

Font design relies on optical illusions. All stems, straight, curved, and diagonal, are drawn to appear optically the same thickness. A broad-pen held at an approximate 15-degree angle, will produce crescent-shaped curves that appear lighter in mass than a straight stem of constant

thickness. To compensate, the curves must be widened so that they will appear to be the same thickness as the straight stems.

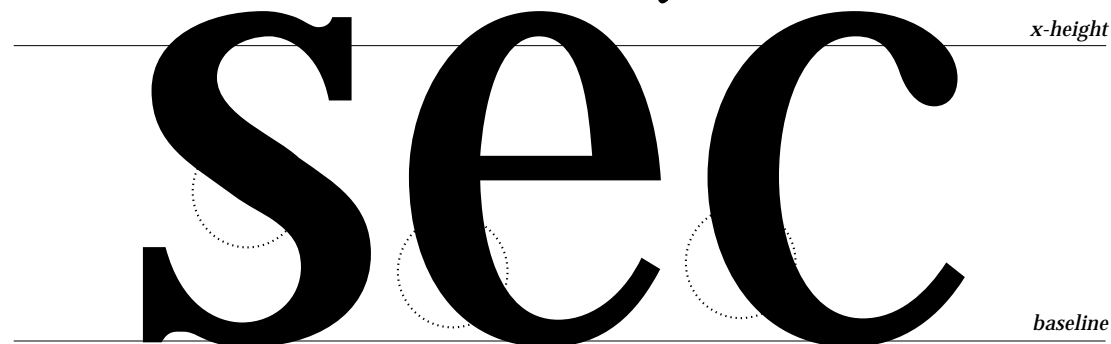
The vertical stems must be equal width, and all round or curved stems should appear to match them: **b, c, d, e, g, o, p, q, s, B, C, D, G, O, P, Q, R, S,**

**2, 3, 5, 6, 8, 9,** etc. There are no set rules to accomplish this. Mortimer Leach, in his classic book *Lettering for Advertising*, drew the curves one-third wider than the straight stems, but this relationship will vary depending on the width of the letters and the thickness of the thin strokes.



