

# Building a Wayfarer Mark IV



The process of building a new Wayfarer from start to finish. A photographic tour of the Hartley Boat's sail boat manufacturing facility in Derby, Derbyshire, UK  
(15 November 2011)



## The Setting

Hartley Boats Ltd. In Derby, Derbyshire, UK. Manufacturing facility for Wayfarer, Wanderer, Gull, Osprey and Supernova.



Hartley's also maintain a dinghy oriented chandlery at this location.



## Inside Setting

View of the chandlery and laminate shop.



## Step 1

The Master “plug” from which all the official moulds are made (essentially a complete Wayfarer Hull that will never sail). Two moulds are needed from this Master – the hull bottom and the interior.



## Step 2

Mark shows us one of the three Wayfarer official moulds in use. All moulds are exact (reverse) copies of the original Master “plug”.



### Step 3

Centre Board box moulds for Wayfarer. These are solid aluminium billets.



## Step 4

Centre Board trunk and taping for waterline put in freshly cleaned and waxed mould. Pictured is a “Gull” but same process is used for Wayfarer.



## Step 4

Wood working shop where wooden backers for all hardware mounting points are made. These are laminated into the hull and decks.





## Step 5a – bottom side

Gelcoat and initial fibreglass cloth layers applied inside the mould. The colour is not superficial – it goes right through the outer layers.

The wooden “cross” used to keep hull from spreading prior to the polyester setting.



It is at this point that the major difference in construction and cost between cruising/training models and race boats occurs. 10mm, closed cell, rigid foam is installed in race models to increase stiffness (and cost as well).

## Step 5b – top sides

Simultaneous with the hull work, the interior portion with gunwales and transom is produced. The foredeck and thwart are made separately.



## Step 5c – the foredeck, seats and thwart

A similar process being followed for this important part of the Wayfarer.

Through this entire laminating process, all materials and work are done in warm, dry conditions, ensuring good strength.

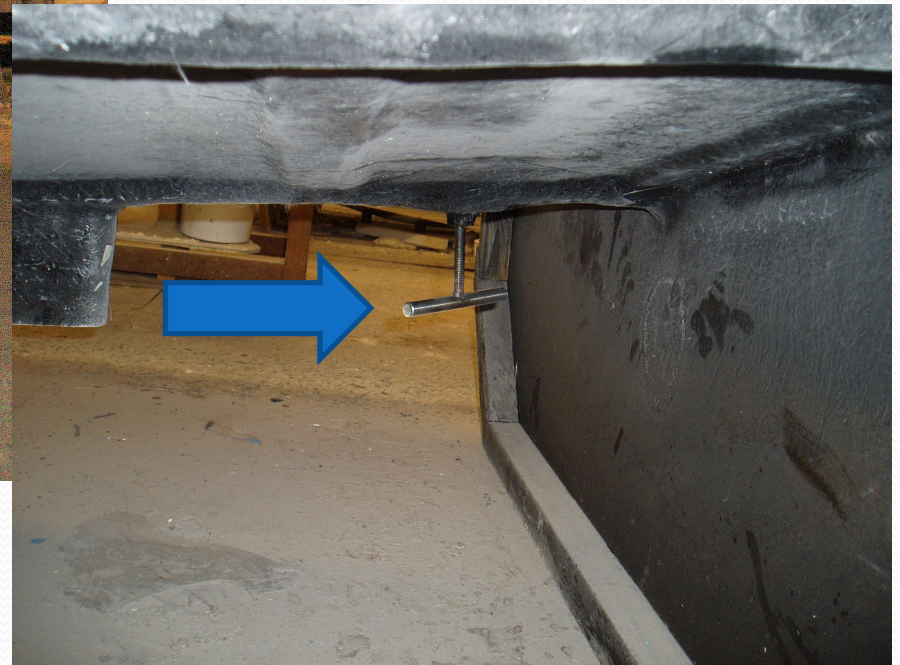


## Step 6a

The hull sections are removed from the moulds.



The hull is not removed from the mould until the interior portion has been installed. This helps maintain shape.



