MIKE ASHEY PRODUCTIONS
PRESENTS
BUILDING A SHIP DISPLAY CASE
BY
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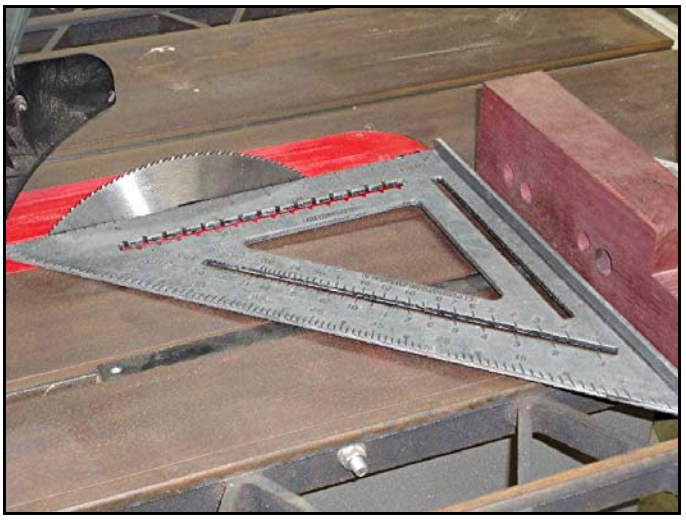
One of the biggest challenges for scale modelers is how to protect our finished masterpieces from damage and dust accumulation. Most aircraft, armor and vehicles can be easily displayed in large curio cabinets, but large scale ship models will not fit in most curio cabinets. The only alternative is to purchase or build individual display cases. I like to make my own wood display bases and they are always larger than the model. This allows me to use the wood base as the bottom of my Plexiglas display case.

I use standard Plexiglas which I purchase from a local supply store. The Plexiglas comes in 4 foot by 8 foot sheets which makes it easy to order in precut lengths. I usually use 1/8 inch for the sides and 1/4 inch for the top and the widths. This combination is slightly less expensive than using the thicker Plexiglas for the entire project. This works well for most 1/350 scale WWII models. For larger scales models or for modern aircraft carriers I use the thicker Plexiglas for added strength. I have the lengths rough cut and I add extra to both the length and width of each section as a safety factor. For all my gluing I use Tenax-7R liquid glue applied with a small flat brush. This glue dries clear and it has great capillary action.

I do all my cutting on my Sears Craftsman belt drive table saw. It's a top quality 10 inch blade table saw. The circular saw blade that I use is specifically designed for cutting Plexiglas. I also use a wax stick and wax the blade every other cut to keep it lubricated. I also sand and polish the cut edges by hand, which is labor intensive, but I like the results.

To make display cases you need to be working with a good quality table saw. Mine is a Sears Craftsman 10 inch belt drive saw.



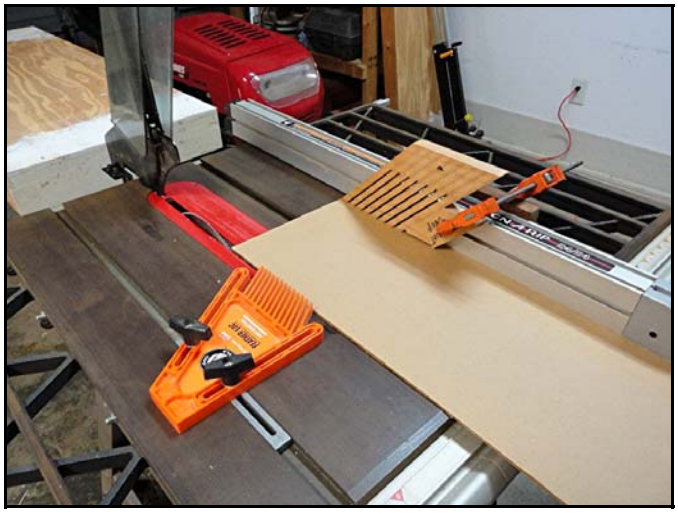
Check the blade to be sure that it is horizontal and at a right angle to the crosscut guide. The crosscut guide has a wood extension on it so that the material to be cut has a longer face to rest against.

