

THE SNAPSHOT

The Monthly Newsletter of Project Torpedalo

“Only by setting distant and difficult goals do we truly succeed.”

PROJECT TORPEDALO

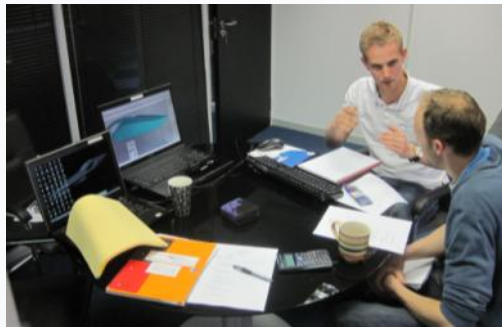
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TWO CNC MACHINES START TO BRING TORPEDALO TO LIFE!

Our two major machining partners, Curvature Group and sister company MonsterCAM, have started making significant progress with the manufacture of the two full-size mould tools from which our boat will be built.



In May, Mark and Mike spent two days at Norco GRP in Poole, signing-off all of the exterior surfaces and agreeing the carbon fibre specification. On the second day, we were joined by composites expert Martin Armstrong from sponsor SP Gurit, who supplemented the structural advice we've received from Tim Searle to help define the exact specification of the carbon layup we need and agree the best way of joining the sections. Getting this specification right means we'll have a strong, stiff boat with reinforcement in the most important areas without making the whole structure too heavy.

With the final design signed-off, the Torpedalo Manufacturing Consortium has swung in to action, complete with a new member. After the design data was sent to Curvature Group and MonsterCAM, they specified the material quantities needed to build the mould tools. New sponsor James Latham plc (more details on page 3) have provided over 60 boards of MDF to build the bases of the moulds, while John Burn Ltd immediately sent orders of M440 high-density foam from which the shape of the boat will be cut.



The arrival of these materials has allowed two huge CNC machines to start their work. Curvature Group are now machining the top deck mould, while MonsterCAM, the largest independently-owned 5-axis CNC machine in the UK, cuts the 8-metre-long hull mould. Both moulds are due to be finished in the next few days.

As soon as the machines have finished their work, the teams at both compa-

nies will hand-finish the moulds before they're moved by road to Norco GRP. The guys at Norco have been busy ordering in the materials they need for the build from our other manufacturing sponsors; resin from Sika and carbon fibre and fibreglass from Hexcel. We've also ordered our custom rudder components from Danish supplier Jefa. The next six weeks will see the creation of what we've been working on for almost two years - and will mean we can start to focus on fundraising. Very, very exciting times ahead for the whole team!

We're exceptionally grateful to all of our Manufacturing Consortium sponsors for their help, and especially to Nick Phelps, Mark Northey and Henry Nicholson-Cole for all they're doing for us.

KIT AND RESOURCE PROCUREMENT COMPLETE

We're delighted to announce that the last remaining pieces of our sponsorship have been found. There'll be more details of the sponsors next month, but with deals finalised for the purchase of our satellite phone and the transportation of the boat to the start line and back from the finish line of the race, everything we need has been secured. All we need to do now is find somewhere to stay in La Gomera before the official race start!

Live Events Update

C6n join Torpedalo as Live Events Partner

We're delighted to announce that Project Torpedalo has a fantastic new promotional partner for our live events programme - new company C6n and their amazing "Hexagodeck". C6n are customers of Norco GRP, our boatbuilder, and we first made contact with director Charlie Hall through Norco. C6n have designed and built an incredible carbon fibre portable structure, which is principally built from large carbon half-hexagonal sections. Their first structure is eight metres wide and comprises two stories, built entirely from carbon fibre. Their structure is a quantum-leap forward in portable building design, being amazingly light (only 750kg) and so easily erectable by a small team in a very short time. It also happens to look absolutely stunning!



Since we first met, Charlie has been very keen to help Torpedalo, and the three-day Cholmondeley Pageant of Power has presented an opportunity that he couldn't resist! Charlie and Mike visited Event Director James Hall (no relation!) last week, and James has kindly agreed to let C6n build the Hexagodeck at Cholmondeley, where it will be the "Torpedalo Tower". The structure will stand next to the powerboat racing lake and offer unrivalled views across the event, including the longest section of the racetrack, the entire lake and the army demonstration area. We'll be serving drinks and canapés on the first floor, while the ground floor will feature our pedalling rig setup for people to see for themselves what pedalling the Torpedalo will be like. More details about our presence at the Pageant next month, but it's shaping up to be one of our headline events which should expose Torpedalo to over 50,000 people!



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Design Debrief

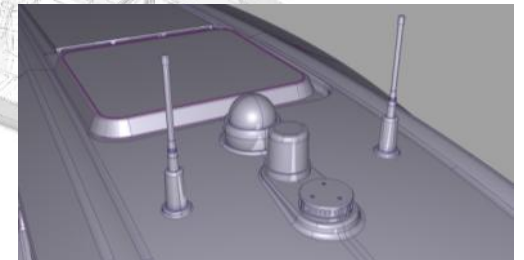
The Finishing Touches

With the boat in manufacture, all of the interior and exterior surfaces have been designed and signed-off. So that our equipment is integrated in to the boat in the best possible way, Mark's designed many small details that will make the Torpedalo more reliable, easier to live in or more efficient. A lot of these details reflect the depth of Mark's engineering ability and also reveal how every aspect of the boat has had to be thought about very carefully. Here are a couple of examples of areas of the boat where clever design makes all the difference!

