

The Explore Group Powers Ahead With Yanmar

Brisbane based Aluminium Marine is widely regarded as one of Australia's most respected shipyards, designing and manufacturing aluminium catamarans for the passenger ferry and eco-tourism markets. Their latest launching is a 250 seat ferry, powered by a pair of 670kW Yanmar 6AY-WGT commercial marine diesel engines.



When the keel was laid for this vessel, Aluminium Marine did not have a signed customer for the hull. The New Zealand based Explore Group, a repeat Yanmar customer, quickly signed on with Aluminium Marine when they decided to expand their operations into the ferry market in NZ and required a new vessel on a short lead time to commence operations in Auckland before Christmas 2014.

The design for this new cat at Aluminium Marine was again supplied by Sydney based INCAT Crowther Designs and was based on the highly successful Spirit of Queenstown which was powered by the 478kW Yanmar 6HY-WET engine series, and now in operation for over 12 months. To meet Australian maritime regulations, the hull was being built to a length overall of 25m for a passenger load of 150 people.



However, when the Explore Group signed on, the design parameters changed. New Zealand regulations permitted the hull to be longer and the passenger capacity was also increased to 250 people. As a result, the hull was lengthened in the aft area of the sponsons, providing a longer and well balanced hull design. The new boat was named Explore D6.

According to Jack Louwerse, Project Manager and Engineer at Aluminium Marine, the Explore D6 is a very efficient hull design.

“This hull is a ‘displaning’ design which is noted for an incredibly smooth ride and unsurpassed efficiency,” Jack Louwerse said.

A ‘displaning’ hull shape combines the best attributes of a displacement and semi-planing hull. Displacement speeds offer low fuel consumption and longer range, while semi-planing hulls are noted for higher performance. A ‘displaning’ hull delivers both.

“The vertical stems are more efficient than a raked entry as the vertical entry provides greater waterline length,” Jack Louwerse said. “The vertical stems also provide greater hull buoyancy for’ard.”

Contributing significantly to the success of the Explore D6 is the choice of Yanmar 6AY-WGT engines, one mounted aft in each sponson. The power train incorporates Yanmar YXH-240 transmissions with a 2.27:1 reduction ratio, which feed the power via conventional shafts fitted with five blade counter-rotating props.



The selection of the Yanmar 6AY-WGT engines was one jointly made by Aluminium Marine and the customer, the Explore Group.

“The Yanmar 6AY-WGT is a very durable, powerful engine,” Jack Louwerse said.

“As far as we are concerned as catamaran designers and builders, Yanmar is the only marine engine to specify as they are purpose designed for the marine environment. We looked over other brands and all we see are converted truck engines.”

Gaining the approval from the Explore Group to install the Yanmar engines was a mere formality. With another vessel in their fleet recently repowered with the Yanmar 6AY-WGT engine, the customer has already had a fair indication of the strong performance, low fuel usage and high reliability that other ferry owners have come to enjoy from these purpose built heavy duty marine engines.

The Yanmar 6AY-WGT is a six in-line cylinder engine with a displacement of 20.39 litres and a rated power output of 911 mhp (670kw) at 1,938 rpm.

The versatile 6AY Series is extensively used in many applications including heavy displacement work boats but also in many high speed applications such as passenger ferries, patrol craft and cray fishing boats.

Sea trials of the Yanmar powered Explore D6 have delivered impressive performance data. At wide open throttle the engines rev to 1970 RPM with the vessel recording a top speed of 29 knots. This was achieved with full fuel tanks of 4000 litres and a simulated passenger load of 100 people.

“This is a very slippery, efficient hull design” said Jack Louwerse.

“The Explore D6 weighs in at 53 tonnes light ship, but with the addition of 250 passengers an additional 20 tonnes is added to the total weight. Fully loaded we expect the hull will still achieve 26 knots.”

The Explore Group operates a fleet of ferries, charter vessels and former Americas Cup yachts across both the New Zealand and Australian markets. The confidence of the Explore Group in both Aluminium Marine and Yanmar is unquestioned.

Relevant web links:

Power Equipment

www.powerequipment.com.au

Yanmar 6AY-WGT

<http://www.powerequipment.com.au/products/sailing-engines/commercial-engines/6ay-series-659-911mhp/>

Aluminium Marine

<http://www.aluminiummarine.com.au/>

Explore Group

<http://www.exploregroup.com.au/en/australia/>

Incat Crowther Designs

<http://www.incatcrowther.com>

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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