I completed the display base first because I build the display case around it. I also keep notes on my measurements and remember the carpenters creed — "measure twice and cut once"!

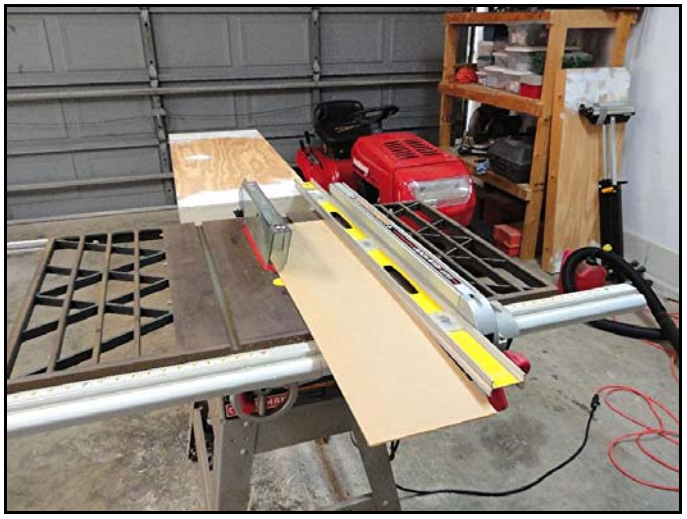
I buy long lengths of Plexiglas with a width a few inches wider than I need so that I have extra material to work with just in case! The secret to cutting Plexiglas is to wax the blade every few cuts.

Its easier to work in smaller sections than trying to cut precise sizes with a long section. I cut approximate lengths and then measure and cut the exact sizes I need. I also use an additional surface to keep the material flat as I cut.

I have found that pulling Plexiglas through the blade works better than pushing it. Always use the blade guard and wear safety glasses or a safety shield. Yep — it was hot in the garage.



When using a rip fence to achieve the correct width I sometimes use feather boards to help guide the material and keep in straight.



Thinner sections of Plexiglas can sometimes slip under the rip fence so I use my long level to ensure that this does not happen.

Always check your cuts to be sure that they are square. Waxing the blade also prevents the Plexiglas from melting which can ruin a cut.

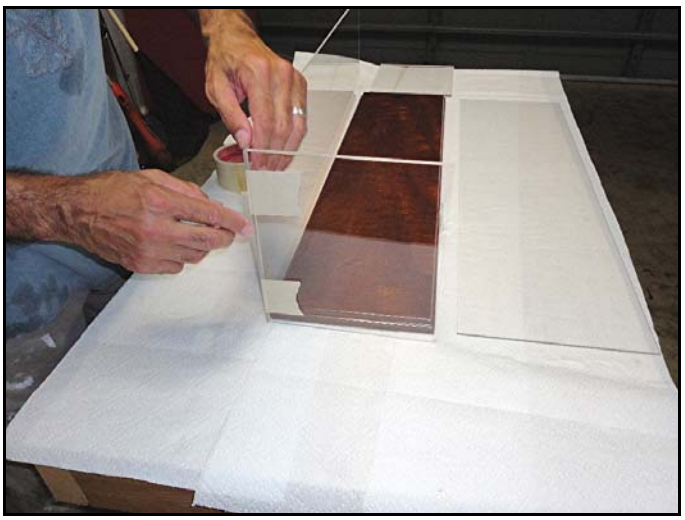
To polish the edges I start with 150 grit sandpaper and then smooth it out with 200 grit. I try to keep the sandpaper block flat against the edge , but I am not always successful.

After sanding I polish the edges with 0000 steel wool pads. The steel wool pads polish the edges to an almost transparent surface.

