

2019 Etchells Worlds: Insights into a magic campaign



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Fleet at the Worlds in Corpus Christi © 2019 Etchells World Championship

Rupert Holmes looks at the key factors behind Iain Murray and Graeme 'GT' Taylor's stunning first and second places at the 2019 Etchells World Championship in Corpus Christi, Texas.

Victory by a whopping margin for two recently-built Australian craft in this year's Etchells Worlds has fuelled much debate in the class as to whether these are "special hulls" with magic ingredients. Some competitors are even going as far as to question whether it's still a genuine one design class.

However, an analysis of the track record of the 16 boats built from the 2011 Australian mould shows a different story. Eight of these were at last year's world championship in Brisbane, where they finished 5th, 13th, 15th, 22th, 37th, 41st, 46th and 63rd in a 94-strong fleet. By contrast, first, second and fourth places were taken by Heritage boats and third place by an Ontario built boat.

At that stage, the newer Australian built boats were clearly far from dominant in the fleet, even though there were more than at any other previous worlds. The best placed owner of an Aussie built boat, Chris Hampton, scored fifth overall, but subsequently ordered a new Heritage boat from the UK, in which he finished fourth in Texas this year. Clearly in 2018 the Australian built boats were not seen as being on the pace.

So what happened between October 2018 and June 2019 that led to Murray winning this year's



2019 World Champion - Havoc - Iain Murray, Colin Beashel, Richie Allanson © 2019 Etchells World Championship

championship in the same boat in which he'd finished 46th in Brisbane?

When two identical and newly-developed boats dominate a tough championship like the Etchells worlds it's easy to assume the hulls were the key ingredients in that success. However, the basis of Iain Murray's win and Graeme 'GT' Taylor's second place at the 2019 Etchells Worlds in Corpus Christi at the end of June clearly lies elsewhere.

Once you delve into the background it quickly becomes clear the hulls represent only a relatively small element of a multi-faceted and massively time-consuming campaign. Murray had been decidedly mid-fleet in the same boat at the worlds in Queensland, Australia last year. His 46th out of 94 boats was a disappointment especially with his new Pacesetter hull. Granted, he had to count an OCS, but even disregarding that, Murray's average finishing place was 28th.

Since then every aspect of the campaign was scrutinised in minute detail, with outcomes of that process including a new optimised lightweight rig and a custom sail development programme.

An important aspect also is that this was a joint development process with GT's team. He has an enviable track record in the class, having scored three podium overall results (one third and two seconds) in the past five world championships. Each of these was in a boat from a different builder. GT's emphasis has been on process and team, which fits nicely with Murray's renewed focus.

"I believe we had one team with two identical boats, rigs and sails," says Richie Allanson, who sailed with Murray on the bow and was involved with much of the rig and sail development work. "There were no secrets between the two boats, the goal was to have one of them winning the world championship." Between the two boats there were five former Etchells world champion wins, plus a further former winner, Mathew Chew, helping on shore.

"Everything was looked at with a fresh set of eyes," says Allanson. "Just because things had been tried 20 years ago and dismissed it didn't mean they shouldn't be revisited. As Iain has said in an interview, the gains we achieved were the sum of many little things - we are talking of a game of inches... you know how different your day is when you can make that cross at the top mark, compared to when someone has a piece of you, forcing you to duck."

The benefit of this closely-knit team approach was highlighted on day 2 of the Corpus Christi worlds, when GT's boat Magpie was not going as well as hoped - they were good but not great. "We checked the rig, changed the rake, mast step position and mainsail top batten to match Havoc's," says Allanson. "It shows just how tweaky these boats are and how much a little bit of confidence can change your results."

Background to a successful campaign

Murray reveals a lot of the background to this year's win in an interview with his old Star class crew from the Athens Olympics and double Etchells world champion Andrew 'Dog' Palfrey (see [sailing.dog](#)). It was recorded in Cowes when Murray was visiting in early August in his capacity as SailGP race director.

"We had high expectations of what we could do in the new boat in Queensland," he told Dog, "but came about 50th after some pretty poor racing on our part. Then we worked on that boat over the year and were pretty happy with the boat, but the way we wanted to sail the boat, and the way we wanted the stiffness of the rig, still wasn't quite right.

"So the last year has been trying to tune the rig and the sails - we can now get much more range. In

Queensland we weren't great when it was windy and weren't great when it was light. We've come a long way with the sails and the rig in the last year."

He also says getting Colin Beashel on board made a big difference in being able to sail the boat the way they wanted, with really tightly sheeted sails. "Having another triple world champion helm on the real rudder - the mainsheet - was a big win for us." In addition, a lot of people sailed the boat since the Brisbane championship, including John Bertrand.

Murray's team has partnered with GT since the 2017 San Francisco worlds, when he came second in a Heritage boat. "We all eat together - it's a team," he told Dog. "So it followed they wanted similar equipment. They have a great blend of skills in their team - that's helped what we do - and equally we've helped change what they do, especially upwind."

Murray thinks boats from all three Etchells builders are quite similar, although initially the Australian builds needed "a lot of work" to get them to a similar standard as the Heritage boats. "We were close to ordering a boat from H, but wanted to build a boat in Australia - we're proud Australians - so we showed Phil Smidmore and Mark Rowed over Heritage boats, with permission of the owners, and said 'you've got to get with it'."

Murray also told Dog he thinks the hull shapes, keel weight and keel section are so close to identical - "likely within half a millimetre" - that this aspect makes no difference between boats from the different builders. However, they embarked on a big drive to get the new boats down towards minimum weight, but with a heavy keel: "We haven't quite got there yet, but it's entailed an entirely different fit out that's [almost] devoid of nuts and bolts."

