WordStar and LaserWriter: Character Set Problems

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A user has an IBM PC with LocalTalk PC Card and is running WordStar Professional 4.0. He wants to emulate an Epson printer using the LaserWriter program, without having to modify existing documents. His question concerns how the international character sets 1 and 2 produce diphthongs (for example, the ae character).

Diphthongs, like AE or OE, are part of the standard LaserWriter character set (see page 255 of the PostScript Language Reference Manual from Adobe Systems Incorporated, published by Addison-Wesley, ISBN 0-201-10174). The standard LaserWriter character set and the unencoded character set can be mapped to a single font (see pages 254 and 255 of the "PostScript Language Reference Manual"). The symbol set (pages 256 and 257) cannot be mapped together with the standard LaserWriter character set or the unencoded character set into a single font.

Here are three questions with answers concerning dipthongs and fonts:

1) Does the Courier font include diphthongs?

Diphthongs are part of the standard LaserWriter character set and are included in the Courier font. Using the standard character set, the diphthongs (AE, OE, ae, and oe) are ASCII codes 225, 234, 241, and 250, respectively.

These characters are mapped to new positions using extended international character sets 1 and 2. Selecting either international character set 1 or 2 from the LaserWriter print options for WordStar documents will allow access to the AE and ae diphthongs at ASCII locations 146 and 145, respectively. See page 91, "Printing from extended character sets" in Appendix A. The OE and oe characters are in the same locations and can be accessed with the same codes as in the standard character set.

2) If the answer to number 1 is no, from which character set do the diphthongs come if one is printing in Courier with international 1 extended characters?

As stated in the answer to question 1, diphthongs are available through the Courier font.

3) If the answer to number 2 is a proportionally spaced font, like Helvetica or Times, how does the use of diphthongs from proportionally-spaced fonts from another font fit with your reasoning that symbol font characters cannot be remapped in this manner, because they are from another font and are proportionally spaced?

Neither Helvetica nor Times fonts, containing standard or unencoded characters, can be mapped with Symbol set characters due to the limitation restated in the question. This is because the Adobe PostScript command, which is used to merge character sets into a single font definition, is limited to the Standard LaserWriter and unencoded character sets.

Symbol set characters cannot be used with proportionally spaced fonts even though both use proportionally spaced graphic images because there is only one set of commands used for merging character sets into a font.

The limitation is not in the use of the commands (as in the hypothetical case of mapping proportional characters with proportional symbols), but in Adobe's limiting implementation of their commands. This causes the remapping not to work with Symbol set characters and standard LaserWriter and unencoded character sets. This means that standard characters and unencoded characters are accessible within Helvetica and Times. Symbol set characters remain inaccessible from the same remapped font. Note: Character sets are not fonts. Fonts are the graphical images to which the character sets are mapped.

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