

Tek Kat

Rob Wilson checks out the latest innovation from the catamaran world. Could this be the way forward for cat sailing? Find out what it's like to sail!

Photos: Emily Brown





Tek-Kat claims to be 'the next generation of performance catamaran incorporating the latest innovation in materials, hull design and sail plan. Stepping up from the Olympic Tornado, the Tek-Kat will be the performance race cat of the 21st century'.

The boat was inspired by Jim Mundy in June 2006. Jim thought that there was a gap in the high performance catamaran market for a two man boat aimed at teams with a combined weight around 180kg. So when Mark Bulkeley and I arrived to see 20 knots on the Solent, weighing a mere 155kg between us, we thought that we might have a bit on!

The Tek-Kat definitely is an impressive, extremely modern looking catamaran. Upon first inspection, initial thoughts are 'this is a serious bit of kit!' Carbon is utilised everywhere, the hulls have been left unpainted so that the carbon weave is clearly visible. It looks modern and mean! However on the water it was surprisingly easy to handle. The rotating untapered wing mast made by the French company Hecl is also carbon. The sail plan incorporates a square top main, high aspect jib and either a 'code zero' or asymmetric spinnaker.

Tek-Kat technical

The hulls are constructed from carbon fibre with a nomex core, making the Tek-Kat relatively light weight and very strong. The beams are also made from carbon which yields a huge weight saving compared to more traditional aluminium beams, and in theory should help to create a stiffer platform. Built into the beams is the integral chute which provides additional rigidity into the platform and negates the use for traditional bridle wires. The prototype boat weighs 190kg all-up which is heavier than a Tornado. However when sat next to the Tornado you realise the Tek-Kat is a significantly bigger boat; not only is it 0.9m longer it also has a lot more volume and freeboard. I also get the impression that the Tek-Kat is extremely strong, especially in the hulls and integral chute. The centreboard hit a reef in Aruba at full speed and the hulls survived relatively intact, the board was broken clean in half! The weight of the production boat will be reduced; Jim is aiming for an impressive 160kg. ▶



Top:
Here you can clearly see the angled daggerboard.

Above:
Checking out the fixtures before heading out.

Right:
An 11 metre mast and 6.9 metre hull shows this is not a small cat!



Specification

Boat length - 6.9m
 Beam - 3.05m
 Boat weight - 190kg
 Mast - 11m, 23kg
 Sail area total - 59.4m²
 Main - 25.5m²
 Jib - 5.4m²
 Code zero/Spinnaker - 28.5m²



Far left:
Rigging takes a fair amount of time.

Left:
Getting wet is all part of the fun.

Right:
It is both manageable and fast!

Far right:
The hull gives maximum waterline length to aid upwind performance.

The boat was designed by Clive Everest, designer of the RS600, RS300 and the cutting edge C Class catamaran *Invictus*. The hull outlines look almost like a scaled up modern A-Cat with a slightly flatter bottom and less rocker. The hull is designed to give maximum waterline length to aid upwind performance. The bows are wave piercing. Volume to avoid nose dives comes from the large freeboard in the hulls, which is huge compared to many catamarans. This freeboard should help upwind performance and allow the boat to be driven hard downwind. The boat appears to be relatively low on rocker, helping the boat to achieve high top end speeds.

A number of innovations have been incorporated into the design of the Tek-Kat. Uniquely, the chute is an integral part of the design, acting as a structural part of the boat enabling the forestay to be mounted on the tip of the chute, negating the need for a forestay bridle. The integral chute spans the beams as part of the structure, enabling Tek-Kat to do away with a colphin striker. The hulls are canting at 8°, and the daggerboards at 15° adding lift. The centreboards are effectively gybed by 1° adding lift and helping the

angle of attack for the wave-piercing windward board.

The sail plan with square top mainsail and fully battened high aspect jib provide the horse power. There is the option of a reef for those stormy days or light weight crews. The boat currently comes with a code zero asymmetric but a more traditional asymmetric flying off the end of a fixed pole is currently being developed. The theory behind the code zero is that the boat should be able to achieve faster offwind speeds with a flatter code zero than with a traditional asymmetric.

On the water

With wind from the NW at 15-20 knots and relatively flat water, Mark Bulkeley and I, test pilots for the day, had ideal sailing conditions.

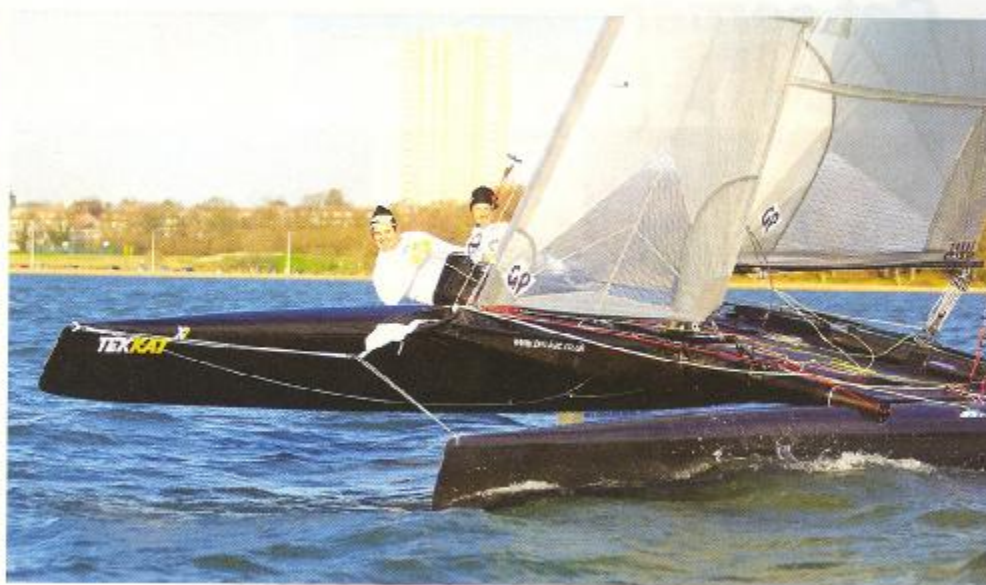
Once on the water, it was obvious straight away, as Jim and the sail maker had warned us that either the mainsail was way too full, or the mast was way too stiff and straight! It was difficult to get a really fair idea of the boat's upwind performance. The main was already booked in for a re-cut, taking some 50mm out of the luff curve. The difficulty for the sail maker is to design a mainsail that performs across the range with such a stiff mast. However despite the sail issues it was still possible to see the incredible potential that this boat's hull design has. In the lighter patches of wind the boat really did pick up and feel like it was tracking. The extra waterline length and hull design made the boat very manageable. When a big gust hits in the F18 or Tornado

