STAINED GLASS PANEL LAMPS - Construction

by Dale Grundon - Mount Gretna PA

Over the years I have produced many panel lamps in a variety of sizes, but my principle specialty has centered on Prairie style lamps on oak bases that I also produce in my wood shop. Quite often I get inquiries about various aspects of doing panel lamps. This paper describes most of the techniques that I use and are common to any panel lamp construction.

Before continuing I want to point out what I have discovered in communicating with other glass artist. In most cases when working with stained glass for lamps, panels or even sun catchers; there are many ways to perform the process. What works well for one individual may not be the easiest or most productive method for another. This describes the way I handle the different aspects, but not necessarily the first methods I used and probably not the methods I will be using the day I stop glass work. Experimenting with different techniques is fun and has made the business more interesting with each project.

PREPARATION

Like any project you have to first decide what the end should be. With a panel lamp you need to decide……..

Pattern - there are virtually 100's of pattern books for panel lamps or you can design your own

Number of sides - it has to be three to start but can go upward from that to a large number of thin strips of glass

Method for mounting - will it be on a base or hanging. Do you want to use a spider, lamp cap or bar. If it will be on a base I suggest that you wait until the shade is finished and then go to a lamp show with the shade to make this selection. As for size there is a basic method you can use for a table lamp. Measure from the bottom to the beginning of the harp. That length is one and a half longer than the height of the shade. However, that formula is not cut into stone and there may be times that you do not follow it. Using your judgment of proportion is the best alternate.

If it is a hanging lamp the biggest concern is that the method can securely handle the weight of the shade. A cap, spider, or bar work well when properly fitted and soldered. Chain is the most frequent method since it can be strong and the electric cord can be interwoven for a good appearance.

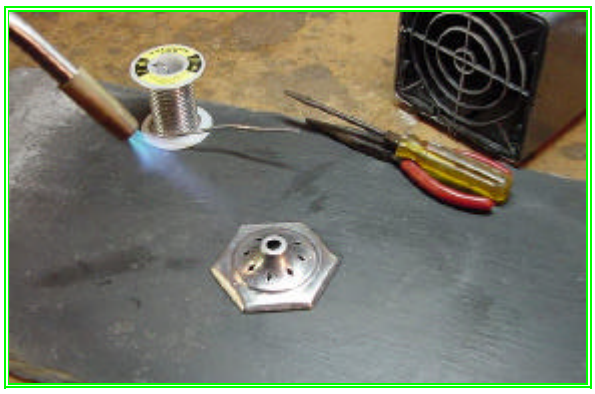
Select the glass - this can be the one of the longest parts of the process since we have so many types, colors and textures to choose from today. For most applications with lamps I prefer to use an opalescent glass as I don't like seeing the light bulb directly. Where I have used transparent it is usually a very small area with placement to avoid the viewer to have a direct line to the bulb.

HERE WE GO!

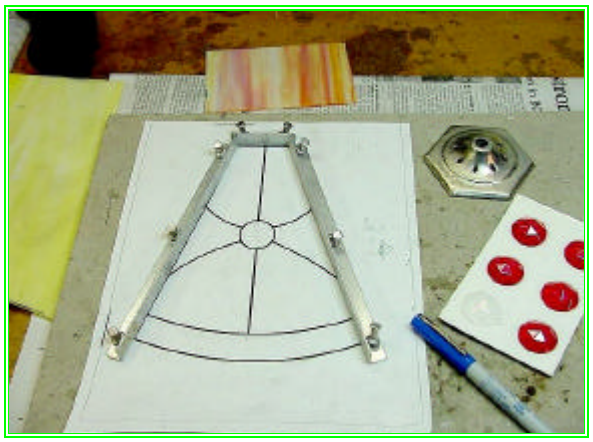
A good first step is to tin the lamp cap if that is the method for mounting or hanging. Starting with this means there are not a lot of glass items on the bench yet and it is ready when you begin to combine the panels. Initially use paint thinner to remove some of the top coating of varnish. That is followed by a good cleaning with 0000 steel wool. I work on a piece of slate, but you could use a brick, flat stone or cinder block. I tried working on a fireproof Homosote sheet, but found that it is easy to get flakes of the material in with the solder.