The boat carries three 70W Sharp solar panels. These have been custom-made by Sharp to fit the boat, but with their standard aluminium frame weigh almost 20kg each. Given that they're at the top of the boat, this weight could cause a serious instability issue. So, Sharp have made our panels without frames, reducing weight to just 7.5kg, and Mark has designed a series of carbon fibre trays to hold them. These trays are very light but incredibly stiff, and also feature a set of longitudinal ribs that will allow seawater to run underneath the tray to cool the panel and draw heat from the cabin beneath. Laser-sintered stainless steel fixings hold the trays to the boat, meaning that we can swap the position of panels should one become damaged or lose efficiency.



Another area requiring a lot of consideration was the positioning of all the various communications accessories that must be fixed to the outside of the boat. VHF and DSC aerials, a GPS antenna, a satellite phone aerial, a race transponder, a navigation light and a video camera all had to be located on the boat in such a way that they didn't interfere with one another in terms of signal transmission or line-of-sight. They also have to be attached to the boat very securely, to survive the impact of large breaking waves. To achieve this, Mark has designed mounting features in to the major surfaces of the boat, where the carbon will be reinforced. The race tracking device has been positioned on the bow, far away from the stern-mounted Raymarine GPS antenna with which it could interfere. Both of these devices are small and low-profile, so won't get in the way if we're on the bow or the roof.



Above the pedalling position is the main cluster of the other equipment. The Lopolight LED navigation light, satellite phone antenna and video camera sit in a line, so as not to cause line-of-sight problems for the navigation light. The camera does not need to see forward, but has an unobstructed view to both sides and completely astern. Either side of this equipment sit the two Shakespeare Vtronix VHF-range antennas - one for the radio and one specifically tuned for DSC.

Sponsor Update

James Latham, Rockmount and CopperCoat

This month has seen us secure even more vital sponsorship deals. James Latham responded incredibly quickly to our request for MDF for the boat mould tools, while Rockmount Northwest have provided our entire medical kit and CopperCoat have agreed to anti-foul our boat.



The moulds from which the boat will be formed are made of hard polyurethane foam. To avoid using a massive amount of (very expensive) material, an armature is made to the rough shape of the mould, to which a layer of foam is then glued. As we neared design sign-off for the boat, the last manufacturing resource for us to secure was a supply of MDF boards, from which the armatures could be constructed. James Latham, a leading importer and distributor of wood-based sheet materials, immediately responded to our call for help, and have donated over 60 MDF boards to allow the mould armatures to be built. Curvature Group and MonsterCAM have already finished constructing the tools using the MDF, allowing machining to proceed straight away. Without such an enthusiastic and fast response from Latham's, the machining of the boat moulds could've been delayed by weeks. Special thanks to Tim Roberts for making this deal happen!



When Mike cycled from Crewe to Le Mans for charity in 2007, team member Louis Warburton secured a comprehensive first aid kit for the trip from local residential care home Rockmount. When Louis heard about Torpedalo, he offered to see if Rockmount would be interested in supporting this project as well - an opportunity that they fortunately took! The list of mandatory medical equipment that we must have on the boat is defined by the race organisers and is three pages long, so to have all of it supplied for free by one company is a huge benefit for us, and one that saves a great deal of money. From several different kinds of antibiotics, to bandages, medications for just about everything and even a neck brace, the Torpedalo now features a comprehensive medical pack. Now we just need to work out how to fit it all in to the boat!



All boats suffer from the problem of hull-fouling - marine plants and animals growing on the underwater portion of the hull. The weeds and barnacles that attached themselves to the boat cause a significant rise in the hydrodynamic drag, which isn't a huge problem if you have a 300bhp engine but a significant issue if all you have to power the boat is two pairs of legs! While such growth can be removed with a scraper, mid-Atlantic this is a difficult and arduous process. It's far better to try and stop marine life attaching itself in the first place, which traditionally has been through using anti-fouling paint. However, we're in the extremely fortunate position to now be supported by CopperCoat, who will spray the hull with an epoxy resin containing copper powder. This will form a thin coating of metallic copper on the hull below

the waterline, completely preventing marine life from attaching themselves to the boat. We must keep our boat as efficient through the water as possible, and CopperCoat will undoubtedly play a huge role.

Support Us

Please make a donation!

First and foremost, Project Torpedalo is fundraising project for two amazing charities - the Motor Neurone Disease Association and Make-A-Wish Foundation® UK. Please help us raise as much money as possible by clicking on the button to the right and donating. The donation system is provided by Barclaycard and is 100% secure, so you can give with confidence. Thanks to our amazing corporate sponsors, every single penny donated by the public will go to our charities. Please help!



Contact Us

We'd love to hear from you

If you'd like to know more about the project, think you might be able to help or know someone that can, please do get in touch!

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PROJECT TORPEDALO

THE PEDAL-POWERED TRANS-ATLANTIC CHARITY CHALLENGE

Fundraising in aid of:



Our thanks go to everyone who has supported the project so far. We couldn't be doing it without you!