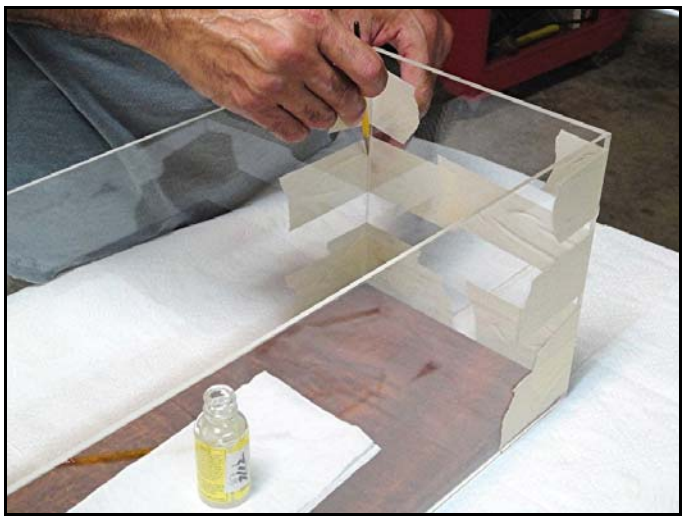
I build the case around the display base. The lengths are cut slightly longer so that the edges of the widths sit against them. I cut the 1st length, then a width then the 2nd length and then the last width.

I also cut the lengths approximately 1/16 inch longer so that there is a slight space between the display base and the case. If the fit is to tight it will be hard to remove the case from the display base.

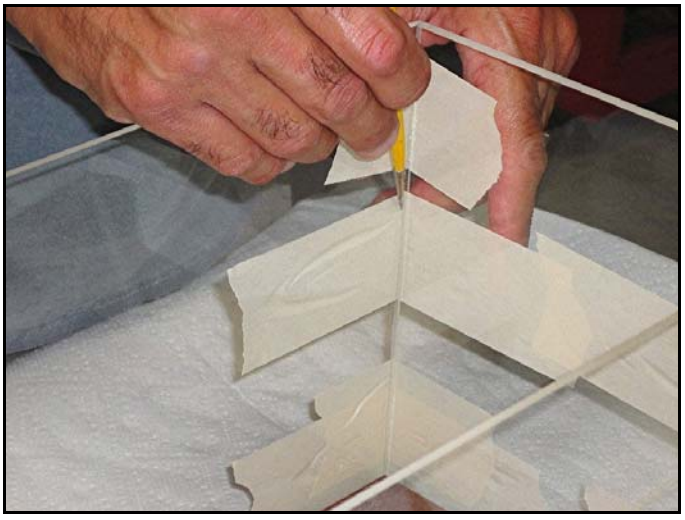
I remove the protective paper and clean the surfaces with Windex. I also protect the Plexiglas from scratches by covering the work surface with paper towels. I am also careful not to mix up the sides.



I tape the sides together tightly making adjusting as I work around the case. I also check to be sure that the top surfaces are even with a metal straight edge.



I use Tenax-7R liquid glue applied with a small flat brush. I touch the corners starting from the top working down. The capillary action of the liquid pulls the glue between the surfaces.