abdfhijklnpqrstu  
BDEFHIJKLM PRTUY

abcdegopqs  
BCDGO PQR S



*Sabon (250-point) —Jan Tschichold, Stempel, 1964–67*

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz  
1234567890

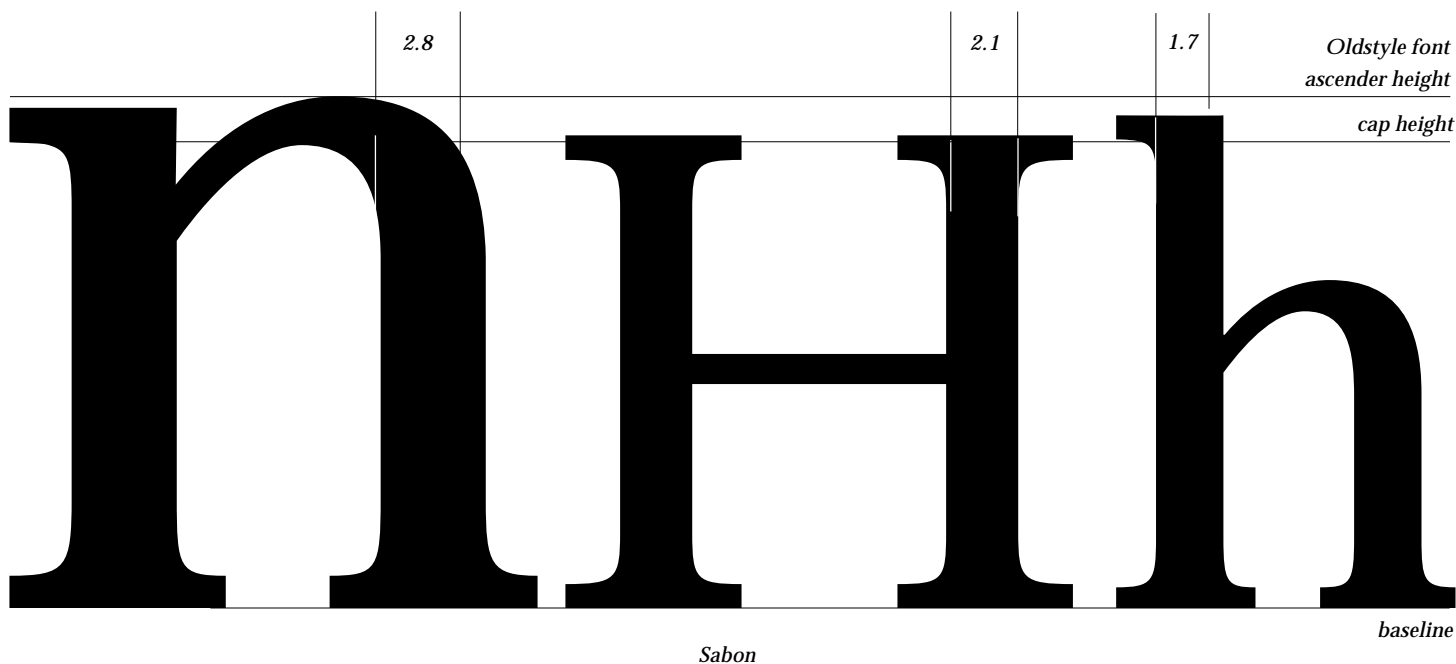
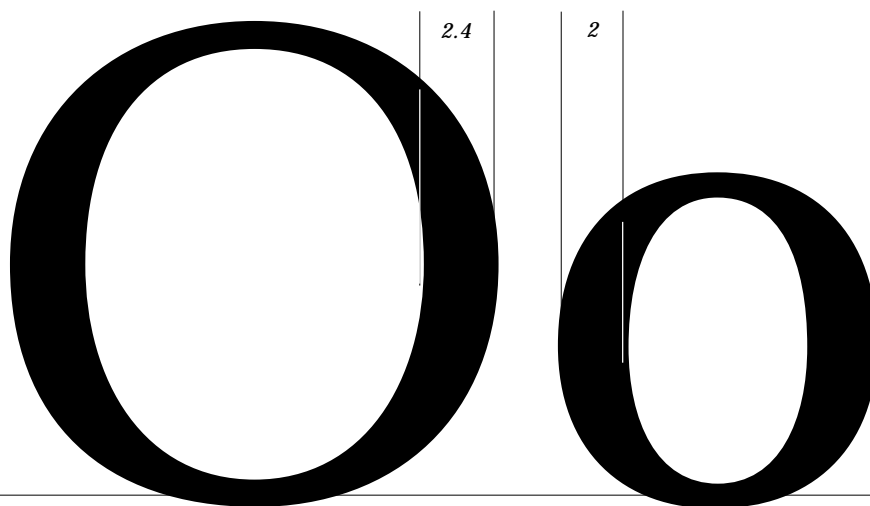
*Melior —Hermann Zapf, Stempel, 1948–49*

■ All straight, vertical, lowercase stems should be of equal width, and curved stems should be bolder to optically match the straight stem weight. Melior's curved stem weight is distributed more equally and requires less weight adjustment than traditional romans.

Melior, a squarish serif font designed for newspaper text by Hermann Zapf, requires less compensation because the stem is a flattened curve and holds its weight almost to the full height of the letter. Capital letters are bolder than lowercase because each capital contains more nega-

tive space, which optically erodes the stem's thickness. If constructed with the lowercase stem thickness, the caps will appear to be lighter. The slightly heavier capital weight is useful to indicate a sentence beginning. Its added weight helps distinguish a capital **I** from a lowercase **l**. The cap-

to-lowercase weight ratio and the relationship of curved weight to straight stem weight are optically determined. The stem ratios vary from font to font.



■  
*Capitals are not enlarged lowercase. The stem weight would be too bold. The lowercase **n** above, drawn to cap height, appears much heavier than the capital **H**. Capital letters are only slightly heavier than the lowercase so as to*

*color equally and to give a slight emphasis to a sentence beginning. There should be a balance of color or mass when a word of caps is set with the lowercase.*