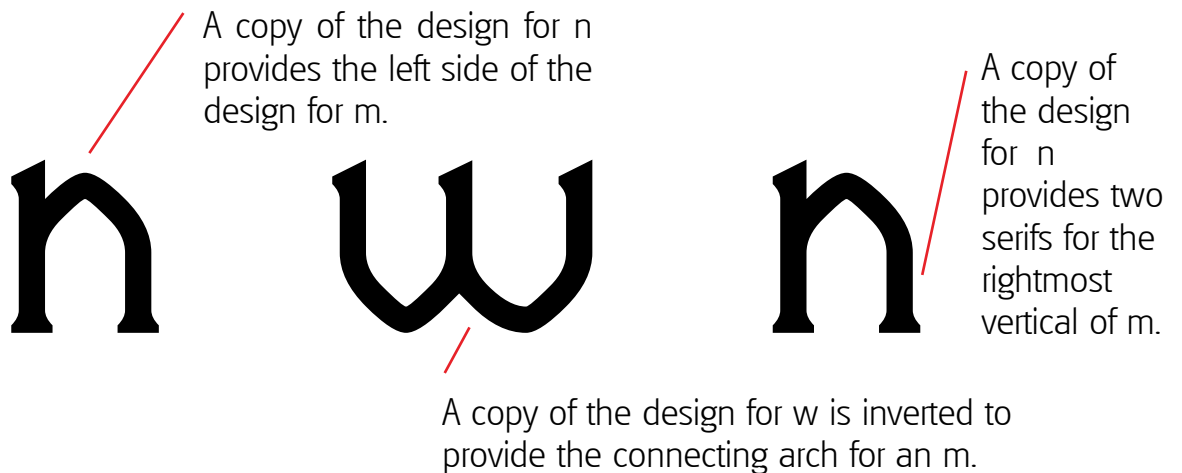# Chapter 7

The next stage in the production of this font is now to use FFAE0007.TTF "Font for an exhibition 0007" as the working font.

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

A copy of the design for n provides the left side of the design for m.

A copy of the design for n provides two serifs for the rightmost vertical of m.

A copy of the design for w is inverted to provide the connecting arch for an m.

The design is set to have a body width of 1792 font units. The finished design is mapped to character 109.

An interesting point is that when inverting the copy of the design for w, the three vertical points with a y coordinate above 1024 each had that y coordinate reduced to 1024 before the inversion took place. While doing this it was noted that two of the points had a y coordinate of 1108 and one, the point in the centre, had a y coordinate of 1104. As they were all intended to be the same, a check back was made for where the error had arisen. The point on the central vertical of the design for w is altered so as to become located at 936, 1108. Surrounding points were not affected by this error.

A design for a small letter t is produced from copies of the designs for o and l with a horizontal bar added. The finished design is mapped to character 116.

The design for a letter x is interesting. It is made from two copies of the letter o. Each copy has some points deleted and the two contours of that copy are then joined, thereby producing two designs each having half of a letter o all in one contour. Shifting then takes place on the two designs so as to counterchange the positions. Prior to shifting, one contour is between 88 and 512 font units horizontally and the other is between 512 and 936 font units horizontally. After shifting the two contours are between 512 and 936 font units horizontally and between 88 and 512 font units horizontally. The one contour is then pasted onto the other and the two contours joined.

The joining process is interesting because I want the letter x to be in one contiguous piece so that it could be manufactured as a piece of plastic to place on a wall if desired, so I am intending to have the join from 512, 512 - p to 512, 512 + p where p is a value large enough to make a substantial joining width in the middle of the letter yet p is small enough so as not to distort the overall shape of the letter within the font. If 512 + p were to have a value of 688, being 856 - (512 - 344), based on the previous on curve point being at 344, 856, the join between the two parts of

the x would be at a right angle one to the other. That would mean that p would have a value of 176 font units. In the event I choose p to have a value of 110 font units so that there is a curving. This value of p is chosen so that the two points are at 512, 622 and 512, 402, that is, each with the same y coordinate as off curve points to each side. The finished design is mapped to character 120.

