

Using WordPerfect's PRINTDEF Program

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GENERAL INFORMATION AND HELP

The PRINTDEF program has been included with your copy of WordPerfect to let you examine, change, or add to the printer definitions and character tables which come with WordPerfect. PRINTDEF is technically oriented and is not recommended for novice users. However, most WordPerfect users never need to use the PRINTDEF program because a large number of printers and character tables come predefined. The list of defined printers appears when you use the Select Printers option in WordPerfect. In addition, your dealer has (or can obtain from WordPerfect Corporation) an even more up-to-date list of defined printers which you can obtain free of charge.

This documentation has been organized in the same format as the program itself. If you want to change something specific in a printer definition, use the table of contents and/or index to find an explanation of the feature you wish to change. If you decide to define a new printer, you should read this entire file first to get a feel for the different options that are available. Printing this file from WordPerfect should help too, since you can then follow along as you move through the menus in PRINTDEF.

PRINTDEF itself includes several help screens which serve as a reminder of some of the information contained in this file. These may be viewed by selecting that option on the main menu.

Syntax for entering strings inside PRINTDEF is straightforward. The **editing** keys function much the way they do in WordPerfect. Printable ASCII characters (decimal 33 to 126) are themselves. Nonprintable ASCII characters (anything less than decimal 33 or greater than decimal 126) are entered as decimal numbers inside of angle brackets <> (less than, greater than signs). For example, to enter a linefeed (LF) into the printer definition, the syntax would be <10>. A carriage return (CR) would be <13>. If you ever get lost, remember that you can exit most prompts by pressing **Cancel**, and the **Exit** key will save any changes you made and return you to DOS.

Printer manuals will often show Basic syntax. Basic's CHR\$() is equivalent to WordPerfect's <>. Basic's "xxxx" (string in double quotes) is equivalent to WordPerfect's xxxx (same string without quotes).

For example, Basic CHR\$(27)"p"CHR\$(1) would be entered as <27>p<1> in WordPerfect. (This would be written ESCpSOH in

ASCII.)

32	20	SP
33	21	!
34	22	"
35	23	#
36	24	\$
37	25	%
38	26	&
39	27	'
40	28	(
41	29)
42	2A	*
43	2B	+
44	2C	,
45	2D	
46	2E	.
47	2F	/
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9
58	3A	:
59	3B	;
60	3C	<
61	3D	=
62	3E	>
63	3F	?

64	40	@
65	41	A
66	42	B
67	43	C
68	44	D
69	45	E
70	46	F
71	47	G
72	48	H
73	49	I
74	4A	J
75	4B	K
76	4C	L
77	4D	M
78	4E	N
79	4F	O
80	50	P
81	51	Q
82	52	R
83	53	S
84	54	T
85	55	U
86	56	V
87	57	W
88	58	X
89	59	Y
90	5A	Z
91	5B	[
92	5C	\
93	5D]
94	5E	^
95	5F	_

96	60	`
97	61	a
98	62	b
99	63	c
100	64	d
101	65	e
102	66	f
103	67	g
104	68	h
105	69	i
106	6A	j
107	6B	k
108	6C	l
109	6D	m
110	6E	n
111	6F	o
112	70	p
113	71	q
114	72	r
115	73	s
116	74	t
117	75	u
118	76	v
119	77	w
120	78	x
121	79	y
122	7A	z
123	7B	{
124	7C	
125	7D	}
126	7E	~
127	7F	DEL

One word of caution: WordPerfect Corporation has carefully tested each printer inhouse to provide you with the best printer definitions possible. Often we have been forced to strike a balance between speed and flexibility, or to avoid a printer feature because it does not function consistently. Sometimes we have encountered printer hardware or documentation bugs which we have tried to work around. Before changing a printer definition, remember that there is probably a very good reason why it was put together the way it was.

Good luck!

EXPLANATION OF SPECIAL CODES

Letters in angle brackets < > represent codes which have special meanings inside the WordPerfect PRINTDEF program. These codes may be entered by holding down the **Alt** key and typing the letter. They provide a means of getting around printer inconsistencies and limitations. They also provide access to features available only from inside WordPerfect.

<A> Is a method of abbreviating the strings used to shift both in and out of an alternate character set. It is used primarily in the character table.

<A>c means **Shift Into Alternate Character Set**, print the **c** character, and then **Shift Back to Normal Character Set**.