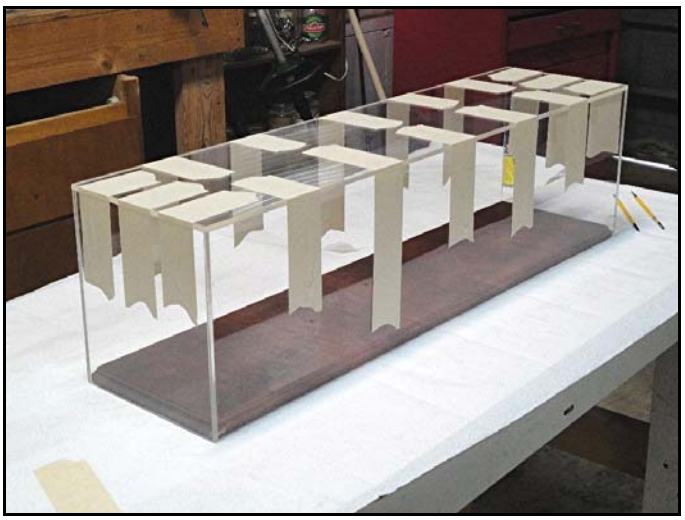


Take your time when applying the glue. Go slow as it can be hard to see the inner edges as you place the tip of the brush against them.

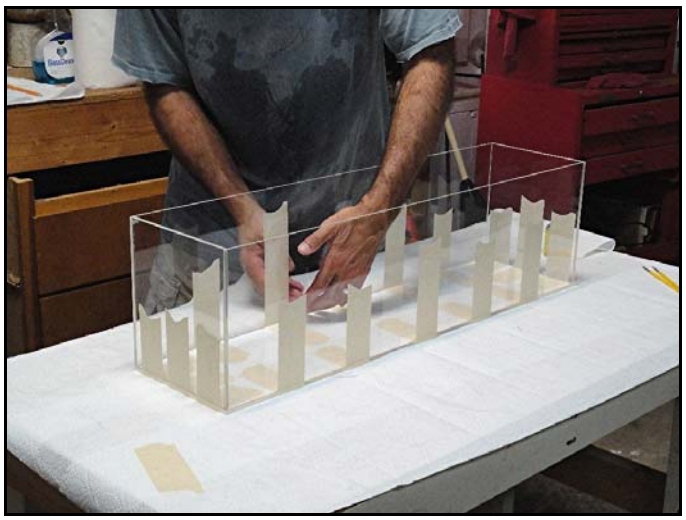
Next I cut the top and form fitted it onto the case. The width is cut first and then one side.

I turn the case over, carefully position the top and then make my final cut mark.

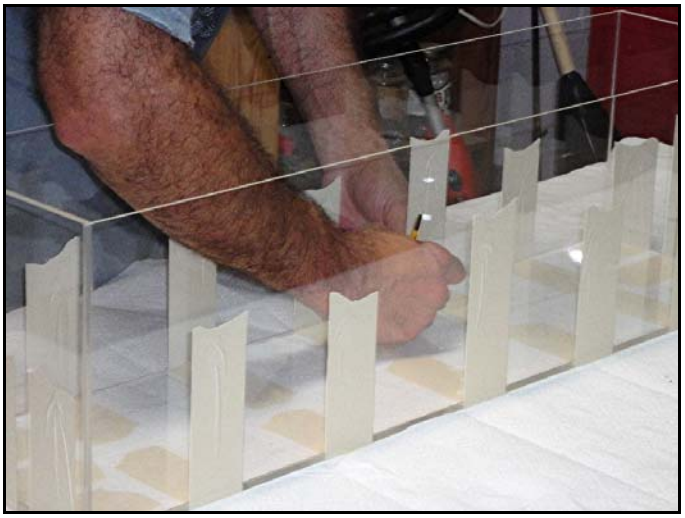
The top gets on final fit check before edge polishing and gluing.



The top is secured with masking tape and adjustment are made as the tape is applied.



Sometimes long lengths will bow in slightly so you will need to make adjustments from the inside.



Here again I carefully apply the Tenax-7R glue along the seam line and let capillary action suck the glue along the contact surfaces.

The case is now complete! To remove masking tape glue residue use Windex. To help protect the surfaces of the case against glue splashes cover them with masking tape.

I apply masking tape along the base of the case, measure and drill holes for the brass wood screws. I use my Dremel drill and I start with small drill bitts and work up to the diameter that I need. I also pre-drill holes in the display base for the screws.

Buddy is always with me and he is forever sticking his nose into every phase of my work. If only I could teach him to help me cut the Plexiglas!