the helm and crew have to be quick to respond, whereas this felt much more forgiving almost yacht-like as the power gradually came on. The platform feels extremely stiff between the beams and this can really be felt on the water. There is a very small amount of sideways movement in the hulls in front of the beam. Traditional cats have bridle wires pulling the hulls together when load is going through the forestay, so this movement is damped and hard to see. The Marstrom rudders felt very light on the helm and behaved well, they are straight from a Tornado. The mainsheet loads were also surprisingly light, larger cats often suffer from the loads going through the roof.

Boat handling

In the 15-20 knots wind range the boat handled well, and it was relatively easy to get up and going. The mainsheet traveller is quite short so the main cannot be completely de-powered for high wind bear-aways. I imagine this could provide some exciting moments; extending the traveller track would make the boat more user-friendly.

Lacking the boat was different to other cats I have sailed. The volume and flat rocker profile means the boat goes into the tack very easily. It is more difficult getting the boat off the wind on the new tack, partly because the main was so full, driving the boat back up into the wind. The jib is also relatively small so does not help to drag the bows away. However I'm sure with practice and the right



settings this would be fine. The integral chute was painfully noticed in the tacks, it is right where you plant your knees to flip the tiller extension. At the front of the boat Mark also noticed the chute limited the amount of space for him to get under the boom. Jim assures me that you get used to this!

On the code zero hoist, the tack lines are pulled out to a set mark and cleated on the trampoline. The spinnaker is then hoisted with a cleat mounted on the mast. This works fine, bar the amount of friction getting the spinnaker out of the chute. The test sail we were using had extremely heavy patches and the cloth was bullet proof. With lighter patches and cloth there should be no problems.

Gybing the Tek-Kat was very similar to any asymmetric catamaran in terms of steering through the gybe. However gybing the code zero is very difficult because it is flown so close to the jib luff. There is a large amount of cloth that has to be floated through a very small gap. A lighter cloth would help this problem; an asymmetric on the end of a longer pole would help even more!

Systems

The systems have been well thought out but need refining. The layout of the boat feels very clean and uncluttered. Most of the fittings are Harken. The mainsheet system is low maintenance and copes with the loads well. Jim has avoided wherever possible putting fittings into the beams and hulls. Instead many of them are mounted on the trampoline. This gives a clean layout,

however unless the trampoline is very tight there is always movement which makes cleating lines more difficult. There were a number of other minor issues with purchases and friction that all new boats experience, especially high performance catamarans.

At the top of Southampton Water it was time to put the Tek-Kat through her paces downwind. The bear-away was comfortable in the 15 knot breeze, no sign of the bow going down. After hoisting the code zero we started off quite conservatively, single wiring. The wind was gusting up to 20 knots but the boat felt very manageable as it did upwind. The ride was very smooth, again showing the same characteristics as upwind with the yacht-type behaviour, gradual increases in power. The difference being that we were sailing at around 25 knots! Very soon, as it was so comfortable, showing no signs of nose dives, we decided to heat her up and see what she could do. I joined Mark on the wire to give that extra bit of leverage. The boat responded really well and picked up speed, happier to drive forward rather than heeling in the gusts. Blasting down Southampton Water took no time and although we knew we were travelling extremely fast it all felt very controlled.

Final thoughts

Jim Mundy has taken his dream of building a high performance, innovative catamaran and done something about it. He has managed to get some good backing and a great team together to help design and build the first boat. At roughly £25,000 for a painted boat and £30,000 for the full visible carbon effect boat, a buyer is getting a serious piece of kit! The next step is to sort the sails out and refine the systems - I then think we will really see this boat's true potential on the race track. It certainly has the potential to win line honours in some of the big long distance races such as Texel.

Personally I wasn't a fan of the integral chute, it is a lot of weight to carry (about 30kg) for the advantage of losing the bridle wires and dolphin striker. The platform could easily be engineered to be stiff enough without the integral chute. Perhaps I'm stuck in my ways, but if I had £30,000 sitting around I'd buy a Tek-Kat and remove the integral chute and associated weight. I'd set it up with a more traditional asymmetric chute and pole system like the Tornado, then see what damage she could do! However it is great to see that Jim is thinking outside of the normal and coming up with new ideas. We wish him all the best in the future and will watch eagerly to see how this boat develops. To find out more about the boat visit www.tek-kat.co.uk ▶