**** Is used to restore line spacing value after changing it.

Superscripting can be performed by changing line spacing to 20 lines per inch, doing a reverse line feed, and then printing the character. After moving back to the original line, the superscript off string must include a **** to restore the original line spacing value.

<C> Restores the pitch after changing it and is similar to ****.

<D> Performs a carriage return and then spaces back to the current print position.

To print a Ç using 2 characters (Cand,) you would normally place **C<8>**, in the character table. However, if your printer cannot backspace, use **C<D>**, instead.

<E> Identifies strings that must be sent to the printer at the start of every printed line if that feature is in effect.

<F> Beeps and forces printing to wait for a "Go."

Pause printing to change print wheels by including **<F>** in the

Shift Into Font string.

<G>Represents an HMI value in binary form.

A HMI value of 12 is sent as **<12>** if **<G>** is used in the **Set HMI** string.

<H> Represents an HMI value in ASCII form.

A HMI value of 12 is sent as **12** if **<H>** is used in the **Set HMI** string.

<I>Changes bolding from triple overstrike to double overstrike on HMI controlled printers.

If bolding appears too dark, you can include **<I>** in the **Initialize Printer Before Print Job** string. This may lighten the text or it may cause "shadow" printing.

<J>Identifies Tandy DWP IIB type printers.

Place this in the **Initialize Printer Before Print Job** string if your printer fits into this category.

<K>Represents a VMI value in binary form.

An VMI value of 12 is sent as **<12>** if **<K>** is used in the Set VMI string.

<L> Represents a VMI value in ASCII form.

An VMI value of 12 is sent as **12** if **<L>** is used in the **Set VMI** string.

<M>Turns proportional spacing on.

Place **<M>** in the **Shift Into Font** string if you want to define a font which can only be used in proportional spacing mode.

<N>Turns proportional spacing off.

Place **<N>** in the **Shift Into Font** string if you want to define a

font which can only be used in nonproportional spacing mode.

<O>Saves the current font number and switches to a new font. Must be followed by a binary code equal to the font number.

Sometimes the best way to bold is by selecting a bold font. Laser printers and typesetters often fall into this category. Place **<O><8>** in the **Auto Bold On** string to save the current font and to select font 8 whenever bold text is printed. Warning! Place **<P>** in the **Auto Bold Off** string or the original font will not be restored after the bold text is printed.

The **<O>** command will save up to twenty levels of previous fonts. Each time **<O>** is invoked, the **Shift Into Font** string is sent for the new font, and the new font's character table is loaded and used. The only exception to this rule is when **<O>** is used inside a character table. In this case, the **Shift Into Font** string is sent, but the new character table is not used. Use **<U>**, **<V>**, or **<W>** if access to one character table is required from inside another.

<P>Switches back to the last unrestored font which was saved by an **<O>** code.

In a character table, **<P>** causes the **Shift Out of Font** string to be sent, but no swapping of character tables is performed.

<Q>Defines character width for a font on a printer which uses microspacing. Must be followed by a binary code equal to ten times the pitch value.

The HP LaserJet-B printer definition uses microspacing to perform right justification. In order to right justify the nonproportional Courier font at variable pitches, WordPerfect must know the width of those characters. Since this is a 10 pitch font, **<Q><100>** has been entered in the **Shift Into Font** string. (Note: This will only work properly if the character width works out to be an integral number of microspacing units.)

<R>The <R> has no function in the Amiga version of WordPerfect.

<S>Represents a Microspace value in binary form.

A microspace value of 12 is sent as <12> if <S> is used in the **Perform Microspace Command** string.

<T> Represents a Microspace value in ASCII form.

A microspace value of 12 is sent as **12** if <T> is used in the **Perform Microspace Command** string.

<U>May be used inside a character table to replace a character with the string assigned to it in another font. Must be followed by two binary codes. The first identifies the new character table to use, and the second is the code to be replaced.

Suppose that character table 8 contains a complex string which prints a new symbol. Suppose also that this string is assigned to the character code **<255>**. This complex string is sent to the printer whenever the sequence **<U><8><255>** is encountered in any of the other character tables.

Note that **<U>** causes the **Shift Into Font** and **Shift Out of Font** strings to be sent to the printer.

<V>May be used inside a character table to replace a character with the string assigned to it in the same font. Must be followed by the code of the character to replace.

