

## Yanmar Powers Rapid Response Vessel

Auckland Airport is a busy intercontinental hub, located on the shore of Manukau Harbour. With a constant stream of aircraft approaching and departing across the water, a new Rapid Response Vessel powered by dual Yanmar 6LPA-STP2 engines has been commissioned.



Designed by one of New Zealand's foremost designers, Scott Robson, the design brief for this vessel was very specific. It needed to be fast, operate across the shallow waters of Manukau Harbour, handle the nasty chop experienced on the harbour and of course have the capability to rescue air crash survivors from the water.

The design which Scott Robson settled upon is an all alloy hull measuring 10.75m loa with a beam of 2.8m. The draft at rest is an exceptionally shallow 0.6m. The shallow draft has been achieved through the use of dual Hamilton 213 jet drives mated to Yanmar 6LPA-STP2 engines, combined with a low deadrise hull form.



Above: Dual Yanmar 6LPA-STP2

In the event of an aircraft ditching into Manukau Harbour, the new Rapid Response Vessel is tasked with being the first boat to arrive at the scene. Operated by a crew of two plus an observer, the Rapid Response Vessel is required to pinpoint the location of the wreckage and rescue survivors from the water.



The Rapid Response Vessel has a drop down boarding ladder mounted at the bow and the hull has been designed so that people can also be pulled over the side.

In situations where there are more people in the water than can be brought aboard the Rapid Response Vessel, life rafts carried on board can also be deployed to assist those in the water. The second tier of support is a large purpose designed catamaran powered by dual Yanmar 6LY3 engines. Once directed to the scene of an incident, the catamaran is tasked to act as a command centre and also take on board a larger number of survivors.



*Above: Scott Robson*

While the tender specification was explicit in terms of design and performance, the selection of engines was left to the designer, Scott Robson. He had no hesitation in opting for a pair of Yanmar 6LPA-STP2 marine diesel engines.

Yanmar's sophisticated 6LPA-STP2 engine is a true hi-performance and well proven package. It is a direct injected, mechanical governor equipped turbocharged and intercooled straight 6 cylinder engine pumping out 315mhp at 3800 rpm at the flywheel. The 4 valve per cylinder engine boasts a 4.2 litre displacement for sustained torque through the mid rev range while still offering an impressive power to weight advantage. The dry weight is only 408kgs without the transmission.

According to Scott Robson, Yanmar was the obvious engine choice because it met all the key criteria for this application. Just as important in the build process, was the choice of Christchurch boat builder, Icon Custom Boats, who delivered a first rate product.

"The Yanmar 6LPA-STP2 is a winner in terms of weight, performance and reliability." Scott Robson said.

"We also needed to match the engines to the size of the hull, the required performance and a tight budget. The Yanmar 6LPA-STP2 engines proved to be absolutely ideal."

"The performance of the Rapid Response Vessel has exceeded all of our expectations. With 700 litres of fuel in the tanks and the designed payload of 1000kgs on board, the vessel achieves a top speed of 39 knots at 3900 rpm. The handling and ride are both excellent."

While the Yanmar engines deliver an impressive top end speed, they also hold the hull on the plane at just 12 knots. It is the balanced combination of the jet-specific hull design, Yanmar engines and Hamilton Jet pumps all working in harmony, which makes this vessel so successful.

The Rapid Response Vessel is built on a conventional frame and stringer system with the addition of pressed, internal panels. The hull is fabricated from 8mm plate aluminium, with 4mm material used on the sides and 3mm on the tubes. The hull was built by Christchurch boat builder Icon Custom Boats.

Power Equipment is the exclusive and authorised Australian, New Zealand, Papua New Guinea and South Pacific Distributor of Yanmar Marine and Industrial diesel engines, JCB DieselMax, MASE diesel marine generators, Gori high quality folding sailboat propellers, PSS Shaft Seals and Northern Lights Gen Sets.

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