

## SOME THOUGHTS ON EPOXY by Bill Coats Charleston Model Yacht Club

Epoxy is seriously good stuff but you need to pay attention while using it. The usual problem people have is mixing it. The ratio of resin to hardener is 'SACRED'. Adding extra hardener will SLOW down the cure time and make the cured mix weaker. If the manufacturer said the mix ratio is 5 to 1 or 2 to 1, they mean it! Most of the epoxies that we use should have a working time of 30 minutes or more depending on the temperature.

The hotter it is, the faster the stuff starts to set up. I buy plastic pill and medicine cups at medical supply places. The marks on the sides are accurate and easily read so I can mix small amounts and when the residue hardens it peels right out. When you have measured

it out carefully, spend enough time mixing the two parts together. You have plenty of time so stir the stuff for about 60 seconds scraping the bottom and sides of the cup. Epoxy cures by generating heat from a chemical refraction. When left in the cup it has relatively high volume to surface area ratio so it builds heat quickly and sets up sooner. Once you spread it out on the surface to be glued/sealed the area-volume ratio is less and you have more working time.

Viscosity (how thick it is) effects how we use it. Starting out with just about any good epoxy glue, we can thin it out with metal alcohol (methanol) that's used for hot rod racing fuel or motor ether for starting diesel engines in cold weather (auto supply stores) Do not use rubbing alcohol from the pharmacy since it contains 30% water. Lacquer thinner

works well with epoxy but it dissolves the styrene used in Victor kits. With ether you can thin glue down to the viscosity of paint. You can in fact make low grade paint this way but Hobby Poxo or Aero Gloss epoxy paints are much better and look great. If your epoxy needs thickening you can add stuff like colloidal silica, micro balloons, or fine sanding dust. Micro balloons make it easier to sand, colloidal silica makes it harder. The old model builders' stand by, talcum powder, works O K.

About some common brands--

West System: 5 to 1 ratio, low viscosity, user friendly, rather expensive because a quart is the smallest quantity I've seen.

System Three: 2 to 1 ratio, very low viscosity, user friendly, cost is about the same as West System.

Hobby Poxo (one hour): 1 to 1 ratio, high viscosity, user friendly, can be bought in small quantities (8 ounces).

Devcon: The clear stuff works about as well as Hobby Poxo.

Now, epoxy does not stick well to the smooth styrene in the Victor kits. No problem! Use coarse sand paper (50 to 80 grit) to rough up the area where you want the glue to adhere. Don't sand it smooth, make it rough! Don't worry about washing the surface to remove parting agents used in manufacturing. There are none. Rough it up, keep it clean, and the epoxy will work.