Space may be saved inside character tables through careful use of **<V>**. For example, the string assigned to the code **<255>** is sent to the printer whenever **<V><255>** is encountered in that character table. In short, **<V>** allows characters to be defined in terms of other characters.

<W>May be used inside a character table to represent the string assigned to the current character in another font. Must be followed by a binary code equal to the literal font number.

Note that **<W>** causes the **Shift Into Font** and **Shift Out of Font** strings to be sent to the printer.

<X>Is used for downloading files to the printer from within a printer definition. The filename to be downloaded should be enclosed within **<X>**'s. Example: **<X>PSCRIPT.PS<X>**. This code is most useful in the **Initialize Printer Before Print Job** string, but may be used in font change strings or any other string in the printer definition.

<Y>Is used only in the **Initialize Printer Before Print Job** string for the Amiga printer. This indicates the printer definition will print using the setting selected in Preferences.

PRINTER DEFINITIONS

A printer definition is a table of codes which WordPerfect uses to right justify, underline, superscript, and perform other word processing functions on a particular printer. Each printer definition also contains codes to make the printer shift into different fonts and the names of the character tables to use with those fonts.

Printer definitions are necessary because each printer speaks its own language and each has its own limitations. In some cases, a printer may even need to be defined several different ways to handle all of its capabilities. For example, the HP LaserJet may be configured with several different font cartridges. The **LaserJet-A** printer definition has been set up for use with font cartridge A, and the **LaserJet-B** has been set up for font cartridge B (proportional spacing).

Printer definitions also give the user some additional control over the appearance of the printed page and the behavior of the printer. For example, the **Maximum Width of Space Character** question allows you to decide how right justified text should look, and the **Print Bold Text On a Second Pass?** question may be used to change the speed of printing and the appearance of bold text.

Printer definitions may be created, deleted, renamed, or edited by selecting option **3** from the main menu.

Creating a Printer Definition

To create a new printer definition, use the mouse to select **Create** on the Edit pulldown menu. You will then be asked for the name of the new printer. Type up to 30 characters and press **Return**.

Next you will be asked for the number of the printer to use as a pattern in creating the new definition. An exact copy will be made of the printer definition you select, and this will become the starting point in defining the new printer. Enter the number of a printer which is similar to the one you intend to define, or enter **164** to use the standard **Line Printer** definition.

The next menu to appear lists all eleven categories of printer information. Type any number or letter shown and the questions

for that category will appear, followed by the current codes and answers for those questions. In defining a printer, you will need to examine every question to make sure that the correct codes have been entered. A detailed explanation of each question in each category is found under "Editing a Printer Definition."

In practice, any printer worth defining will take a few attempts to get it right. Sometimes control codes don't do exactly what they sound like they should do. In addition, most printers have features that function so differently from other printers that WPCORP software can't use them. Remember too that even though a printer doesn't support one feature, it may support a second, which can be used to imitate the first. A good example of this is superscripting. If your printer won't do it automatically, it can still be accomplished by advancing the paper up and then down.

Deleting a Printer Definition

Select the **Delete** option from the Edit pulldown menu. Enter the number (carefully!) of the printer definition you wish to delete, or press **Cancel** to exit without deleting.

This option is useful for getting rid of old versions of a printer definition you create yourself.

Renaming a Printer Definition

Select the **Rename** option from the Edit pull down menu. Enter the number of the printer definition you wish to rename, or press **Cancel** if you decide not to do any renaming. When you are asked for the new printer name, type up to 30 characters and press **Enter**.

Editing a Printer Definition

To edit a printer definition, click on the printer name in the list or enter the printer number. If your printer doesn't appear in the first screen of printers, press the **PgDn** key or click on the **Next Screen** gadget to display another screen of printers.

The next menu to appear lists all eleven categories of printer information. Type any number or letter shown and the questions for that category will appear, followed by the current codes and

answers for those questions.

If you want to change a printer definition, the following steps are recommended, since they allow you to make mistakes without destroying a working definition:

1. **Create** a new printer definition using the old one as a pattern- this is your duplicate of the original;
2. **Edit** the original printer definition, and test it by using it in WordPerfect;
3. After the modified definition has been thoroughly tested, **Delete** the duplicate printer definition only if you are sure you will never need it.