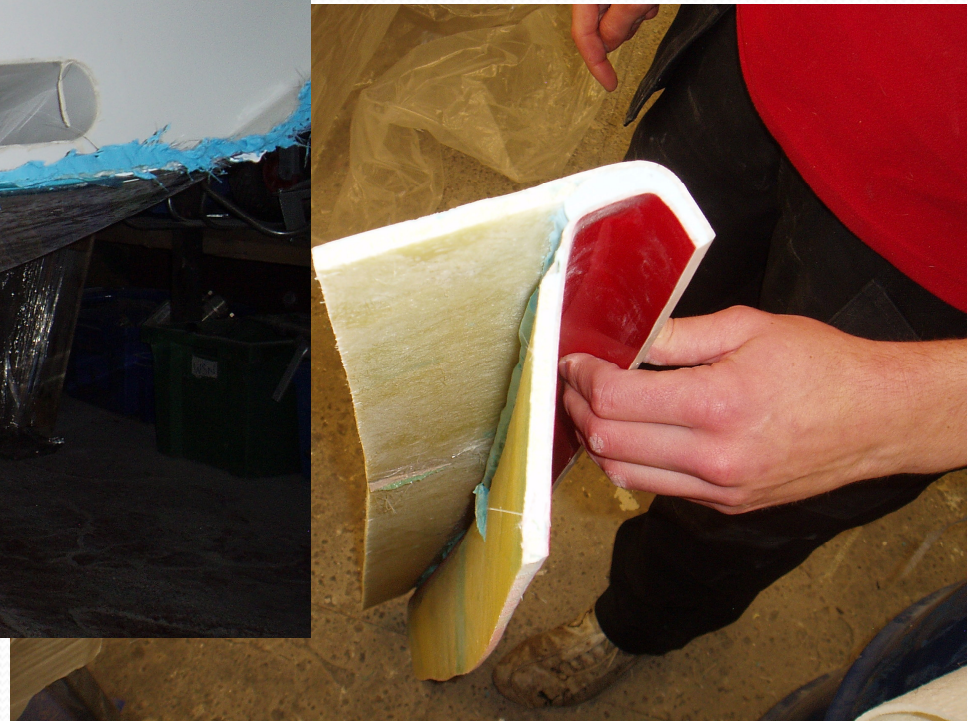
The screws (shown at right) help “pop” the completed hull out of the mould. There are two such release points along the keel.

## Step 6b

The joined hull and interior/gunwales/transom have been removed from the moulds.



Shown below is the connection between the gunwale and hull (also note the foam of the racing models)



## Steps 2 to 6

It has taken about one week to get to this point in the process.

Pictured here is the “raw” boat taking shape, ready for the trimming and installation of the deck.



## Step 7

In a very controlled but dusty environment, each boat is carefully worked through to remove all excess material. This job requires great care and is very time consuming.



## Step 8

The decks, seats and thwarts have been added and the boats are finished the “spit and polish” phase. Steps 7 & 8 have taken another week.



Pictured here are a Gull (left) with a new Wanderer, a mere two weeks into the manufacturing process. They are now ready for fitting out.



## Step 9

The final fitting out process takes another week. Everything the boats require (sails, hardware, foils, spars) comes together in the fitting shop

Hartley's manufacture the fibreglass foils on site. Wooden foils are produced by a 3<sup>rd</sup> party supplier.



## Step 9 (continued)

These photos show some interesting aspects of the design of the Mark IV with respect to the centre board.

The c/b pin is fixed in place – non removable and impossible for leaks. The c/b is installed from the top and a small plate installed to secure it on the pin.



Note the nylon insert on the tip of this new wooden c/b.



## Step 9 (continued)

All hardware mounting is done with drill templates to ensure exact and consistent mounting from one boat to the next.



## Step 10 Final setup and delivery.

At the end of 3 weeks –  
All the boats shipped from  
Hartley Boats have been  
set up, tuned and  
thoroughly checked prior  
to shipping. Owners are  
encouraged to come and  
see their “dream baby” in  
the delivery room before it  
leaves.



## The best part of all – Sailing

It takes just three weeks to manufacture a new Wayfarer but, as you have seen, there are a thousand details that go into the making of this fabulous boat.



Special thanks to Mark Hartley who gave me time from his busy schedule and allowing me the pleasure of such an interesting tour.



Presented by: **David Hansman W10865** BEOWULF