LaserWriter: Print layout can differ from screen layout

Drivers 3.0 or earlier try to create a resemblance to the screen's image of text. The driver then sends this resemblance to a LaserWriter or LaserWriter Plus.

To create this resemblance, a line layout routine in the driver formats each line extensively, padding the spaces between characters. The routine that does the formatting takes into account that the Macintosh's screen, 512x342 pixels, displays 72 pixels/inch and that the LaserWriter prints 300 dots/inch.

In the complex conversion from Macintosh screen pixels to LaserWriter printer dots, converting a 72 pixel inch to a 300 dot inch and accounting for angles, boldfacing, italicizing, and so on, the result is not always an exact resemblance. While the routine creates a printed line that resembles the screen line in length, the printed line can look different because of the routine's padding between characters.

This padding appears in lines printed with drivers 3.0 or later EXCEPT when fractional pixel widths, disabled by default, are turned on by an application. With fractional pixel widths enabled, the printer driver doesn't use its line layout routine and doesn't measure line length; printing can go as fast as possible.

In case an application enables fractional pixels and thus disables the line layout routine, the designers have made it possible to create a resemblance going the other way: the screen's image of text can be made to resemble the LaserWriter's image of text. This can happen even if text never goes to the LaserWriter.

To match LaserWriter text on the screen, the Macintosh uses FOND resources. FOND resources represent "families" of FONT resources and contain information about the width of each character in the font as if it were printed. To map the printer's ROM-based fonts to the Macintosh's screen fonts, the Font Manager and QuickDraw use these FOND's to calculate the width for the text to be displayed on the screen. To determine line breaks, the application can use these widths as well.

Fonts should be added or deleted from the System File with Font/DA Mover version 3.0 or later to insure that FOND's and Fonts are correctly updated.

For further information refer to "Inside Macintosh: The Font Manager" and/or "LaserWriter Reference Manual".
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