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Photo: James Boyd/TheDailySail

On board Wild Oats



James Boyd has a snoop around the Aussie big boat and finds out the secrets of her canting keel and forward rudder system

Aside from the exceptional performance of the new Ker-designed *Aera/Bribon* in the Admiral's Cup one of the most talked-about boats taking part has been the biggest in the fleet - the 60ft Reichel-Pugh designed *Wild Oats*.

Originally designed as a fast, fun day sailor for Australian wine magnate Bob Oatley, the boat sailed at Hamilton Island Race Week last year and despite being just three weeks out of the box beat maxis like *Wild Thing* and *Alfa Romeo* on handicap. She subsequently went on to sail in the Pittwater-Coff Harbour race, breaking the record by more than two hours.

One reason for her outstanding performance is that *Wild Oats* uses the [CBTF \(canting ballast twin foils system\)](#) as developed on the yacht *Red Hornet* in the States and subsequently on the production Schlock 40. In addition to having an Open 60-style canting keel she also twin rudders - one aft and one forward that operate in tandem.

Owner Bob Oatley has had a long career in racing, although he took a substantial break when he was developing his family company, Rosemount Wines: Time well spent it would seem - Rosemount was merged recently with Australia's leading wine company Southcorp, releasing an impressive Aus\$ 881 million to the Oatleys.

"It has turned out to be a success far beyond any expectations you could have possibly imagine," Oatley told TheDailySail, speaking about his boat... "She accelerates so fast, it adds another dimension to the sailing, which makes it a lot of fun. I've had IOR boats, but this is by far the most fun to sail."

Aside from *Wild Oats*, the Oatleys also own the Laurie Davidson 60 *Another Duchess* which is also based at the Royal Prince Alfred Yacht Club in Pittwater, to

Wild Oats Vital Statistics

LOA 18.43m
LWL 16.76m
Beam 4.10m
Draft 4.07m
Disp 9,233kg
IM 22.72m
J 7.10m
ISP 25.82m
SPL 7.60m
P 23.80m
E 8.62m

Designed by
Reichel-Pugh
Built by Azzura
Yachts, Queensland

the north of Sydney, where *Wild Oats* normally resides.

Colin O'Neil, the man behind the Australian Rodman 42 *Aftershock*, also has a sistership to *Another Duchess* also at the Club and Oatley says that their decision to field a team in the Admiral's Cup came from them each egging the other on. "He's here because we're here and we're here because he's here," says Sandy Oatley, the eldest son who is also sailing on board. "I think we agreed it one night over a glass of wine..!" jests his father.

The beast

The boat was originally designed with a fixed keel, but at the time Reichel-Pugh were taking a serious interest in the CBTF system. "It was an option and because they thought it was something a bit radical, Bob went with it. He likes anything cutting edge," says John Hildebrand, who runs Oatley's not-so-small flotilla back in Australia.

Compared to an Open 60, *Wild Oats* is narrow, with a BMax of 4.10m (1.5m narrower than *Ecover*). This is probably because she has the benefit of not having been designed to make the Open 60 class' 10deg static inclination test. She has been conceived loosely with IRC (used in Australian events like Hamilton Island) in mind.

Both her rudders are fine with a short cord, but are deep and her forward rudder is only about 1ft shorter drawing around 8.5ft. As her keel strut is simply used to move the bulb around, it can be the smallest size possible.

Under normal circumstances the rudders are set in such a way that the aft one turns conventionally while the forward rudder turns in the opposite direction. Hildebrand says the experience of *Wild Oats* going round corners compared to a single rudder yacht is just the same as a four wheel drive car compared to a two wheel drive one. "Not only does your back come around but your bow goes down quite quickly as well. So it is faster and very direct. Downwind it is very direct - you can poke it into holes where you want..." Otherwise, he says, it doesn't feel unstable, it feels like a normal boat.

