Forging a Butterfly

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Ken Dettmer and I forged a butterfly at an impromptu demonstration that took place during an IBA meeting at his forge. We made this up by the seat of our pants, with help from the audience. The finished butterfly can be seen in figure 1. I brazed it to a shepherd's hook.

Figure 1: Finished butterfly on shepherd's hook.

We started out with 1/4" flat stock, 2 ½" wide by about 3" long. The first order of business was to fuller ¼" notches into the sides of the stock about 1 ¾" from one side. The notches formed by this operation are about ¾" deep and will separate the front and back wings.

Next, we used a hot cut to remove the four corners. Figure 2 contains a diagram of these steps.

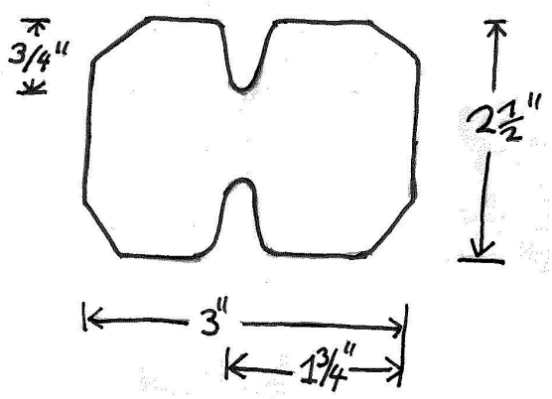

Figure 2: Preparing the blank

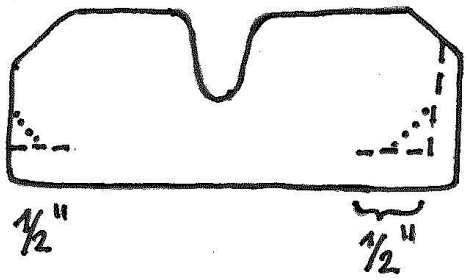

Figure 3: Cutting the materials for the tail and antennae

We then folded the stock along the center line and hot cut along the bottom of the smaller section, about 5/16" from the bottom of the fold and about ½" long. This cut defines the rear wings and leaves material for the tail. Next, we cut materials for the antennae from the front of

the stock. In order to get sufficient materials for some fairly long antennae, the audience suggested that we first cut perpendicular to the center line. We did so and then straightened the cut material. After that, a second cut was made, this one along the centerline, about ½” long and again, about 5/16” from the bottom of the fold. In the diagram of figure 3, the cuts described here are shown by a dashed line. The result of these cuts can be seen in figure 4.

Figure 4: Cuts for antennae and tail

Figure 5: Wings and tail shaped

Next, we removed the corners produced by the cuts: one in the back of the smaller section and the other near the front of the larger section. These two cuts are indicated by the dotted lines in figure 3.

We then heated up the entire piece and put the fold in a vise, about a 5/16” deep. We opened up the wings, at first with a chisel and then by hammering them so that they were horizontal. While the wings were not yet formed, we worked the tail over a wedge shaped hardy tool, rounding it and drawing it to a blunt point.

We were now ready to shape the wings. Using the rounded pien of a farrier’s hammer, we moved the metal so as to equalize the corners left by the cutting and fullering operations. Figure 5 shows the butterfly after these operations. Notice the nicely shaped body.

We were now ready to finish the antennae. We began by lengthening the existing cut so that it ended at about the beginning of the front wings. We then drew out the material on the wedge shaped hardy tool and rounded it over. The result of this operation can be seen in figure 6.

Back at my own shop, I removed some of the irregularities on the wings and the antennae. I also shaped the body and wings so as to give the butterfly a more natural appearance.

Figure 6: The butterfly after forging