



SPORTS

BOATS

I FEEL THE NEED...

ANDREW YORK LOOKS AT THE DEVELOPMENT OF SPORTSBOATS AND HOW THEY NEED TO BE SAILED

It was in the early years of this century that sports boats broke away from their trailer-sailer forebears. A more competitive group of owners started adding sail area and stripping out accommodation from their boats.

Most people's perception of a sports boat is a trailerable sailing boat with masses of sail area. While this was the genesis of sports boats there has been a gradual change.

It became evident that sports boats needed to form their own separate group. ASBA was founded in 2007 by Cameron Rae, Mark Roberts and Richard Parkes. They wanted a more scientific handicapping system than had been employed in the past. In 2008 the Sportsboat Measurement System (SMS) was put in place by a body independent to ASBA. It was created by the same people who formulated the Australian Measurement System (AMS) in 1997.

Sports boat racing has flourished across Australia under the ASBA banner, with the SMS rule encouraging high performance designs without the penalties that existed under other systems. Large asymmetrical spinnakers, in particular, are not penalised as harshly in the rating as the working sail area is, so that is why you see the sports boats with clouds of sails downwind.

In Australia sports boats are defined as being between 5.8m and 8.5m in length and no more than 3.5m wide including hiking racks. The use of trapeze is not allowed. The SMS rule which rates sports boats is now used in many other countries.

PLANING

Sports boat sailors want a high performance platform that planes downwind and still sails well upwind. Australian and New Zealand designers, whose boats who have been dominating the ASBA scene, have added more sail area than was traditionally seen on boats of their size.

Fin keels with lead bulbs became deeper and heavier to counter balance the load in the rig. Substantial crew weight was also required to keep the boats performing at their peak. It is not uncommon to have five or six crew on the 7m and 8m boats.

Hulls are built lighter with good flat runs aft for planing. Speeds in the mid to high teens are often seen when the breeze is up.

The Thompson 7 Excel has flared topsides to get the crew further outboard.



ALL PICS: TERI DODD'S

The Melges 24, first launched in 1993 is well known as a popular and well performed sports boat. Melges 24s have won two ASBA national titles and they have been the boats to beat in light air for quite a while.

The rest of the fleet however, has become quicker in a breeze. The reason for this is mainly to do with the power to weight ratio. More sail area compared to the weight of the boat means that it does not take as much wind to get the more modern boats planing on top of the water instead of ploughing through it.

While the Melges 24 has a sail area to displacement ratio of 37, the Thompson 7 and 8 and many of the other boats in the late 2000s have a SA/Disp. of between 45 to 55. When you add the crew weight into the equation the difference is not quite as big, but this generation of sports boats are sailing around with 20 to 30 percent more horsepower for their weight than the Melges designed a decade before them.

BALLAST RATIO

The new breed of sports boats had maintained a relatively high ballast ratio like the Melges. The Thompson 7s and other boats in the 2000s had flared topsides to get the crew further outboard which is an effective way to counteract the load from the sails.

The crew weight on sports boats was more effective in keeping them upright than on larger yachts so they could carry relatively more sail area. These boats and many of the others around were still relatively narrow on the waterline to keep the wetted surface low.

In 2008 Rob Shaw designed the Shaw 650, one of the

most successful sports boats to date. They are 6.5m long and 2.45m wide with flared wings for hiking and fairly narrow at the waterline. They have a good flat underbody which helps to get them on the plane early. The rig is a little shorter than the other sports boats that were sailing at that time but she is built light and with a lower ballast ratio and still has a massive chute. They can be bought as a production boat or home built which has been quite popular. The SA/Disp. ratio of these little beauties is around 70. This is a huge improvement on the other boats so you can see why these boats have been very successful for a long time.

Some people added racks to their boats to get the crew outboard. Brett Whitbread who won the 2011 ASBA Nationals in his Egan 7, *Blokes World* reincarnated her into what many believe is the quintessential sports boat, *Crank*. This grey-hulled beast has a huge rig towering over 10m above the cockpit floor and has a crew of five hiking out on removable racks which give her a beam of 3.5m on



the water and 2.5m for towing on the road.

Crank looks like an overgrown 12 foot skiff with the size of the rig compared to the length of her hull. She has a SA/Disp. ratio of 65 which makes her pretty competitive in all conditions.

SAILING

With the large sail area that sports boats carry they need to be sailed like skiffs downwind. As a gust hits you need to drive them deeper to stay upright. It is really important to sail for the pressure more than the shifts. If you can find an extra 5 knots of pressure you can go 5 knots faster and 10 to 20 degrees lower.

I have come up with a set of guidelines for sailing sports boats downwind which should hold true for most high performance boats with asymmetrical kites. It may not apply so much to the boats that think they might be

sports boats, that let the tack lines on their assos out to sail deep in light air.

1. Straight after the kite hoist get up to speed so boats behind cannot sail over you. A lead of 30 metres is only about 5 seconds in 12 to 15 knots of wind.
2. Protect the longer tack on a run
3. Keep an eye out for others behind gybing for pressure. Gybe with them unless you are sure you are heading to good pressure.
4. If you have sailed through pressure on a run, look at gybing to get into the pressure again on the other tack.
5. Cover by being in front of boats behind, not gauge abeam to leeward. If you are abeam to leeward they can sail down on you in a gust. If you are forward of them you have a much better chance of getting breeze in time to defend your lead.
6. If everything else is equal then minimise the number of gybes to the finish/ bottom mark.

