7 STAGES OF BUILDING A PILOT CUTTER

Stage 3
Planking up the hull

With the hull framework for Lance Whitehead's replica pilot cutter set up at Cockwells, it's time to start putting on the planks. Not as simple as it might seem, and there are a few jobs to do first. By *Nigel Sharp*

Last month we saw how the hull framework was set up on the pilot cutter replica under construction for Lance Whitehead at Cockwells Modern and Classic Boatbuilding. Even though the lines had been accurately lofted, it was now necessary to run long battens over the outside of the frames to check the fairness, and then to make minor adjustments with hand planes.

The beam shelf and bilge stringer were then fitted and riveted to the frames. These both add considerably to the longitudinal strength of the boat although the main purpose of the beam shelf is, as its name suggests, to support the ends of the thwartships deck beams. The 4in (100mm) thick engine beds were also fitted at this time so that they too could be bolted through the frames and floors.

Planning the planking

It was now time to start planking. The process started with the 'lining off'. This involved planning exactly where every plank was to be fitted, and marking fore-and-aft lines on the outside face of each frame showing where the edge of each plank would be. As the maximum length of timber available for the planking was around 39ft (11.9m), there would need to be a series of butt joints, and the schedule for this was also planned at this stage. Section 32.2 of the old Lloyds Rules for the Construction and Classification of Wood Yachts is still recognised as an excellent guide for this – butts were to be no closer together than 4ft (1.2m) with three strakes between them.

Engine beds and, to right, starboard stringer

Just like the oak frames, the larch for the planking had been bought 'in the round' some months before it was needed, and had been cut into the required thickness (in this case 1½in or 38mm) by the Forrester 150 saw at Cockwells' sawmill a few miles out of Falmouth. This saw is easily able to cut timber up to 40ft (12.2m) in length, or even longer with the addition of an extension. The larch was now transported to the yard.

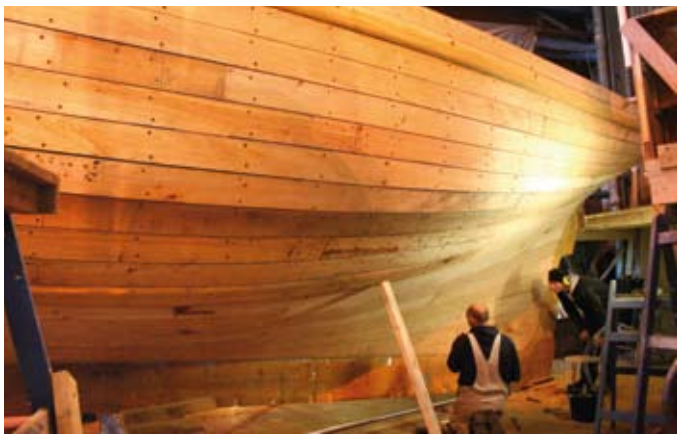
Every plank needed to be shaped in two ways. They were tapered at the end – simply because the girth of the boat at the bow and stern is not as great as amidships; and they were given a curve across their width to allow them to lie naturally to the shape of the hull without attempting the impossible task of bending them that way to fit.

Fitting the garboards

The garboard planks and sheer planks were the first to be fitted. This allowed two teams each side of the boat to work up and down towards each other and meet at the turn of the bilge where the closing plank would be fitted. Several planks, such as the garboards and those which run under the counter closest to the centreline, had a fair amount of twist in them and therefore had to be steamed – in this case for an hour and a half, as the guiding principle is that timber needs an hour of steaming for each inch (25mm) of thickness. As soon as they were pliable, they were temporarily clamped into place so that they would assume the required twisted shape as they cooled.

Two of the planks each side (the belting or the wales) were different from the rest. The second plank down from the sheer, known as the upper belting or gunwale, was 3in (75mm) thick opepe (and would later be oiled rather than painted) and its outside face was rounded so that it stood proud. Its traditional purpose was to take the wear when leaning against a quay wall although, in the case of this boat, it is highly likely that

Left: **Garboard and first plank, as seen from the stern**



Above: **Planking from the bottom up**

Left: **Fairing the completed planking**

this problem will be solved with fenders! The lower belting, or bilge wale, was fitted (as its name suggests) at the turn of the bilge and its purpose is to take any wear should the boat take the ground and lean over. It, too, had a rounded outer face but only at the midships part of the boat.

The planks were bedded on to the frames with the ubiquitous mix of white lead and linseed oil putty, and fastened with around three thousand 3 ½in x 18 gauge silicon bronze screws. While most boats built a century ago would have had iron fastenings, the pride that the pilots had in their cutters often determined that they would specify copper and bronze, as Cockwells does.

Once all the planks were fitted, long battens were again used to check the fairness, and this indicated that a small amount of planing was necessary.

Caulking

Now it was time for the caulking. Each plank had been fitted so that the inner third of the edge touched its neighbour, with a V-groove widening to 1/8in (3mm) over the outer two-thirds. Firstly, strands of caulking cotton were twisted together with an electric drill running at a slow speed, and this was then driven, with caulking irons, into the seams which were then payed with white lead and putty.

Lead ingots and concrete

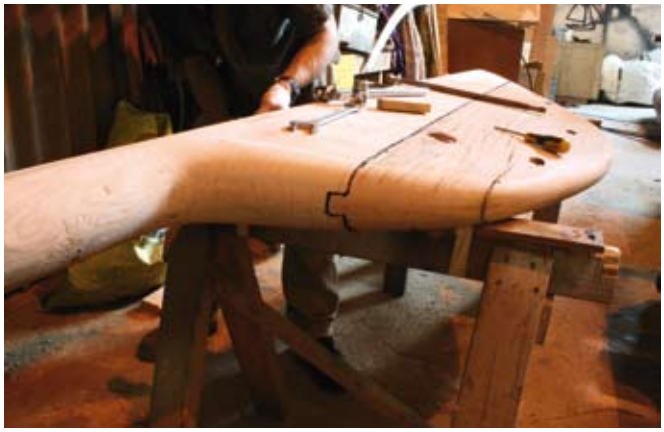
Peggy, the 1904 Bristol Channel pilot cutter of which this boat is an extended replica, had internal ballast as did all of the pilot cutters of that era. After detailed calculations by a naval architect regarding the longitudinal centre of gravity, 9 tonnes of lead ingots were fitted into the bilges. A very fine grade of concrete was then poured over the ingots to fill the spaces, including every small void, around them.

There were several areas on the centreline forward and aft of the ballasted area where there would be the potential for water to collect. These were filled and levelled with pitch so that any such water would just run to the deepest part of the bilge where the pumps could deal with it.

A conventional single-pack paint system was applied to the inside of the hull and to the topsides. After some debate about the pros and cons of applying two-pack products to a traditionally-built timber hull, Lance decided to have Coppercoat (an epoxy resin mixed with copper powder) instead of a more traditional antifouling.

To complete the hull building, the rudder (with integral stock) was made from two pieces of solid oak fastened together with bronze bolts, and a stainless steel band was fitted from stem to stern on the underside of the keel.

Next month: the deck construction



Left: **The rudder: two pieces (note the strengthened join) of solid oak**