Printer Initialization

Printer Type

Enter **1** if you have a Tandy DWP IIB type printer. This printer requires an extra code to be sent with each printed character to control hammer intensity, ribbon motion, etc.

Enter **2** if you have a dot matrix printer which has trouble using WordPerfect's underlining and bolding (excessive print head motion). **Warning!** Underline characters may not overlap and bolding is performed on a second pass.

Enter **0** for any other kind of printer.

Initialize Printer Before Print Job

This string is sent to the printer at the beginning of every print job. Use this to reset the pitch, line spacing, etc., before printing each document.

Reset Printer After Print Job

This string is used to reset the printer at the end of every print job. Use this to advance the page to top of form, reset the pitch, etc. Remember that whatever state WordPerfect leaves the printer in is the state in which it will be found by the next program.

Initialize Printer at Start of Page

This is sent to the printer at the beginning of every page.

Reset Printer at End of Page

If defined, WordPerfect sends this string to the printer at the end of every page instead of trying to advance to the top of the next page. Always include a form feed in this string if you use it in a printer definition.

Move Print Head to Center of Platen

If you have a sheet feeder on your printer, this string will be sent before each page is inserted. This keeps the paper against the platen, preventing the print head from tearing the paper.

Send Bell to Printer When Waiting for a "Go"?

This flag is ignored in the Amiga version of WordPerfect.
Instead of sending a bell to the printer, a "Go" is displayed on
the screen.

Forms Length Setting Type

This value tells WordPerfect which type of form length setting string to send to the printer. Type 0 should be used when no form length string is needed or wanted. Selecting another number will cause WordPerfect to send a specific string to the printer whenever a page length setting is encountered in a document. Information about which string is sent for each type selected is found in the help information of the PRINTDEF program.

Carriage Return/Backspace Control

Perform Carriage Return

Some printers require that CR's and LF's be sent together. If this is the case, enter <13><10> here and answer "yes" to **Automatic Line Feed with Carriage Return?** If the string is blank, it is assumed to consist of the standard carriage return character <13>.

Automatic Carriage Return with Line Feed?

Some printers will automatically perform a CR when they receive a LF code. Answer "yes" if your printer does this.

Automatic Line Feed with Carriage Return?

Some printers automatically perform a LF when they receive a CR code. Answer "yes" if your printer does this. If you answer "yes" to this question and you do not have a backspace, you may not be able to bold, underline, or overstrike. (See Also Perform Carriage Return).

Does Printer Have Backspace Capability?

Some printers cannot backspace. If yours can, answer "yes" and enter the backspace command under Perform Backspace. If your printer does not have a backspace or a reverse line feed, it may not be able to consistently overstrike, underline or superscript.

Perform Backspace

This string will be sent whenever **WordPerfect** sends a backspace to the printer. If the string is blank, it is assumed to consist of the standard backspace character <8>.

Auto Underline on Second Pass

This flag is only used if the printer has its own automatic underlining strings. It determines whether the underlining is done on the first pass as the text is being printed, or if the underlining is done on a separate pass by itself.

Some printers will not underline the partial spaces that **WordPerfect** may use to right justify the line. If these microspaces do not underline properly, the underlining will be broken. Setting this flag to **Y** will cause WordPerfect to do its underlining on a separate pass after the text has been printed, so that the underline characters will print continuously.

A sideeffect of using this method is that the underling may end a little before the correct position when printing in proportional spacing.

Number of Overstrikes for Bolding

When a printer does not have automatic bolding, WordPerfect will print bolded text by striking the bolded text more than once. The value of this variable will determine how many strikes are made.

Line Spacing and VMI

Set 6 Lines/Inch

Insert the command here that sets your printer to 6 lines per inch (not required if your printer supports VMI).

Set 8 Lines/Inch

Insert the command here that sets your printer to 8 lines per inch (not required if your printer supports VMI).

Perform Line Feed

This is used to advance down the page one line. Almost every printer requires a **<10>** here. Some printers require that CR's and LF's be sent together. If this is the case, enter **<13><10>** here and answer "yes" to **Automatic Carriage Return with Line Feed?**

Perform Reverse Line Feed

This is used to advance up the page one line. If your printer has this capability, enter the code for it here.

Perform 1/2 Line Feed

If your printer cannot do this, you will not be able to use the Advance Down feature in WordPerfect, unless your printer supports VMI.

