.
2. Press <ESC> P and the Print menu will be displayed. The printer status should be 'Printer OFF'. Make sure that there is no paper in the printer and switch it ON. The printer status should change to 'No Paper'. It may report 'OFF Line' while the printer is being initialised but if any status other than 'No Paper' is reported once it has settled, when it really is out of paper, then either your printer does not report correctly (which may mean it is not truly Epson compatible) or you are using the wrong printer lead. Load the printer with paper and press the ON LINE button on the printer. The programme should report 'On Line'.
3. Press P N 1 <ENTER>, to print out the file.
4. If just the first line is printed and the programme returns to the editor then either you are using the wrong printer lead or your printer is not Epson compatible and is sending the wrong answers when the programme interrogates it.

16.2. Example 2 – IBM Boxes

This example demonstrates the use of the IBM box characters. The number keys 3 to 0 across the top of the keyboard, if used with the <CTRL> key, produce the special IBM box characters. If your printer accepts IBM codes as well as Epson codes then this file should print out correctly. If strange things happen then either your printer does not accept IBM codes or it uses a different standard.

1. Insert the Fonts & Examples disc. Press <ESC> C W to ensure that the work area is clear. Press <ESC> L EXAMPLE.2 <ENTER>.
2. Switch your printer OFF if it is already ON, to ensure that it is fully reset. Load the printer with paper and switch it ON. Press <ESC> P P N 1 to print out the file.
3. If the file does not print correctly and your printer is claimed to be IBM and Epson compatible then you should read your printer manual and then read the BrunWord TUTOR2 text file. It is not easy but you may be able to redefine the codes to suit your printer.

16.3. Example 3 – Columns & IBM Boxes

This example demonstrates how the column feature can be used to separate the box characters from the text so that very complex layouts are possible. This is particularly useful if your printer does not have reverse line feed. Follow the instructions in 16.2 above to print the file (but enter the name as EXAMPLE.3).

16.4. Example 4 – Reset to

If your printer has the reverse line feed facility, then this example file will demonstrate the use of the 'Reset to' facility of BrunWord Elite.

1. Insert the Fonts & Examples disc. Press <ESC> C W to ensure that the work area is clear. Press <ESC> L EXAMPLE.4 <ENTER>.
2. Switch your printer OFF if it is already ON, to ensure that it is fully reset. Load the printer with paper and switch it ON. Press <ESC> P P N 1 to print out the file.
3. If your printer does not reverse during the printing and you believe that it should have this facility then try the Epson reverse in example 5.

16.5. Example 5 – Epson Reverse

If your printer has the reverse line feed facility, but is the LQ500 or similar printer, then this example file should be used instead of example 4. It is exactly the same, except that it has the special Epson reverse INCODE IE5 in the first line before the GAP INCODE.

1. Insert the Fonts & Examples disc. Press <ESC> C W to ensure that the work area is clear. Press <ESC> L EXAMPLE.5 <ENTER>.
2. Switch your printer OFF if it is already ON, to ensure that it is fully reset. Load the printer with paper and switch it ON. Press <ESC> P P N 1 to print out the file.
3. If your printer does not reverse using either this or the previous example then either you are mistaken about it having this facility or it is not Epson compatible.

16.6. Example 6 – 24 Pin Boxes

This example demonstrates the box and line drawing facility for use with 24 pin printers. The printer must have the reverse line feed facility which should be the case with all 24 pin printers. Example 6 and Example 7 are identical except that Example 7 is for use with the Epson LQ500 or similar printer.

1. Insert the Fonts & Examples disc. Press <ESC> C W to ensure that the work area is clear. Press <ESC> L EXAMPLE.6 <ENTER>.
2. Switch your printer OFF if it is already ON, to ensure that it is fully reset. Set the printer to use the tractor feed, load it with continuous paper and switch it ON. Press <ESC> P P N 1 to print out the file.
3. The programme draws each box or set of lines one at a time, returning to the start position at the end of each. Watch as the first box is drawn. If the printer does not reverse after drawing the bottom line then either the printer is the LQ500 type and you need to print Example 7 or the printer does not have the reverse line feed feature (for example early production models of the Swift-24 had this feature left out).

