



Hart Marine

Advanced composites and design revolutions snag the award



It is official: Australia's best pilot boats are built on Victoria's Mornington Peninsula by Mal Hart and his company Hart Marine.

Mr Hart's foray into pilot boats began with a disaster: in a particularly horrendous sea at the entrance to Port Phillip, a pilot boat capsized, resulting in the tragic loss of vessel and crew.

Following the tragedy, Hart received a commission from Victoria's Port Phillip Sea Pilots (PPSP). In the wake of the accident, PPSP had undertaken a worldwide design assessment to uncover the ultimate pilot boat design, to ensure the same disaster did not befall Port Phillip twice.

It was clear that any new vessels had to offer exceptional seaworthiness and safety features due to the life-threateningly appalling sea conditions that can be encountered at the outer edge of Port Phillip and in Bass Strait. So potentially appalling, in fact, that PPSP often also operate as the de facto heavy weather sea rescue service.

PPSP's research was for both the best pilot boat design and the best yard to carry out the new building. They concluded that the "ORC Pilot Boat" family from the French naval architects Pantocarene had the best all-round design, and that Hart Marine should build it, utilising their established expertise in advanced carbon composite materials.

Upon completion, Hart Marine's new ORC craft were an exponential evolution of the pilot boat concept. They defied convention. Far from a standard pilot boat

with self-righting capability, every design element of the vessel came under the naval architects' scrutiny. The shape and line of the hull, together with an integrated fendering system, helps minimise the risk of the "venturi effect", a phenomenon that can 'suck' pilot boat hulls to the side of a large ship at speed.

In the case of crew comfort, suspension seats were combined with the wheelhouse unit being carried on specialised vibration isolation mounts – a feature usually far more common in fast ferries. When implemented, crew comfort was vastly improved.

The most visible of the vessel's non-traditional features, the Pantocrene beak bow, was the result of years of calculations, tank testing and sea trials. Designed for wave piercing in a head sea and to give early gaining of buoyancy when the bow dips in a following sea, the bow shape inhibits any broaching tendencies.

Coupled with a wider-than-typical waterline for enhanced stability and a soft landing to "improve overall asset protection", the finished craft – the 14.4 metre 'Ranger' and the 18.1 metre 'Akuna IV' – represented a revolution.

The success of PPSP's pilot boats quickly attracted the attention of other operators, with Western Australia's Albany Port Authority placing an order for a 15.6 metre vessel. Svitzer Australia, the company providing marine services at Chevron's flagship Gorgon gas project at Barrow Island, also became a Hart Marine customer.

With world-leading environmental safeguards that include turtle-friendly working lights and electric tugs, Chevron was calling for the best in all areas. Svitzer proposed a Hart Marine pilot vessel and Chevron approved. The resulting vessel is also set to be the centrepiece of a groundbreaking training project, with local indigenous people to be recruited and trained to operate Svitzer's tugs and pilot vessel.

Established 30 years ago by Mr Hart and initially focusing on racing yachts and leisure craft, by the time Hart Marine shifted focus into the building of commercial vessels there were few peers in design, fabrication and construction using advanced carbon composites.

Currently employing 35 technicians based out at the company's high tech Mornington yard, the company is continuing down a path of steady growth and innovation.

Mr Hart's sweeping success with pilot boat concepts demonstrates the value of collaboration and innovation. Combining international expertise with local experience, Hart Marine demonstrates the ability for local yards to deliver world's best practice whilst proudly playing a key part in Australia's vital manufacturing industry.

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