But this is only part of the story: The clever part is that the forward rudder can be rotated (using the inner wheel - similar to the trim tab wheel on America's Cup boats) to point to weather when sailing upwind. With both rudders effectively pointing slightly upwind, *Wild Oats* not only points higher, but also crab sideways to weather.

At present Hildebrand says they are logging data via their B&G Hercules system to establish the degree to which the forward rudder benefits them, but as yet they have no sensible results. "There are so many trimming variables - you've got keel angles, rudder angles, etc it is hard to get a set figure where you can say at this angle we should have 10 degrees of rudder, 15 degrees of keel, etc. We obviously have targets which we work towards and we know what on paper we should be doing, but aside from that the feel factor comes into it."

But it certainly works. "You can be sailing alongside and adjust your rudder and have a notable height advantage over the next boat," continues Hildebrand. "That's where we initially noticed it. In the early days we leebowed the maxis on the start line. It was quite exciting... You don't get the feeling of crabbing to windward, but if you are stuck below someone on the start line all of a sudden you are pushing up towards them and you can squeeze them out. You still point fairly high but the concept is you sail pressing on it, so you're not really sailing fat, but in fat mode with the foils doing the work."

Upwind there is also the degree by which they turn the forward rudder, as beyond a certain angle it is creating more drag than lift.

The twin rudders also have crucial interplay with the keel. With the keel swung up to weather, the keel foil loses its conventional role of preventing leeway and creating lift and instead is solely there as a strut to move the bulb around. As a result the rudders take on the traditional role of the keel foil.

On *Wild Oats*, her keel can be canted by up to +/- 40 degrees - in comparison

most Open 60 keels move by around +/-32-35degrees. Like the Open 60 systems, *Wild Oats* has two hydraulic rams to do this, however hers appear to be smaller and both are situated on the port side. The top of the keel is angled to starboard and this arrangement the centre of gravity to be kept low as well as allowing a reasonable amount of standing room above the watertight keel box.

While Open 60s tend to be designed for oceanic races, *Wild Oats* is one of the first big boats with a swing keel to be designed for round the buoys racing and as a result the team have been working long and hard on ways to speed up the keel canting process. They have come up with a system to dump keel (rather than powering it down) so that prior to a tack the keel drops down by gravity, the boat is then tacked and the keel then cranked up by the required amount.

"You can tack not as quick as a normal boat, but obviously a lot quicker than a water ballast programme," says Hildebrand, his owner taking this thoughts a bit further. "Everyone was worried about the safety," says Oatley. "But you've got to do something to improve the stability. Water ballast was becoming the thing. But water ballast is now obsolete in many people's minds."

The two rams work in parallel, but for reasons of safety if one packs up, then the hydraulic circuit is such that the feed to the remaining working ram can be isolated.

Hildebrand says that when they're on the breeze they are normally using full keel above about 12 knots of breeze. Obviously any angle can be used in conditions lower than this and the keel can even be canted to leeward in very light conditions.

The canting keel also has added benefits downwind. "You obviously want the overall boat as light as possible," says Hildebrand. "We are 1.5 tonnes under a conventional weight bulb because we have the righting moment out to the side. "So when you're sailing downwind you are 1.5 tonnes lighter and you aren't having to pull in water ballast."

Keel canting systems are in their infancy at the moment. Hildebrand reckons that *Wild Oats* is just a first generation - faster, more efficient systems are already being planned. For example the helmsman could control the keel during the tack. Further down the road it could be possible for the keel to cant itself automatically with the right data fed from the Hercules in conjunction with heel angle and keel angle sensors.



What now?


The Oatleys have a house in Porto Cervo where they regularly spend part of the year and because of this they have competed in the Sardinia Cup. Unfortunately *Wild Oats* will not be taking part in the Fastnet Race nor in the Rolex Maxi Worlds this year, because she is being shipped back down under to have another crack at Hamilton Island.

The boat is tentatively up for sale, although Bob Oatley hasn't fully decided if he wants to get rid of the boat which has given him so much success and enjoyment. If he did he says he might build something similar, but a big bigger.



Photo: James Boyd/TheDailySail

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