Perform Reverse 1/2 Line Feed

If your printer cannot do this, you will not be able to use the Advance Up feature in WordPerfect, unless your printer supports VMI.

Advance Paper 1/24th Inch

WordPerfect uses this command to get to the top of the next page if 6 and 8 lines per inch were used on the same page. This was formerly used to advance paper 1/48th of an inch.

VMI Unit

VMI (Vertical Motion Index) defines the vertical distance the platen moves when the printer receives a line feed or reverse line feed. Enter the units in which VMI is defined on your printer. Most printers which support VMI accept settings in 1/48th inch increments.

Set VMI

If a printer supports VMI, this string is sent to the printer whenever WordPerfect needs to adjust the width of a line feed or reverse line feed. Insert **<K>** or **<L>** where the VMI setting needs to be inserted. For example, Diablo printers accept VMI settings in binary form:**<27><30><K>**.

VMI Bias Factor

The VMI Bias factor is added to the VMI value before it replaces **<K>** or **<L>**. For example, Diablo printers have a bias factor of **1** because the difference between the code sent to the printer and the actual VMI setting is 1, e.g., VMI set to 1/48th inch = **<27><30><2>**, VMI set to 2/48ths inch = **<27><30><3>**.

Maximum VMI Setting

Enter the maximum VMI setting supported by your printer.

Microspacing and HMI

HMI Unit

HMI (Horizontal Motion Index) defines the horizontal distance the print head moves when the next character is printed. Enter the units in which HMI is defined on your printer. Most printers which support HMI accept settings in 1/120ths of an inch

increments.

HMI is the preferred method of controlling the print head because WordPerfect then controls character widths, making right justification easier. However, some printers do not have HMI, and some printers that have HMI have fonts that cannot be controlled with HMI. In either of these cases you must use microspacing instead of HMI if you want to print right justified text without space fill. ("Space fill" means that full-sized spaces are added between the words to fill out the line. When this is done, the printed line may look uneven because the words have varying numbers of spaces between them. Printers which cannot microspace and do not support HMI must use space fill to print right justified text.)

Microspace Unit

Microspacing may be used as an alternate method for right justification (use HMI instead of microspacing if your printer supports it). If your print head can move a relative number of units to the right (any amount or in units of 1, 2, 4, 8, and 16), then your printer can microspace. In order to microspace, you must enter the units of motion, define strings to perform Microspace Movement or strings to advance 1, 2, 4, 8, and 16 units, and answer the question about proportional spacing.

The critical difference between HMI and microspacing is that HMI allows WordPerfect to both compress and expand characters while microspacing allows only the expansion of characters on a line. For example, a 10 pitch font could be printed at 15 pitch if HMI is used, but if microspacing is used the words would probably run together. The same 10 pitch font could be printed at 8 pitch using either method.

Strings may be defined for both HMI and microspacing. In this case, WordPerfect assumes that HMI affects only the width of the space character when proportional spacing is in effect. HMI will be used to print non-proportional fonts, and proportionally spaced fonts are printed using HMI settings and spaces to advance between words or letters. This is the case with the HP LaserJet, as well as many NECs, Diablos, and Qumes.

Set HMI

If this string is defined, WordPerfect assumes that your printer supports HMI. This string is sent to the printer whenever WordPerfect needs to adjust the HMI setting. Insert <G> or <H>

where the actual HMI setting needs to be inserted. For example, Diablo printers accept HMI settings in binary form:<27><31><G>.

HMI or MS Bias Factor

The HMI or MS Bias factor is added to the HMI or microspace value before it replaces <G>, <H>, <S>, or <T>. For example, Diablo printers have a bias factor of 1 because the difference between the code sent to the printer and the actual HMI setting is 1, e.g., HMI set to 1/120th inch = <27><31><2>, HMI set to 2/120ths inch = <27><31><3>.

Maximum HMI or MS Setting

Enter the maximum HMI or microspace setting supported by your printer.

Perform Microspace Movement

This string is sent to the printer whenever one or more units need to be advanced in order to accomplish justification when a printer does not have HMI. (See **HMI Units** and **Set HMI**) Insert <S> or <T> where the actual microspace setting needs to be inserted. For example, the HP LaserJet uses a setting of <27>&a+<T>H. (See **Microspace Units** and **Use Microspacing for Proportional Spacing Only?**)

Advance 1, 2, 4, 8, 16 Microspace Units

If there is no **Perform Microspace Movement** string, these strings are used instead to print rightjustified text. These strings should only be used when the microspace commands are too complex to use the **Perform Microspace Movement** string. (The Epson FX printer is one that fits into this category.)