ABOVE: *Stig* is a Shaw 650 and one of the most successful sportsboats on the local scene.

MAIN: *Crank* looks like an overgrown 12 foot skiff with the size of the rig compared to the length of her hull.

"IN GUSTY CONDITIONS THE WIDER HULLS ARE MUCH MORE FORGIVING AND EASIER TO SAIL THAN THEIR NARROWER COUSINS"



SUMMARY

Sports boats added sail area and width at the deck for extra leverage for the crew when hiking. This was very effective as the crew weighed 30% to 40% of the boat weight.

Then the sports boats became lighter with the likes of the Shaw 650. In the lighter boats the crew weight became close to 80 percent of the boat weight so it was an even bigger factor in the overall stability. The ballast ratio was reduced as the crew were more capable of keeping the boat upright.

There has been more progression since then on the design of sports boats and it started with the VX One. Up until the VX One the hulls of the boats were still designed pretty much for minimum wetted surface. This is helpful at low speed in light air but probably not the best shape for sports boats which plane in a breeze and now have the crew weight contributing the majority of the righting moment.

With the ballast ratio of the boats going down and the crew weight being a large percentage of the boat weight it was now possible for the crew to heel the boat in light air to reduce the wetted surface of a wide hull form. A boat with chines close to the waterline with substantially increased form stability meant that the crew and keel were more effective in keeping the boat upright.

The reason for this is that when the wide hull of the VX One leans over, the centre of buoyancy moves to leeward substantially. This means that the distance from the crew and keel to the centre of buoyancy increases (a greater lever arm).

The centre of buoyancy on the narrow hulls does not move to leeward much at all so the lever arm hardly increases. This

increased lever arm has allowed the weight of the keel to be reduced, again without affecting the overall stability.

Also, in gusty conditions the wider hulls are much more forgiving and easier to sail than their narrower cousins because if the wind drops suddenly the centre of buoyancy will move back to the centre of the boat when it flattens off and even to the windward side to help support the crew who maybe still hiking if the boat leans to weather.

The VX One has not made a huge impact on the sports boat fleet as far as taking out a lot of podium finishes at major regattas. The two main reasons for this are that even though they perform well for their size they are very much the small boat in the fleet and do not end up with much clear air up the beats.

The other reason is that their one design fleets have grown and most of the owners do one design regattas instead of the mixed racing with the sports boats. There are twenty VX Ones in Australia now.

REO 7.2

From my experience in sailing a VX One, I saw the benefit of a hull with good form stability and built an extended version to take on the sports boat fleet. The boat I built is the REO 7.2 which is 1.4 metres longer than the VX One.

I kept the rig short on her so she was optimised for sailing in the typical sea breezes in Australia of 15 knots or more. While the rig is small for a boat of her size, the SA/Disp. ratio is 63.7, which is still one of the highest in the sports boat fleet.

Even though the rig is small, the power to weight ratio is still good so she performs well upwind even in light conditions. Downwind she excels as she has a large ass like the other sports boats.

As the rig on the REO 7.2 is short she sails upwind in a breeze with the mainsail in control while others with longer masts have their mainsail ragging and slowing them down.

Sports boats perform better than other yachts and sporty boats as their SA/Disp. ratio is 50% to 100% higher than them. (The SA/Disp. ratio of the C&C30 and Farr 280 are 33.) Sports boats have had more design development over the last two decades and they make good use of the righting moment from their crew weight.

The REO 7.2 is at the cutting edge of the latest gains in performance. The combination of small rig, high SA/Disp. ratio and high hull form stability has not been employed in any other designs. The REO 7.2m has only done two ASBA Nationals coming third in 2016 which was only her second time in the water and winning six of the nine races in the 2017 ASBA Nationals to take it out. There are people already interested in a one design version of the REO 7.2 which is in the works.

There are many good sports boats for sail at a reasonable price and the fleet will welcome more participants.

So if you are an ex-skiffie or someone else whose body is not quite as quick as it used to be and you "feel the need" then a sports boat is for you. *



ALL PICS: BETH MORLEY SPORTSAILINGPHOTOGRAPHY.COM

Andrew York sailed in the America's Cup, offshore, one design and a wide range of "lead mines" before falling in love with sportsboats via the VXOne. He is now developing an extended version for production called the REO. More details: www.facebook.com/REO-72-Sportsboat.

THERE IS A FURLER FOR EVERYONE

See them all at the Boat Show Hall 6 stand 606

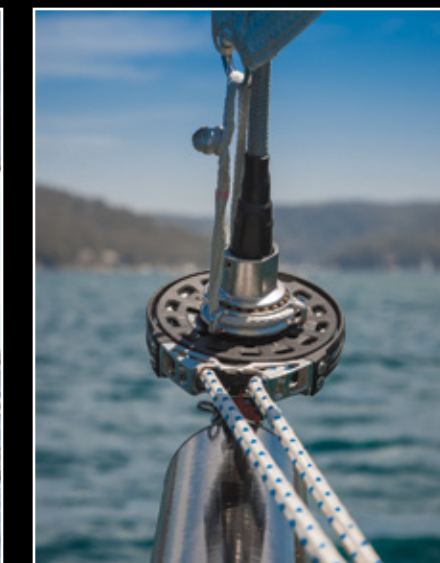


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