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# The Lead Line Effect: Shape without the came

Robert Oddy

In a previous article, I have mentioned my view that stained glass work is akin to impressionism. We use the features of the glass to suggest detail in our subject matter. However, I often find that for some details, this approach is not adequate. For an example, see the scales in Koi, figure 1. It is also not always practical to implement this fine detail by joining large numbers of very small pieces of glass. In this article, I will talk about methods that produce effects compatible with the 'lead' lines of traditional stained glass, namely the use of copper foil overlays and wire.



Figure 1: Koi (2006) detail.

## Overlays with Foil



Figure 2: First draw the design on the copper foil.

A copper foil overlay is a thin layer of copper, shaped as required and stuck to the surface of the glass. There are several ways of using this technique.

Here are the basics: you can use regular copper foil in tape form for relatively straight lines, and sheet foil (which usually comes in 12" square pieces) for more complex shapes. The foil is applied to each separate piece of glass, before they

are assembled in the panel, and the overlay is cut to shape after it is stuck down. It is important to ensure that the foil adheres well to the glass surface, so clean and dry the glass thoroughly, and rub the foil down well. When you design the overlay, try to ensure that it will meet the edge of the glass piece in at least one place. This helps to secure the overlay to the glass surface. After applying the foil, wrap the edges of the glass with copper foil, in the usual way, trapping the overlay wherever it meets the edge. Draw the shape of the overlay on the foil, and cut away surplus copper foil with a craft knife or razor blade (see figures 2 and 3).

When you solder the piece to it's neighbors, tin and bead the overlay.

## Interesting Contours

With one variation of the technique, you can enhance the appearance of a lead line by giving it an interesting contour. For example, the join could look like a craggy branch or twig (figure 4), or a rose stem might have thorns (figure 5). Use an extra wide

Fine features implemented by overlays.



Figure 3: Cut away surplus copper foil with a craft knife or razor blade.



foil (e.g. 1/4" – 1/2") to wrap the edge. Lay the foil asymmetrically along the edge, so that there is more on the front side of the glass than on the back. When it has been rubbed

Figure 4: Wide foil with an interesting contour can be used to make a craggy branch. When it has been rubbed down, you can carve the required shapes in the foil on the front.

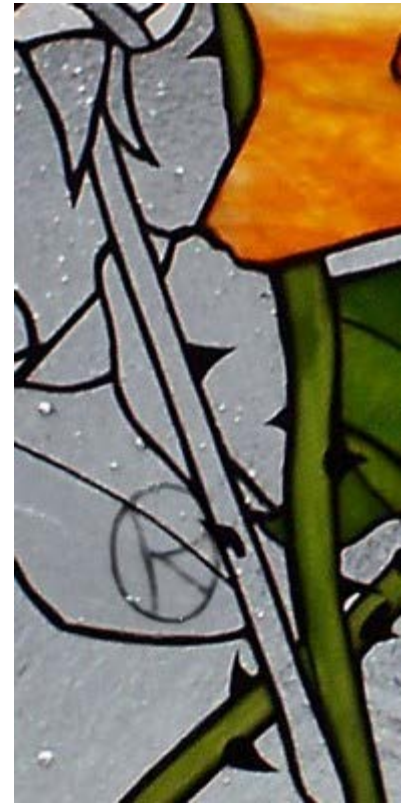


Figure 5: Use copper foil overlay to create rose thorns as in Hybrid Tea Rose (2007).



If you want the detail to be less distinct, put the overlay on the reverse side of opalescent glass, or on a second layer. If the copper color of the sticky side of the foil can be seen through the glass, use black-backed foil instead. You can even produce a shading effect by putting an overlay on the reverse side, as I did along the stems of the Amaryllis in figure 6.

Figure 6: You can even produce a shading effect by putting an overlay on the reverse side as in Amaryllis.

of the large branches are made craggy by enhancing the joins with extra wide foil, small twigs are made with copper foil overlays, and some of the less distinct twigs are overlays on the reverse side of the glass. Another example is the Tiger in figure 8. Some of the stripes are overlays, and some are enhanced joins. If a narrow overlay is more than about 3/4" long, it may be liable to peeling off (even after it is tinned). It can be reinforced with a length of brass wire (see figure 9).

In the Oak Tree panel (figure 7), you can see examples of these techniques. The contours



Figure 7: Small overlays make up Oak Tree (2008).

## Wire

Speaking of wire, it is a useful material in its own right. For example, in Amaryllis (figure 10)



Figure 8: In Tiger (1998) some of the stripes are overlays, and some are enhanced joins.

I used it for the filaments (parts of the stamen). The anthers are copper foil. They are initially stuck to the glass, but I rely on the wire filaments to hold them in place. In Barque (figure 11), the rigging is fine copper wire. I made the rope ladders before attaching them to the panel.



Figure 9: Reinforcing an overlay with brass wire.

As with any technique, we sometimes encounter problems! The foil may lift off the glass, or the glass may crack due to the heat of the iron when you tin and bead the overlay. The foil may lift while you are tinning it, because the heat softens the adhesive.

Hold the foil down with a small piece of wood, such as a tooth pick, while you solder, and press it down again when the overlay is cool – it should re-stick. If it is still loose when the panel is finished, apply a little glue. Glass can crack if it is heated unevenly. This happens most frequently if you are working on an overlay, with the soldering iron, in the middle of the piece of glass.



Figure 10: Stamen made with wire and copper foil, from Amaryllis.



Figure 11: In Barque (2008) the rigging is fine copper wire.

If you are working on small overlays, such as the twigs in Oak Tree (figure 7), it is usually sufficient merely to make sure that the iron does not dwell in one spot – keep it moving, do the job quickly. For larger overlays, make and solder the overlay on a piece of scrap glass, which may crack without serious loss, and then attach it to the panel.

I hope I have given you some idea of the potential of overlays and wire to add interesting detail to your own designs.