



Statement from the OKDIA Technical Committee regarding swing testing of OK Dinghies.

As some of you will be aware there are tests going on in Hellerup, Denmark concerned with swing testing OK Dinghies to find out if and how big any differences are in weight distribution. To date, this group has swung 10 boats with boards in. Their conclusion was that there are large differences between the boats and they are keen to pursue this further. This research is to be commended.

The Technical Committee has also been making some enquiries in recent weeks and have been asking those who understand the maths behind all this to do some calculations.

The range of the gyradius (GR) of the ten Hellerup test boats was from 930 to 1000 for glass boats and from 985 to 994 for timber boats. A timber boat built in 1967 had a GR of 1044 and was way outside the two ranges. The averages for these boats was 968 and 990, (ignoring the old timber boat)

The TC asked the question to our two experts of what do the numbers actually mean, in terms of weight distribution throughout the boat? The answer they gave is identical and is as follows.

The relative difference between a boat with GR 930 and a boat with GR 990 is approximately equivalent to removing 2kg from the centre and placing 1kg at either end.

This difference is also the equivalent of removing 2.5kg of correctors from the station 2 bulkhead and placing it 100mm from the transom. And also (very) roughly the equivalent of moving your body weight from the front of the side-deck to the middle of the side-deck.

And that's best to worst of the GRP boats measured so far; this hardly seems like a revolution in boat building. To us this seems surprisingly small considering the different types of construction. As to whether such a small difference actually makes any difference in performance, the jury is still out as even some experts in the field cannot decide with certainty.

These calculations assume a boat of 72kg, obviously with no board in. When you add on foils, spars, sail and the sailor all the differences become effectively smaller still.

So we think the question that should be asked is as follows.

Given that the relative difference between boats with GR of 930 and 990 is seemingly quite small, does it justify the investment of time, labour and capital in pursuing this as an Association?

If these numbers are correct, and everything says that they are, then to us it looks as if our Rules on construction are working perfectly well. These Rules rely on common sense and having quality measurers who check for excessive weight concentration. We think the current set of boats all comply with this and to all intents and purposes it looks like they are within a very close range. With continued and better vigilance from the national measurers the boats will continue to be built as close as they currently seem to be.

So where to from here?

To begin with, the Technical Committee, the Executive Committee and the two Class International Measurers have no desire to see swing testing introduced into the class.

The Hellerup swing group is intent on experimenting further and we don't have any problem with that. They need to test a lot more boats from a lot of different countries and under differing conditions and with different people and get the same results before they can say they have consistent results.

A good use of their testing might be to check the difference in double bottomed ply boats to see if they are still in a similar range to other types of construction. If they are then this would provide good evidence towards a modified Rule Change proposal from the one that failed in Melbourne.

For this to go any further a proposal will be needed that will have to include the following.

1. An accurate test method. Including gunwale shapes and positioning of swing equipment.
2. Detailed plans and specifications of equipment used.
3. Decide on a pass/fail (vertical CoG, horizontal CoG and GR), what to do with a fail test and a plan on how to modify possibly a large number of boats.
4. Decide how to spread the correctors around the boat when there is no access available. This may be four sets of correctors, or eight as it the Finn. They must be glued to the boat so they cannot be removed and must be able to be inspected. This will also have to include tables of where to put the correctors so it is not a tedious task of hit and miss to make a boat pass.
5. There needs to be a proposal for a new measurement certificate that is internationally recognised and that records the position and weight of possibly eight correctors.
6. There needs to be a proposal to show how we are going to train measurers in 12 countries to undertake these tests and finance the equipment needed.
7. Someone needs to work out how subsequent alterations to a boat such as new fittings or painting/varnishing will be dealt with and whether this would result in re-swinging the boat.
8. Someone needs to deal with the extra work involved in a Worlds Measurement when boats may have to be swung and all boats will need checking to see that their four or eight correctors are in the correct place.
9. Someone needs to work out who is going to pay for all the above.

Basically **someone** needs to do an awful lot of work.

Sailing the OK Dinghy is supposed to be about having fun and we see no fun in this. And given the apparent closeness in the calculations the whole process would seem a bit eccentric.

The Technical Committee's role is to research options and give advice, so any further action in regards of any possible rule changes has to come from the broader membership of the class. The TC will go on monitoring the situation but our job in this instance is to inform the membership of what our opinions are, and that is the main purpose of this statement.

OKDIA Technical Committee - April 2015