

# BUILDING SWALLOW

## *the traditional way*



From the Netherlands, Jan Smit sends a picture-diary of his first boatbuilding project.

**T**hough trained as a cabinetmaker, I soon changed careers and was a structural engineer until I retired 4 years ago. I always was interested in boats, though I never owned one. Then, in 1996, I met Cees Prins from the Wooden Boat School at Enkhuizen – see W25 – and was introduced to boatbuilding. Over the following years, I attended workshops in lofting and making half-models until, in W17, there appeared an article by Andrew Wolstenholme about his new dayboat design Swallow. I was immediately a little in love with her classic lines.

At 14'6" long with a beam of 5'6" (4.4 x 1.7m), her dimensions made it possible to sail with 3-4 persons aboard, yet she was not too big to build in my 23' x 9' (7.2 x 2.7m) garage; my daughter ordered the plans for me and in 2001, I started building my first boat, recording my progress in my diary and in pictures. To prove my new boatbuilding skills, I took the decision to plank my Swallow not with plywood and epoxy but traditionally, with grown timber and copper fastenings. With that decision made, the project began.

At a local sawmill, I found a couple of good logs of Douglas fir, about 20' (6m), which were sawn and stored to dry. After three months, they were planed for the planking stock. In September 2001, I started building the backbone and 3 ½ years later, in May 2004, she was launched. Two more months were needed to make the mast and spars, as well as making my own sails. The total effective building time was about 19 months.



*The apron, laminated from 3 layers of mahogany in 3 sections with an inner full-length veneer to hide the joints, was glued with resorcinol.*



*In order to saw the right bevels on edges of the transom, I made up this jig for the bandsaw to hold the mahogany at the correct angle.*



*The building jig was fastened to the floor and the structure stiffened by the flat central plank. There were 8 mould frames of 20mm chipboard.*



**Above:** The apron, keel and tapered hog were laminated in situ and fastened to the transom. For this first phase of the build I used resorcinol glue but for the rest I used epoxy for better gap filling. **Below:** Sheathed with polythene sheet, the apron became the former on which I laminated the outer stem using 10 layers of 5mm mahogany



To be sure the planks looked right at the turn of the bilge, I tried them out with this full-size planking model.



The planking layout is critical to the appearance of a clinker boat: every strake must taper evenly in a natural progression from the mid-section to the ends. Though maths does help, the only way to get it really right is doing it 'by eye' with lining battens. A photograph like this is also useful: you can turn it through 180° to see what she will look like right way up. After studying this particular picture, I re-aligned the fifth batten a little.

**Below:** After sawing, the planking stock was stored outside the mill for 3 months and then a whole day was needed to put it through the planer. I stored 12 planks 10mm thick and 3 planks 25mm thick in the hallway of my house and the other 10 planks under the building jig. I cut out several knots and filled the holes with epoxy thickened with sawdust.



To ensure a nice tight fit at the lands – the plank overlaps – I made lots of peg clamps. I waterproofed the seams between the garboards and the keel and at the hood ends with Sikaflex, the rest were dry-fitted and on launching, there wasn't one leak!



How did I do it? After roving up, I temporarily fixed a round batten on the marks for the next plank which acted as a guide for the plane when planing the bevel. A supporting bar, fixed to the plane, slid along the round batten.



Building Swallow upside down left most space in the workshop. After finishing the planking, I removed most of the building frames and installed the centreboard case. The inside width of the case is 50mm and internal 'rubbing strakes' hold the board central while leaving plenty of space at each side of it so that gravel falls out easily.



**Above:** The timbers – frames – were made from green oak which steams very well. My son and I worked as a team, pushing the longest frames into place first so that any breakages might still be able to be used in the bows or beside the c/b case. We made sure of a snug fit at the turn of the bilge. After cooling overnight, the frames were numbered and then removed to allow them – and the inside of the hull – to be sanded down and then given three coats of the French le Tonkinois varnish.



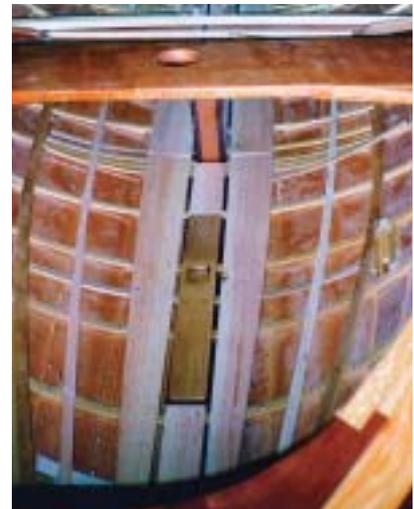
**Above:** Interior joinery started with the breasthook and quarter knees.  
**Below:** The combined width of the rubbing strake, gunwale, sheer plank, timbers and inwale came to 3" (75mm), so 4" (100mm) copper nails and roves were needed to rivet all these layers together.



**Above:** When the varnish was dry, the timbers were re-fitted: rivetted through the lands and screwed down to the hog, taking great care that they were all at 90° to the hog. Note the wedges which support the timbers either side of the hog.

**Right:** The bottom boards, made from offcuts of the planking timber, are all anchored in place with oak turnbuttons.

**Below:** For comfort, I added stern and side seats. The beam under the stern seat is 4" (100mm) deep and so does not require a stanchion to support it, making stowage easier .





The jib sheets have their own narrow side benches, the rowlock pads and sockets have been fitted, as has a neat stowage arrangement for the rowlocks. The pads are bevelled a little to ensure the rowlock sockets are central so that the rowlock stems clear the planking. Lower supporting blocks for the rowlocks were also fitted.



**Above:** Instead of a sheethorse, I fitted a 'bridge' between the quarter knees to support a rail. The bridge is profiled to clear the tiller and there is a sculling notch which doubles as a mast support for trailing.

**Below:** The set-up as seen from the other side... The stainless steel rudder fittings were custom-made to my own design. The tiller port and rudder stock arrangement ensures that the rudder cannot leap off its pintles when the tiller is in place in the rudder stock. The tiller itself is a bough from the ash tree which grows outside my house.

**Right:** More custom stainless, this time from the stemhead round to the forefoot, to match another at the stern. Conventional half-round brass keelband strips were used on either side of the centreboard slot.



**Above:** The substantial mast partner has its own risers and deep hanging knees; this section of the boat will be under most stress when sailing.



On 9 May 2004, my wife christened Swallow sail number 2 Sterna P and then we took her out under oars. After that, I was so enthusiastic that I not only made the spars, I also decided to make my own sails. After a 3-day sailmaking workshop and very careful study of Emiliano Marino's book *The Sailmaker's Apprentice* – ISBN 007 157 980 X – I bought polyester Richard Hayward 'Clipper' sailcloth from John Heathcoat & Co Ltd and with the help of the Sailcut computer program, I laid out the sails on a bench we set up in the living room. The picture above shows Sterna P's very first voyage under sail.

#### CONTACTS

Andrew Wolstenholme – see p 22.

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