Less is More

Reaching the age of 65 one should have learnt some things. 40 years on the water, more than 30 different small boats. What boat could be the right boat for me now.

Some of the key experiences from the boats we have owned:
Yacht – dreadfully expensive to run, a constant concern, excruciating boat yard costs.
Fast dinghy – too hairy now, reactions too slow, capsizing totally unwanted.
Inboard engine fishing boat – too noisy, too much trouble, low running hours diesels are unreliable.
Fast high power speedboat – too scary, too much fuel, just too much
12' sailing Scow – wonderful fun, so easy to use they get used. Very quick to launch, Owned three.
Sailing canoes – the most important lesson of all. **Less is More**. At half the weight of a Scow, half the cost, half the sail area yet faster, more responsive, more rewarding. My favourite sailing boats.

Health issues, which can come along for many of us in retirement, meant an end to sailing. So, how can I get on the water, what is my perfect boat now, remembering the most important lesson, that **Less is More**.

Sailing canoes had taught me that long narrow hulls are easily driven. As we, my son mainly, read more about the subject the more we realised a design might be achievable that gave rasonable speed with a tiny 2.3 hp outboard.

So, the idea of a **Less is More** design for small outboard power began to germinate. She would be light, low cost in minimal material usage to keep her light, easy to launch and recover. Cheap to run and store. Bring me the things my sailing canoes did, yet in light motor skiff form. She would take me out to lovely swimming spot at Hurst Castle. Fishing in the salt marshes. Bird watching in the marshes and exploring along the protected Solent shoreline.

Jürgen Sass had to be the designer. Jürgen has many years of research and experience in this area of efficient high performing small craft, yet with lowest possible power. Exploring what could be achieved with just 2.3 hp would also be an enjoyable learning technical experience, in the same way as learning all about sailing canoes, or racing the lug rig Scows.

Jürgen reply was positive and asked for my spec.

A 2.3 hp version of the 8hp 19knot skiff is hard for me to envisage, but that makes it more fun!
Load would be me, 90kgs, a tank of fuel 2.3 ltrs, day gear say 10 kgs. Only solo.
Speed what ever you can achieve with just 2.3hp.
Can anything good be envisaged? Lots of people have 2.3 hp laying around spare.
Use would be local safe waters of Keyhaven, very much close to shore, swimming off the beach and fishing.
Tow behind electric bike to launch spot.

Jürgen looked at the numbers and felt it was possible to produce a design. Very exciting.

Keyhaven in February 2015

Brian Pearson

Keyhaven Skiff

A semi-planing lightweight skiff with trapeze bottom for sheltered waters
Design 0169

The starting point was to create a simple boat that would be powered by an air-cooled Honda engine of 2.3 horsepower. The highest speed is found to be dependent on the propeller pitch. Various calculations indicate that one probably can not come up at higher speeds than 9 knots.

From this, one can then see what the most effective length can be. With a wave-producing length of around 4.7 meters would the bow- and sternwave interact in a positive way. This could then become a good semi-planing boat with a length Froude number around 0.7.

For a semi-planing boat must be effective, the stern must be designed with care. Transom area in relation to the maximum area should be around 0.5. In addition, the maximum depth of the transom must be adapted to a low speed. The depth is selected so that the transom is dry at about 3 knots. This corresponds to the speed in which we have the absolute lowest drag where the bow and stern wave also interact in a positive way.

With the above basis displacement could be optimized to be between 200 and 300 kg. This is a length to weight ratio between 7.0 and 8.0. In this speed range, this is definitely favourable lowest drag.

In addition to this, the prismatic coefficient is optimized. In this case, it is around 0.7. Similarly, total weight's center of gravity position is optimized. To get the correct trim angle while underway is LCG around 44% of the datum waterline from the stern.

Finally, the maximum bottom width is determined in order to provide a smooth ride in seaway. Although this was not an absolute requirement as the boat is primarily intended for use in protected waters.

In addition, the centre of waterline area and bottom plane pressure point is controlled so that it is close to or in front of the boat's center of gravity so that the boat is not diving into oncoming seas.

To meet the requirements of EU Directives, the boat is equipped with big longitudinal tanks on each side. In this way, is the boat stable even when it is filled with water and can be bailed dry in a satisfactory manner. When one rotates the boat around the longitunal axis most of the water floods out by itself over the gunwale in same way as a dinghy with floatation at the sides.

Everything is optimised, no compromises were needed.

Gräddö in February 2015

Jürgen Sass

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