

Weighty matters...

When IRC (then CHS) was first introduced in the mid-1980s one of the biggest grumbings we had from its detractors was the fact that we physically weighed boats rather than attempt to calculate displacement from a theoretical immersed volume... This may sound an unlikely issue today, but in the late 1980s load cells were still considered by many to be too expensive and unreliable.

It should be noted that IRC does not in fact require boats to be weighed. It is only necessary when an endorsed IRC certificate is required, and when we do not have sufficient reliable information that allows us to be confident in the knowledge of a boat's weight. It is also worth noting that, even though we now hold standard data for countless production and series-built boats, the weight of individual boats can vary significantly from the norm. So getting a boat weighed

long keels this is a reasonable argument, but for the vast majority of cases we simply require regular slings plus a lifting bridle. This may be as simple as a set of spreader bars, which crane hire companies often keep as standard equipment. There is no requirement for the boat itself to have a dedicated lifting eye.

We do encourage owners wishing to weigh to try to arrange a group weighing to spread crane costs between the owners. This also increases the number of hands around to help, and can be a good way of bringing a local fleet together at the start of each season. In the UK our office maintains a good selection of load cells, but hiring them from elsewhere is also simple and relatively cheap; however, to be accepted every load cell used must hold a valid calibration certificate – and it must always be used with the correct, properly tested shackles.

Today single point weighing is used for everything from the America's Cup, through Volvo Open 70s to one-designs such as the Farr 30s, Swan 45s etc, as well as for IRC. It has become the standard in many parts of the world. But in other areas the practice is not so widespread. In some areas crane hire is still either excessively costly or simply not available, or the marina may not have enough hard stand that is suitable. Alternatives are still required and some that we have tested satisfactorily are shown in the measurement section of the IRC website.

The next best solution to the simple lift is to use pressure pads beneath a rigid cradle. Using load cells built into a Travelift does not give sufficiently repeatable results and is not accepted, but we are currently working to establish whether pressure pads set beneath a Travelift can be made accurate enough for our needs. Initial results suggest that set-up here is of huge importance, and that just 20mm of misalignment can change results dramatically. We are looking into solutions for this, and are working closely with Craig Nutter at the Medina Yard in Cowes to identify a repeatable and accurate procedure.

Of course, the other key issue is getting the boat itself into measurement condition. For most people this is actually a good time to clear out the constant and inevitable build-up of junk in the boat... But for a large superyacht in practice this ceases to be possible once the yacht has been put into commission.

For a superyacht moving tens of thousands of litres of fuel at the dock requires a tanker, while taking the mainsail off the boom will frequently require a crane. As for the yacht itself, in an increasing number of situations there simply isn't a crane available big enough to lift the boat. And if there was, safety factors simply won't allow it.

However, Paolo Massarini and I have now established a satisfactory measurement method for the Wally Class, with the help of the ORC's chief measurer Nicola Sironi and Tacha Montaner, which we are now able to extend to all very large yachts.

For such vessels the overhangs are recorded in the condition presented, in the usual way, and the displacement is then carefully established using the IMS hull offset files, with overhangs and boat weight then corrected out to the empty condition needed for an IRC rating. The method has proven surprisingly repeatable and consistent in those cases where weighing simply isn't an option.

Simply picking the boat up has, however, proved to be the most reliable method of establishing boat weight – avoiding the many pitfalls of calculated displacement... The cause of so many, on occasion spectacular rating controversies during the past 30-40 years.

There is nothing wrong with keeping things simple.

James Dadd, chief measurer

FREDERIC AUGENDRE



Matters have been quite tranquil in IRC world recently – many share a desire for a second system focused around raceboats but no suitable alternative has gained any real traction. Nothing like a big design departure to shake the tree, however, and David Raison's scow, seen during early testing, is certain to have been a catalyst for what will be a major new challenge for the rule managers in the not so distant future

is a very useful tool for IRC – and also for understanding your boat better in terms of your competition.

I remember discussions within the America's Cup measurement committee about the load cell that was used for the first America's Cup Class (IACC) events in 1992, which needed to be transported around in the back of a truck due to its size and weight. By the 1995 Cup the load cell was down to a size that you could get your arms around, but still only the grinders could lift it singlehanded (interestingly this particular load cell was used right up until the 2007 America's Cup, and is the most accurate such unit that I have ever used; I purchased the same model for the Volvo Ocean Race in 2001 and never regretted it). Today's load cells are of course much smaller still, often with neat handheld wireless displays.

Yet in spite of the improvements, virtually every time we have received a query about the weight of a boat hung off a single point lift, the finger is pointed at the load cell; before on closer inspection it (always) becomes clear that something onboard has been overlooked, or the lifting gear has been added rather than deducted from the calculation! The modern load cell is very rarely at fault.

We are also often told that single point lifting is simply not possible. For some very large boats and some classics with their