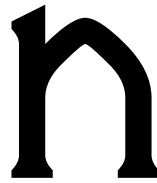


Chapter 8

The next stage in the production of this font is now to use FFAE0008.TTF "Font for an exhibition 0008" as the working font.

A design for a small a is now produced based upon copies of the designs for a small e and a small n.

A copy of the design for a small e is flipped vertically then horizontally in order to produce the starting design for a small a.



A vertical and two serifs from a copy of the design for a small n are added to the design for a small a.

The design for the a is started using a copy of the design for e which is flipped vertically then horizontally. A vertical with two serifs is then added from a copy of the design for n.

A technique which I sometimes find useful when fontmaking is to map the design of a character to the code point in the character map before the design is complete. This means that the appearance of the design at various point sizes can be viewed using the ordinary PC font viewer and, if the design does not display well at small sizes, adjustments made. This technique is particularly useful for 12 point and 18 point where a complete lowercase alphabet is displayed.

The design is mapped to character 97. The point at 128, 680, is made off curve. This means that there are two off curve points in sequence, namely at 88, 596 and 128, 680. When this occurs, a rendering system interprets that as there being an on curve point half way between them. However, I add an on curve point half way between them at 108, 638. This does not alter the shape of the curve, but I do like to add in the on curve point for completeness.

A small letter s is produced, also based on a copy of the design for a small letter e. The copy of the design for an e is flipped vertically: the orientation of the contours then being corrected as their clockwise, counterclockwise status was flipped by the vertical flip operation. The design is mapped to character 115.

From the point at 256, 168 a new point is inserted and it is moved onto the point at 356, 302 and merging is accepted. The off curve points at 256, 402 and 88, 336 are deleted. An attempt is made to make the point at 88, 512 become an off curve point, yet it is the first point of the contour, so that is not possible directly. A new point is inserted from 88, 512, the point at 88, 512 is moved to 102, 402 as a temporary parking place, and the new point is moved to 88, 512 and made off curve. The point at 256, 512 is now deleted and the point at 102, 402 is moved to 256, 512.

A small letter j is produced from copies of a small letter i, from which it gets its body width, and from the descender of a copy of a letter p. The design is mapped as character 106.

A small letter k presents something of a challenge.

The designing starts with a copy of the design for a letter b. The design is mapped as character 108.

A new point is inserted from the point at 936, 512 and moved onto the point at 768, 512 and merging is accepted. Thus the design is now all one contour.

A first attempt is made by deleting all of the points on the contour from after 256, 512 and before 256, 144. A total of thirteen points are deleted.

Then, by just the look of the design, three new points are inserted after 256, 512 so as to produce a design which seems to look right, particularly as to the width of the line which is produced in the display of the Softy font editor. A point at 768, 0 is used to start the process. The points are, in order after 256, 512, at 868, 132 and 768, 0 and 256, 324.

This design looks quite good in the font viewer, yet I feel that I would like to do some calculations to establish whether it could be improved.

Suppose that the design is regarded as starting at 256, 512, being point A, proceeding to p, q, being point B, then proceeding to 768, 0, being point C, and then proceeding to 256, r, being point D. This means that the points at present in use have p, q and r as being at 868, 132 and 324.

The angle between the lines BC and CD should ideally be a right angle, that is 90 degrees. I shall calculate what it is at present. The angle made by CD with the x axis is $\arctan(r/512)$ which at present has a value of $\arctan(324/512)$, which is 32.3261399943768682502815347827702 degrees. The angle made by BC with the x axis is $\arctan(q/(p - 768))$, which at present has a value of $\arctan(132/(868 - 768))$, which is 52.8533133019782188742333654175654 degrees. Those two angles subtracted from 180 degrees gives the angle between the lines BC and CD as 94.82054670364491287548509979967 degrees.

The length of the line BC is given by the square root of $((868 - 768)^2 + 132^2)$, which is 165.601932355875606189644432768916 font units.

It has been calculated earlier in these notes that the line CD makes an angle of 32.3261399943768682502815347827702 degrees with the x axis. A comparison with the angle made by the line AB with the x axis may be interesting to know. It is calculated from the expression $\arctan((512 - q)/(p - 256))$ which at present is given by $\arctan((512 - 132)/(868 - 256))$, which is $\arctan(380/612)$, which gives an angle of 31.8367675103005097506486658790713 degrees.

It is possible that the values of p, q and r could be adjusted to make the angle between the lines BC and CD nearer to a right angle and to make the angles that AB and CD make with the x axis equal, yet for the present no such changes will be made. The font can be tried in practical use and a decision made later, for it might be that a design produced by look may be more suitable visually

than one produced to be geometrically regular. Also the whole design of the letter k may need to be changed if it is unsuitable in test use.

The four characters produced in this chapter all have design difficulties and the designs may need to be altered later. However, I feel that I will try to produce a complete alphabet at present and review all of the designs when the font can be tried in practical use.

Here are the characters added in this chapter.

The image shows four black characters arranged horizontally: 'a', 's', 'l', and 'k'. The 'a' is a stylized, rounded character with a small loop at the top. The 's' is a simple, rounded character. The 'l' is a tall, thin character with a small hook at the bottom. The 'k' is a tall character with a large, rounded loop at the top and a small hook at the bottom.

Here are the characters added in this chapter in colour.

The image shows four yellow-green characters arranged horizontally: 'a', 's', 'l', and 'k'. The characters are identical in shape to the black ones in the previous image, but colored in a yellow-green hue.

Here are the characters added in this chapter in another colour.

The image shows four pink characters arranged horizontally: 'a', 's', 'l', and 'k'. The characters are identical in shape to the black ones in the previous images, but colored in a pink hue.

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