Use Microspacing for Proportional Spacing Only?

This question determines when microspacing is used. If you answer "no," microspacing is used anytime you print right justified text. If you answer "yes," microspacing is used only to right justify proportionally spaced text-HMI is used to right justify non-proportionally spaced text, if it is supported, otherwise space fill is used.

Superscript/Underline/Bold

Subscript On/Off

Enter the codes that turn automatic subscripting on and off. If your printer does not support this feature, try inserting commands which move the carriage down and then up.

Superscript On/Off

Enter the codes that turn automatic superscripting on and off. If your printer does not support this feature, try inserting commands which move the carriage up and then down.

Auto Underline On/Off

Enter the codes that turn automatic underlining on and off. If this is left blank, WordPerfect is usually able to underline anyway. WordPerfect's underlining is performed by doing a CR, spacing over, and using the underscore character. This is generally slower but is more reliable and may look better or worse, depending on your printer.

Auto Double Underline On/Off

Enter the codes that turn automatic double underlining on and off. If this is left blank, WordPerfect performs double underlining by using the **Move Down** and **Move Up** strings and the **Double Underline Character** defined in the Special Text Markingsmenu.

Bold/Italics

Auto Bold On/Off or Start/End Second Pass for Bold Text

Enter the codes that turn bold printing on and off. If these are left blank, WordPerfect usually prints bold text anyway. On HMI controlled printers, this is usually done by triple striking the characters. On printers which are not controlled by HMI but which have backspace capability, this is done by backing up and overstriking each character to be bolded.

If WordPerfect's bolding is too slow, you may want to bold on a second pass. Do this by answering "yes" to **Print Bold Text on a Second Pass?**, then enter the codes to be sent to the printer at the beginning and end of the bold pass. For example, answering "yes" and leaving the codes blank would cause the characters to be double struck. You could also shadow print by telling the print head to move over before performing the bold pass.

Print Bold Text on a Second Pass?

This answer determines the method of bolding as described in **Auto Bold On/Off or Start/End Second Pass for Bold Text**.

Auto Italics On/Off

Enter the codes required by your printer that turn Italics On and Off. This will allow WordPerfect to automatically print Italics without requiring a font change to be entered.

If you have a letter quality printer, you may have to change a print wheel or thimble cup to obtain italics. If this is the case, include the **<F>** command in the On/Off strings to cause the printer to wait for a "GO." Some printers are unable to print italics. Leaving these options blank will produce normal text when an Italics Code **[I] [i]** is encountered.

Special Text Markings

Move Down/Up for Double Underline Character

You must enter codes to move the carriage down or up if your printer does not do its own double underlining. You may also need to shift in and out of an alternate character set to use the character code entered for the double underline character.

Strikeout Character Code

This is usually a 45-the dash. Enter zero if the **Strikeout Printing On/Off** strings cause the printer to perform its own strikeout.

Strikeout Printing On/Off

If your printer does automatic strikeout printing, enter the codes for it here and enter zero for the **Strikeout Character Code**. If you select a strikeout character, WordPerfect uses it to strikeout text on a second pass. Depending on the chosen character, you may need to enter codes here to move the print head up and down. You may also need to shift in and out of an alternate character set to use the character code you selected. Alternatively, you could select a colored ribbon or print in a different font.

Redline Character Code

Enter zero if your printer does its own redlining or if you want WordPerfect to print a vertical bar in the left margin. If you select a nonzero character, it is printed in the left margin or it is used to redline on a second pass, depending on the strings entered for **Redline On/Off**.

Redline On/Off

If these strings are left blank, WordPerfect prints the redline character in the left margin. Two options are available if you insert codes. First, you can set the **Redline Character Code** to zero. This forces WordPerfect to treat redlining the same as auto bold or underline-the strings are sent just before and after redlined text is printed. Second, you can select a nonzero Redline Character Code. In this case, WordPerfect redlines on a second pass similar to the strikeout function.

Footnote Line Character Code

This is usually 32-the space character. WordPerfect prints this character when footnote lines are created. The character is underlined when it is printed unless you answer "yes" to **Omit Underline While Printing Footnote Line?**

Omit Underline While Printing Footnote Line?