Apply a liberal amount of flux (I use liquid) and using a very hot iron begin to apply solder with the flat side of the tip. Keep moving over the cap to completely cover the cap with solder. Be sure to catch the outer edges all of the way around.

The screw driver is kept handy in case the cap wants to move around and you can place it on the top of the cap to keep it in place. If there is need to lift the cap, the needle nose pliers are handy too.



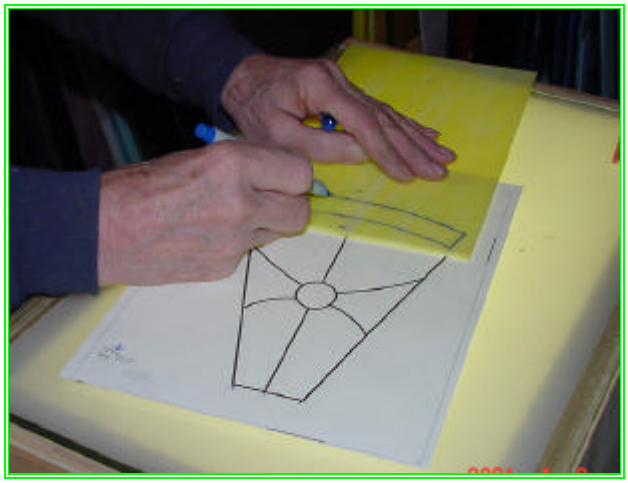
I use a propane torch to complete the process. This helps to smooth out the solder. Keep the flame back from the cap and keep it moving so that you do not over heat the metal.
Remember that the cap will be hot so let it cool down before moving it. The solder needs to set up also since moving the cap may cause it to shift and create blips in some areas.
After it is cool clean it with flux remover.



I work from two copies of the pattern. One is used for the layout of the project. I border it with either aluminum bars or wood strips. This keeps each of the panels the same size which is essential for the final assembly.

Push pins hold the bars and the pattern into position. They can be mounted on Homosote board or on a similar size of plywood.

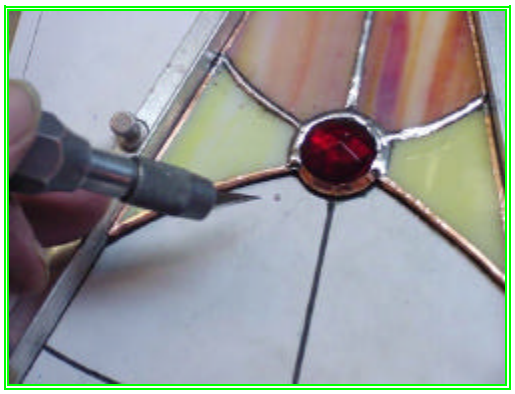
Once this is ready it is time to start cutting the pieces from the glass you have selected.



I use a light box to trace the pattern pieces onto the glass and cut from that. You may prefer to cut the pattern into each individual piece and trace the outline onto the glass. If you are really brave, you can cartoon cut from the pattern, but I find that with glass being both a slick surface and not always totally flat it has a tendency to want to move about with the slightest touch. Cutting with lines on the glass is much more accurate for me. Additionally, if you make one cut without having lines it is difficult to line up the glass for the next cut. This is entirely an effort to have little grinding to do perform. Grinding is then simply a touch up situation.

