

# Norwalk Islands Sharpie 18 Didi takes shape

by PHILLIPE PATACCA  
– BUILD WOODEN BOATS

**It is almost an irrefutable fact that building your dream boat will take much longer than you would like it to. I committed to building my NIS18 *Didi* in January 2009, and started in earnest. A virtual halt to proceedings happened between May 2009 until May this year. Now that Build Wooden Boats is up and running, it's back to *Didi* with gusto as the Australian Wooden Boat Festival in Hobart in February 2011 looms large on the horizon, and my craving to be on the water in *Didi* increases!**



Figure 1 : Building jig trimmed for easy access. Note cross-bracing on bulkhead B.

**O**VER THE NEXT FEW ISSUES OF AABB I will be sharing with you some of my experiences and practical illustrations of various stages of the construction of an NIS18. As I have progressed through the project I have been amazed at how simple and straightforward the design and the building process is. It really is like building by numbers, and the design itself and the materials used are very forgiving – ideal for the amateur and professional alike. It's hard to make a mistake, and if you do, it can easily be corrected or adapted without compromising the integrity of the final product.

Rather than starting from the beginning, I will start from where I am up to now – fitting the topsides and bottom – because at this stage it really looks like a boat! In later articles I'll describe the process of laminating the curved bottom, building and fitting the (off) centreboard case, centreboard and rudder, constructing and fitting the outer lead-filled keelson, glassing and painting the exterior of the hull before turning, then turning her over and fitting and finishing the cabin and cockpit. So, down to business ...

## Fitting the topsides

I wanted the topsides to have a near-perfect line to them on first fit, with no waves or dips that would need to be filled and faired later on. To do this the minimum number of temporary screws were used – the screws could create low points as they pulled in and holes would require filling later on.

**Preparing the building jig :** The laser cut MDF building jig (a standard part of the kits) is

a thing of wonder. Combined with the laser cut components it makes the assembly process very easy and accurate. It is temporary formwork, so to prepare for fitting the topsides to the bulkhead edges it was trimmed down between each bulkhead to give easy access to the side/bulkhead joint for removing excess BoteCote Epoxy-Glue (E-Glue). It also meant we could start applying the BoteCote thickened epoxy fillets to the joint once the glue cured. As the bulkheads are all securely fastened to the chine logs and sheer clamps, the jig is not required for bulkhead alignment, just for supporting the structure and keeping it level. *Refer Figure 1.*

**Preparation :** I joined the three 9mm Gaboon plywood pre-cut panels using butt straps on the inside faces glued with E-Glue, and a recessed fibreglass strap set in BoteCote Gluing and Filletting compound. I paid careful attention to making sure the butt straps were sized and aligned so that the top end (i.e. closest to the sheer clamp) was about 90mm back from the top edge of the topsides (i.e. the width of the sheer clamp plus 20mm), and so there was a gap of about 10mm between the bottom end and the chine log. To determine the length of the butt



Figure 2 : Butt strap resting on sheer clamp.

straps, I measured the distance between the sheer and the chine at the position of the butt joints. Make sure you clean up the ends of the straps well so that there will be a clean joint between the topside and the sheer and chine when the topside is fitted and resting on the sheer. Scarf joints would have given a better result with less finishing work later on. *Refer Figure 2.*

**Preparing the bulkhead edges :** I found that the sheer clamps and chine logs ran about 2mm proud of the bulkhead edges. I had overlooked putting a bevel of about 15° on the chine log and sheer clamp cut outs: Bevel the forward edge of

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the cut-outs in bulkheads A - D, and the rear edges of bulkheads F-G. The transom should not be altered as the reference face is the rear face. Fill the gap completely with High Strength Filler (HSF).



Figure 3 : Clamps and straps in place: only three screws.

Rather than tampering with the external line of the chine logs and sheer clamps by planing them down to be flush with the bulkheads and possibly create a wave or dip, we decided to build up the edge of each bulkhead using a straight edge and a BoteCote High Strength Filler mixture. After lightly sanding the bulkhead edges, the mixture was applied, packaging tape applied to the straight edge where it would contact the HSF mixture, and the straight edge lightly clamped on so it touched the upper edge of the chine log and the lower edge of the sheer clamp. Excess HSF was removed with a spatula and then the set up was left over-night to cure. They were lightly sanded ready for the topsides to be glued with BoteCote E-Glue.

**Fitting the top sides :** The laser cut topsides come with about five 4mm alignment holes pre-cut along the line of the chine log and sheer clamps. We used the centre alignment hole on each panel to simply hang the panel and then bow it around the bulkheads. We first did a dry-fit of the topside by bowing it around the bulkheads, resting the top ends of the butt straps on the lower edge of the sheer clamps. Making sure the bow and stern ends of the panel have sufficient overhang (trimmed later on), we inserted a 40mm 8g drywall screw into the centre alignment hole and screwed it in WITHOUT tightening it down. We used the pre-drilled holes at the bow and stern ends for added support - again, not tightened

down. NOTE: Mask off any unused holes so the E-Glue doesn't seep through and bond the batten to the topside!

To ensure even clamping pressure along the chine log and sheer clamp, we used a 35mm x 70mm pine batten (from the local timber yard), clamped every 400mm or so. To ensure a flush fit of the chine log batten, before fitting the batten we drilled 15mm holes for the heads of the temporary screws to go into. To make certain that the topsides were pressed against the bulkheads, we used 1.2m battens clamped diagonally from the chine log batten to the sheer clamp batten, with 38mm thick blocks to provide downward pressure onto the bulkhead. We visually confirmed that the topside was in full contact with at least one edge of the bulkhead. We also cross braced bulkhead B.

We applied a 1-2mm layer of E-Glue to the chine log, sheer clamp and bulkhead edges, then refitted the topside with the three screws, battens and clamps. We crawled inside under the transom and carefully cleaned the excess E-Glue from the joints with a 25mm s/s spatula. The voids at the rear of the bow stem and rear of the bulk head A and B interfaces were carefully filled with the excess E-Glue to form a solid joint. These voids were present because of the significant angle between the bulkhead edge on the topside. The front edge of the bulkhead was in consistent contact with the topside due to the pressure of the diagonal batten. Once the glue cured, a large fillet and glass tape will be applied along the rear of the joint to complete it.

The final verdict? Once the battens were removed, the topsides appeared to take an excellent line with no dips or waves. A successful result, with minimal fairing required, and only six screw holes to fill!

More photos and construction notes at [www.buildwoodenboats.com.au](http://www.buildwoodenboats.com.au)



The final result – beautiful!