The answer is usually "no." You may want to answer "yes" if you

select a Footnote Line Character Code other than **32**.

Pitch/Miscellaneous

Set 10, 12, 15 Pitch

Leave these blank if your printer supports HMI or microspacing. If your printer does not support HMI or microspacing, it may have codes to select specific pitch settings—enter these here.

Forward/Reverse Printing On

If your printer does automatic bi-directional printing, leave these strings blank. Some printers are able to do bi-directional printing only if they are told when to print forward and when to print backward. Enter the proper codes here if your printer fits this description.

Auto Proportional Spacing On/Off

These strings are sent to the printer whenever you select a pitch followed by an asterisk (**10***) or whenever **<M>** or **<N>** is encountered in a **Shift In/Out of Font** string.

Shift Into Alternate/Back to Normal Character Set

These strings define the function of the special code **<A>**. Whenever **<A>** is encountered in a character table string, WordPerfect performs a **Shift Into Alternate Character Set**, prints the next character, and then performs a **Shift Back to Normal Character Set**.

Maximum/Minimum Width of Space Character

Right justification is almost always performed by expanding text on the line. On HMI and microspace printers this is done by adding small amounts of space between the words until the interword spacing equals the **Maximum Width of Space Character**. Any remaining space is then added between the letters of each word. If text on a line must be compressed (HMI printers only), small amounts of space are removed from between the words until the interword spacing equals the **Minimum Width of Space Character**. The letters in each word are then squeezed together to finish off right justification.

Changing Fonts

Shift Into Font

These strings are used to select your printer's fonts. Generally, you should place a <D> at the beginning of each of these strings- this helps realign the print head after a pitch change. Include <F> if the font change requires the change of a print wheel or font cartridge. You may also want to include <M> or <N> if a font must be printed with proportional spacing on or off. If your printer uses microspacing to right justify nonproportionally spaced text, you may need to use <Q> to inform WordPerfect of the width of the characters in this font.

Shift Out of Font

This can usually be left blank if you defined your **Shift Into Font** correctly. However, some printer features, such as expanded or compressed printing, may still need to be turned off in these strings.

Select Character Tables

Character Table for Font

Use this to select the character table which corresponds to the font you have selected. These character tables define character widths for proportional spacing. They also translate characters from the screen into characters or strings to be sent to the printer.

CHARACTER TABLES

Character tables perform two important functions. First, they contain character widths and relative positioning information for proportional spacing. Second, they translate characters from the screen into characters or strings to be sent to the printer. Each font defined in a printer definition must be associated with a character table.

Character tables may be used to create your own characters on many printers. For an example of this, refer to the explanation for **String Sent to Printer** under "Editing Character Tables." There are two kinds of character tables in WordPerfect:

1. **HMI with Adjust Factors**. These character tables are for use with HMI controlled printers. Each table contains character widths in units which are assumed to be the same as the **HMI Unit** entered in the printer definitions which use it. In addition, these tables contain adjust factors.

2. **Microspace**. These tables are for use with Microspace controlled printers. Each table contains only character widths, but the units are specified when the table is created and may be different from the **Microspace Unit** entered in the printer definitions which use it.

Character tables may be created, deleted, renamed, or edited by selecting option **4** from the main menu.

Creating a Character Table

To create a new character table, use the mouse to select **Create** on the Edit pull down menu. You will be asked for the name of the new table. Type up to 14 characters and press **Return**.

Next you will be asked for the number of the table to use as a pattern. A copy will be made of the character table you select, and this will become the starting point in defining the new one. Enter the number of a table which is similar to the one you intend to define. **Standard ASCII** is best to use if your printer has a fairly limited range of characters, or if its character set is very different from the characters which appear on your monitor. **Extended ASCII** is best in most other cases.

Finally, you need to decide if the table will be used by HMI or Microspacecontrolled printers. If you select the **HMI w/Adjust** option, the character table will be created assuming units of 1/120ths of an inch. If you select the **Microspace** option, you must enter the units (units may be as fine as 1/2047ths of an inch). If the table you select as a pattern is not the same type as the one you create, the character widths from the old table will be converted to the new units.

The table may now be edited:

1. Remove any characters which are not in your printer's character set. Select option **A (String Sent to Printer)**, press **CtrlEnd** to clear all the codes, and enter a **space**; then enter the width of a space character under **Character Width** and enter **0** for the **Adjust Factor** (if any).