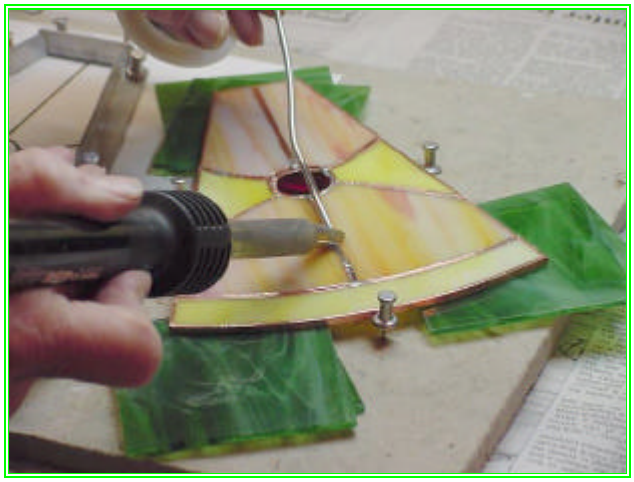
At this point I have to assume that you are already skilled at cutting, foiling and soldering. So lets step into producing the lamp…….

As I cut pieces I touch up each piece by grinding when necessary, then foil each one to insure a good fit. In this case I would start at the top and work my way to the bottom of the section.
I flat solder as I go so that I things stay in their proper position. You can bead solder when you are satisfied with positioning. Incidentally, when I soldered in the precious jewel, I placed it on a penny to even the edge with the pieces around it.
If you use a Lamp Bit to grind angles on the outside edge of each panel, be sure to not create an uneven edge but maintain that straight line. Additionally do your best to have the foil overlap on the inside the same amount as the outside edge.

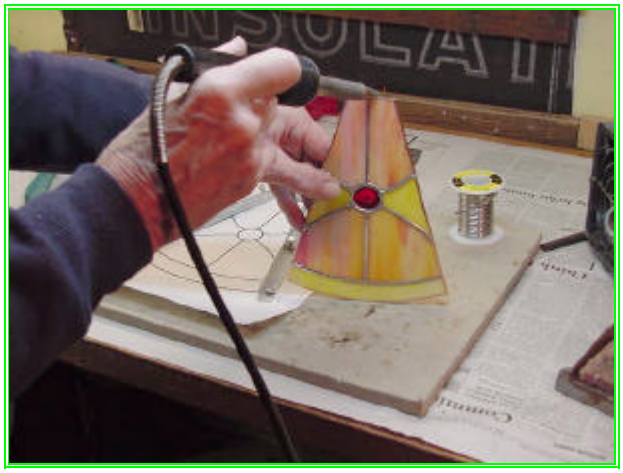


When fitting the pieces try not to have too tight a fit. Some slight variation along the edge is not an extreme problem. In either of these tow cases the spacing allows the solder to flow in between the glass pieces. When the opposite side is soldered that flow through forms the solder so that it is similar to the shape of lead “H” came and insures strength to the project.

While working, keep you eye on the work area for small solder splatters balls. If not cleared from the surface these can cause glass pieces to be added at with edges at an uneven height.



Next add the solder beads to the back side. If things look strange with the tacks and green glass under the panel; that was necessary to have the piece level. The jewel protrudes on the front side so that the piece will not lay flat without support. The pins provide restraint to keep the piece in place.



I never put solder on the outer edges of the piece since any globs of solder there could interfere with a good even fit during the final assembly of the complete set of panels.
I do however, flat coat the top of the panel. If the fit into the cap is good only slivers of this edge will be visible. At that point it is difficult to cover them with solder.
The solder there will also be an aid when soldering the inside of the cap to the panels.

After each panel is completed, I use flux remover right away. This avoids having flux on the piece while the remaining pieces are being constructed.

After the flux remover, I spray with *Simple Green* to clean any residue of the flux remover. It is essential to have the outside surface clean later when tape is applied to the panels during final assembly.

When all panels are constructed you can move on to the Assembly process.

PAPERS ON THIS SUBJECT ARE:
Part One --- PANEL LAMPS – Construction
Part Two --- PANEL LAMPS – Assembly
Part Three - PANEL LAMPS – Hanging Type