The letter e is interesting. Firstly I make a copy of the design of the small letter o. I now construct a horizontal bar using a new contour and the following four points.

0, 512 on the curve.

1024, 512 on the curve.

1024, 344 on the curve, being 1024, 512 - 168.

0, 344 on the curve.

The basic shape of the letter e is displayed, though it is in two overlapping contours and some adjustments are necessary. In the above, 512 is chosen because it is on the 256 font unit grid, so will help in displaying the font at smaller sizes such as 12 point and 18 point.

A third contour is now added, a three point contour such that the second point is on top of the rightmost intersection of the copy of the o with the lower edge of the horizontal bar. That point is at 896, 344.

Another three point contour is now added, and the points then moved so that they are, clockwise, at the following positions.

936, 512, with the offer of merging contours declined.

1024, 428, though that is just a parking position and the point is to be moved later.

896, 344, with the offer of merging contours declined.

The first three point contour is now deleted.

The point at 1024, 428 is now made to be an off curve point and moved towards the curve to its left so that, as far as possible, the two curves overlap. 936, 428 is a good fit. The horizontal bar contour and the three point contour are now removed, as the information of using an off contour point at 936, 428 and an on contour point of 896, 344 has been obtained. Thus the display in the Softy font editor program shows just a copy of the design for a letter o.

The next stage is to move the off curve point at 936, 336 to 936, 428. Then, from that point, a new on curve point is added and then moved to 896, 344. From that point a new on curve point is inserted and located at 344, 344, as a temporary location.

Another on curve point is now inserted and moved to 668, 302, where the offer of merging contours is accepted. The point at 668, 302 is now moved to 344, 512 as a temporary position.

The off curve point at 768, 402 is deleted.

This gives a basic shape of a small letter e, though there is still some construction necessary in order to produce the final result.

A stage to be completed is to move the point now at 344, 512 onto the point at 256, 512 and to accept the splitting of the contour, thereby producing the inner space of the letter e: however before that is done, arrangements need to be made to preserve the shape of that part of the curve between 256, 512 and 356, 302 which needs to be retained after the split. Firstly the point now at 344, 344 is moved to 160, 344: the value of 160 is chosen as being within the solid shape of the letter, it is just a temporary position, though the 344 needs to be exact. A three point contour is constructed with the second point at the intersection of the line from 160, 344 to 896, 344 with the curve of the letter as it stands at present. That point is at 319, 344. A four point contour is now constructed, with the points moved to 319, 344 with merging declined, 300, 300 off curve, being a temporary parking location, 356, 302 with merging declined and 400, 330, a parking location. The reason why this is a four point construction rather than the three point construction used at the other side of the letter e is that the curve to be approximated is almost a straight line, so the fourth point is used so that there is not a triple near-overlapping of lines. The point at 300, 300 is now moved so that the two curves overlap as much as possible. I choose 338, 320 as the best point. The curve is almost a straight line: it goes from 319, 344 to 356, 302, a gradient of 42 down in 37 along. So at 338, which is 19 along, the value of y on a straight line would be 344 - (19 x 42/37) which is 322.43, so just a little from the off curve point of 338, 320, so there is just a small difference from a straight line.

The point at 344, 512 is now moved onto the point at 256, 512 and splitting is accepted. The point at 160, 344 is moved to be at 319, 344. The on curve point next to it, the result of the splitting, is deleted. The off curve point at 256, 402 is moved to 338, 320.

From the off curve point 534, 168 a new on curve point is inserted. It is moved to 668, 302, which is one of the points on the copy of the design for an o, which point was lost earlier in the process. This point does seem rather too close to the horizontal bar, yet is left there at present so that the design can be considered.

The completed design for e is mapped to character 101.

The characters added in this chapter are shown on the next page in both black and colour.

Here are the characters added in this chapter.

m t x e

Here are the characters added in this chapter in colour.

m t x e

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

m t x e