Allanson compiled a spreadsheet with every single item that was going into the boat: "We weighed everything, right down to the nuts and washers, so we could make sure we weren't carrying any parasitic weight. It quickly became apparent the stainless steel fastenings used to hold fittings on add up a lot of weight very quickly."

As a result now there are only around eight stainless steel shackles on the boat and if an off-the-shelf fitting wasn't right it was modified or replaced with a custom one.

Attention to detail

A single example of attention to detail is in the bilge pumping arrangements. This was identified in advance as an important factor in a potentially bumpy venue such as Corpus Christi. These were completely re-thought to minimise the head of water.

A modified double chamber manual pump is located under the back seat, with dual exits, so the water flows to leeward behind the helm. There's therefore only a very small head to lift the water through - maybe half a metre, which makes it very efficient. In addition, the battery for the electric pump was upgraded so it could operate all day if necessary. The weight penalty for both modifications were judged as being smaller than carrying an unnecessary weight of water.

Rig development

This is the area in which Allanson thinks the team made the biggest gains. Between the Brisbane and Corpus Christi championships they tore up conventional thinking and started from scratch. The rig used in Brisbane was heavy and had a flat spot where it bent, so they struggled downrange.



2019 CITGO Etchells World Championship - Day 2 - photo © Etchells World Championship

"We started looking at how to make the rig light, with minimum tip weight and ended up with a mast with no sleeve, reduced welding - everywhere we could we made the mast as light as we could," says Murray. They also used 1x19 wire instead of Dyform, as it's 20 per cent lighter. In all he estimates tip weight was reduced by close to 3kg - which may equate to as much as 15kg in the keel.

"The end result was that the mast was very uniform and consistent side to side," Murray adds. "Now we never move the spreaders, never move the mast base, never change the rake. All we do is move the shroud positions and change the tensions of course."

"From there it was a fresh look at the set up of the rig," says Allanson:

"How can we get the rig to go through the whole wind range without changing the spreader sweep?"

"How do we get a tighter forestay?"

"Why does everyone put the shrouds and lowers in holes two and four?"

"There are 10 holes - what happens if we put the shrouds in different positions?"

"Iain was all over it," he says. "He has a wonderful ability to think out of the box, together with a good feel for what the results will be. Other than moving the shroud positions around we kept our tune pretty simple. We don't adjust the rake and only adjust the mast step position to fine tune the mainsail depth at the bottom stripe."

Murray says now on windy days the lowers may be in holes four to nine. "It's similar to moving the mast step - we try to do the same things but in a different way," he told Dog.

Conventional thinking for adjusting the headstay was also shunned. "To me it was weight and windage in the wrong place, as well as a visual annoyance," says Murray. The solution was a one-

piece headstay that does not have the usual join above the deck.

Sails

As with rigs, it would be easy to assume that there has been so much development in Etchells sails that there's no room for further improvement. However, Allanson, who has a long background in the industry and was part owner of [North Sails](#) in Australia for almost 15 years, says the same attention to detail went into the sails. While there were no magic bullets, the team wanted to explore how they could maximise the benefits of a tighter forestay, jib sheet inhaulers and so on so that they could sail fast with tight-sheeted jibs.

After looking at a lot of sails and luff curves the team decided they liked the standard PC-FM mainsail, but work was needed on both jibs and spinnakers, resulting in unique sails for the next championship.

"Both Ian and GT were more comfortable with the North GM6.5 jib than the LM so we used the GM6.5 as our base", Allanson says. "Our GT for heavy air was a relatively easy step, as it was essentially the GM6.5 built out to the long tabs, with a better leech profile and produced a nicer twist.

"Again using the GM6.5 as a base we ended up with the MAL (light air) jib. The two sails complement each other nicely, with a good overlap. We were the only two boats at the worlds with these jibs." This was only achieved through Allanson building and trialling a number of sails - both at state championships and in club racing - before becoming happy with the shapes.

Neither boat measured a conventional full VMG spinnaker for the worlds. Instead they chose a Superlite 50 and an AIRX 500 Full Radial. "The thinking being the Superlite 50 has a slightly softer finish that would allow the full-size sail to be used further down range," says Allanson. "These were shaped to be very stable in the head to allow for more open sheeting." He believes they were the only two boats at the Worlds with this configuration of kite.

"With tight sheeting having someone like Colin on the main and Richie on the jib is a big benefit," says Murray, "as the boat can get cranky, especially in a choppy place like Texas." In his interview with Dog he also talks extensively about getting the correct helm balance and trim in different conditions, as well as other technique including fore and aft trim.

Both teams arrived at Corpus Christi in time for Dog's training camp and "to get our head around the venue - by the time the worlds started the only job was to go racing," Allanson says, "no distractions, no tinkering."

Clearly Murray's and GT's team was far more hungry for victory this year than anyone else in the fleet, so put an enormous effort in on all fronts. Key attributes of the class are that the boats are tweaky, the racing is great and you get to compete against both Olympians and past and present world champions. However, these are the very people who will raise the bar and challenge the establishment, putting an enormous effort into refining systems and working out how to sail the boats faster.

If there's an element of "magic" involved it's clearly in the extreme effort the top two Australian boats went to in order to win the Corpus Christi worlds. Any pair of owners embarking on a similarly intense two-boat program with their existing Etchells can also expect to see huge gains.

Key statistics:

The last five worlds have been won by boats from: Pacesetter (Australia), Heritage (UK), Ontario (Canada), Heritage, Ontario. Here's who built the top 20, top 10 and top 5 performing boats at world championships, aggregated over the past five years:

	Top 20	Top 10	Top 5
Bashford	4	2	1
Heritage	27	16	10
Pacesetter	8	3	3
Pamcraft	4	3	1
Ontario	53	26	10

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