2. Make sure that the code sent to the printer matches the code recognized by your printer for each printable character. If your printer will print characters which your monitor cannot display, try to assign them to display characters which look similar. This helps improve the readability of documents which use those characters.

3. If your printer has an alternate character set (see **Shift Into Alternate Character Set**), don't forget that you must use the **<A>** code to get at these characters.

The different categories of information which need to be entered are explained under "Editing a Character Table."

Deleting a Character Table

Select the **Delete** option from the Edit pull down menu. Carefully enter the number of the character table you wish to delete, or press **Cancel** to exit without deleting.

This option is useful for getting rid of old versions of a character table you create yourself.

Renaming a Character Table

Select the **Rename** option from the Edit pulldown menu. Enter the number of the character table you wish to rename, or press **Cancel** if you decide not to do any renaming. When you are asked for the

new table name, type up to 14 characters and press **Return**.

Editing a Character Table

To Edit a character table, click on the name in the list or enter the character table number. If the table is for use with Microspace printers, the widths of the characters will be displayed and the units will appear at the bottom of the screen. Tables for use with HMI printers will show character widths and adjust factors.

If the character you are looking for doesn't appear in the first screen of characters press the **PgDn** key or click on the **Next Screen** gadget to display another screen of characters.

String Sent to Printer

The code(s) entered here will be sent to the printer every time the indicated character is printed. This string should contain a space if the character is nonprintable. It may also be used to create characters which are not ordinarily supported in a printer's character set. For example, the **Ç** character could be created by printing a **C**, a backspace, and then a **comma**. The **ASCII Backspace** character table contains a large number of such "compound characters." WordPerfect assumes that characters created this way are exactly one column wide.

Character Width

Enter the width of each character here. These widths are only used when printing proportionally spaced text. For HMI character tables, the units in which widths are specified are assumed to be the same as the **HMI Unit** entered in the printer definitions which use the character table (usually 1/120ths of an inch). The units are fixed for Microspace character tables and are displayed at the bottom of the screen. Valid character widths range from 0 to 15 (for HMI tables) or from 0 to 255 (for Microspace tables).

Adjust Factor

This option appears only when editing HMI character tables. Adjust factors are used to position characters relative to each other when printing proportionally spaced text. The file PS.TST (on your Learn diskette) contains detailed instructions explaining how adjust factors may be determined if you are changing or creating a character table. Valid adjust factors range from -8 to +7. The units of adjust factors are the same as

those for the character widths.

SHEET FEEDER DEFINITIONS

Sheet feeder definitions allow WordPerfect to control automatic sheet feeders separately from printers. This is helpful since some sheet feeders may be attached to a number of different printers.

The PRINTDEF program allows you to create, delete, rename, and edit sheet feeder definitions by selecting option **5** from the main menu. Formerly, sheet feeder definitions were created inside WordPerfect, but no provision was made for editing or deleting them.

Creating a Sheet Feeder Definition

To create a new sheet feeder definition, use the mouse to select **Create** on the Edit pulldown menu. You will be asked for the name of the sheet feeder. Type up to 31 characters and press **Return**. Unlike printer definitions and character tables, sheet feeder definitions are never created from a pattern.

The questions are explained under "Editing a Sheet Feeder Definition."

Deleting a Sheet Feeder Definition

Select the **Delete** option from the Edit pulldown menu. Carefully enter the number of the definition you wish to delete, or press **Cancel** to exit without deleting.

Renaming a Sheet Feeder Definition

Select the **Rename** option from the Edit pulldown menu. Enter the number of the definition you wish to rename, or press **Cancel** if you decide not to do any renaming. When you are asked for the sheet feeder name, type up to 31 characters and press **Return**.

Editing Sheet Feeder Definitions

To edit a sheet feeder definition, click on the definition name in the list or enter the definition number.

The strings entered in a sheet feeder definition are only sent to the printer if you indicate that a sheet feeder is attached to your printer. This is done by using the **Select Printers** option in WordPerfect.

Eject Page

This string is sent to the printer at the end of every printed page before the next page is inserted.

Select Bin 1, 2, 3, 4, 5, 6, or 7 and Insert Page

One of these strings will be sent to the printer before each page is printed. The bin number selected is determined by the current Sheet Feeder Bin Number selected inside WordPerfect.

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