16.7. Example 7 – Epson 24 pin Boxes

If your printer is the Epson LQ500 or similar type then this example must be used in place of Example 6. It is identical to Example 6 except that it has the special Epson reverse INCODE ■E5 as the very first instruction. Follow the instructions in example 6 but type in the name as EXAMPLE.7 <ENTER>.

The LQ500 has a pull tractor and does not test whether it is sensible to reverse. It is therefore essential for the user to ensure that the paper is arranged so that it will not jam. Set the printer to use the tractor, tear off two sheets of continuous paper and print on the first sheet. YOU CAN THEN HELP THE PAPER BACKWARDS WITH A GENTLE PULL ON THE SECOND SHEET.

16.8. Example 8 – HQP40/HQP45 Example

This example shows a typical layout for using the Citizen HQP40 or HQP45. It is almost a standard file but uses the special Citizen codes for double height. <CTRL> 1 and <CTRL> 2 have been defined to turn ON and turn OFF double height, double width, emphasised printing, for use only with the HQP40 and HQP45. Follow the instructions in example 6 but type in the name as EXAMPLE.8 <ENTER>.

16.9. Example 9 – LQ550 Example

This is identical to example 8 but uses the standard double height and double width printer codes (page 14), positions the headings slightly differently and has the ■E5 and ■A3 INCODEs at the start of the file. Follow the instructions in example 6 but type in the name as EXAMPLE.9 <ENTER>.

16.10. Example 10 – LQ500 Example

This is identical to example 9 but has ■E5 as the very first instruction to set the Epson reverse, ■A2 to use absolute TABs in place of the left margin and has ■F32 to set the print FACTOR set to 32. Follow the instructions in example 7 but type in the name as EXAMPLE.10 <ENTER>.

16.11. Example 11 – Star LC24 Example

Example 11 demonstrates the use of the Star LC24 both with and without the 32K RAM card. The top half of the page uses the internal fonts while the bottom uses the downloaded fonts. The whole page will print correctly if a 32K RAM card is fitted but if not, then the bottom will have mixed characters and will overspill the page. Follow the instructions in example 6 but type in the name as EXAMPLE.11 <ENTER>.

17. Reasons for Failure

1. **More than ONE space.** All the parts of an INCODE sequence MUST have just ONE space between them. Also, all INCODEs within one delayed format MUST have just ONE space between them.
2. **Bad Command.** All font names and other disc files MUST be followed with one space.

16.4. Example 4 – Hoeset to

This example shows a typical layout for using the Citizen HOP40 or HOP45. It is almost identical to example 3 but uses the HOP40 or HOP45 instead of the HOP30. The instructions have been defined to use only the HOP40 and HOP45. Follow the instructions in example 3 but type in the name as EXAMPLE.4 <ENTER>.

16.8. Example 8 – HOP40/HOP45 Example

This example shows a typical layout for using the Citizen HOP40 or HOP45. It is almost identical to example 3 but uses the HOP40 or HOP45 instead of the HOP30. The instructions have been defined to use only the HOP40 and HOP45. Follow the instructions in example 3 but type in the name as EXAMPLE.8 <ENTER>.

16.5. Example 5 – Epson Hoeset

This example shows a typical layout for using the Epson Hoeset. It is almost identical to example 3 but uses the Epson Hoeset instead of the HOP30. The instructions have been defined to use only the Epson Hoeset. Follow the instructions in example 3 but type in the name as EXAMPLE.5 <ENTER>.

2. Switch your printer OFF if it is already ON, to ensure that it is fully reset. Load the printer paper and switch it ON. Press <ESC> P P H N to print the file.
3. If your printer does not reverse using either the or the previous example, then the printer may not be fully reset. Press <ESC> P P H N to print the file.

