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First of five environmentally friendly fast ferries from Aluminium Boats Australia



Transit Systems Australia (TSA), the operators of Bay Island Ferries in Moreton Bay, Brisbane, have taken delivery of their latest vessel, an environmentally friendly catamaran 'Capricornian Dancer'.

Built by Aluminium Boats Australia (ABA), the Enviro-Cat vessel is the first of five sister vessels destined for operation in Gladstone Harbour in Queensland. TSA have won major transport contracts for the liquefied natural gas (LNG) project on Curtis Island, some six nautical miles off the town of Gladstone. TSA will provide transport for up to 3,000 construction workers daily on high-speed ferries, plus truck and heavy-vehicle transfers via three 80-metre RoPax vessels also under construction.

'Capricornian Dancer' is the fourth vessel designed by Sydney's One2three Naval Architects for TSA operations. The hull form is based on the 24-metre low-wash ferries hull from ABA and One2three, which is the only Australian hull to be approved by the Environment Protection Authority (EPA) for use in sensitive areas. As well as being low wash and low draught, the hull package features waterjet drives, no appendages and a rounded bow stem, allowing the vessel to operate in shallow sea-grass bed mammal feeding areas.

With their EPA rating, the 24-metre vessels are permitted to run at ferry service speeds in the Moreton Bay island waterways, where other traffic is restricted to speeds of less than six knots. Given the environmental concerns regarding traffic in Gladstone Harbour associated with rapid infrastructure development, One2three adapted the 24-metre design, retaining the environmental features. 'Capricornian Dancer' measures 37 metres in length overall, with a beam of 10.25 metres and a draught of 1.3 metres.

'Capricornian Dancer' is also the first commercial vessel in Australia to be fitted with the new Rolls Royce 40A3 series waterjet, providing increased thrust and better cavitation characteristics.

The vessel is powered by quadruple Scania Tier 2 DI12-69M engines, each rated at 499kW at 2,275rpm, driving through ZF-500 gearboxes and composite single-span lightweight shafts. This set-up delivered a maximum speed in trials of 36 knots, though the boat's operating speed will be restricted to 24 knots.

The Enviro-Cat vessel boasts lower fuel use per passenger than a small four-cylinder car. The hull and machinery package was specifically developed to protect the maritime environment in the region of Curtis Island, with a low wake, low emissions and ultra-low fuel consumption.

The hull is engineered with a rounded profile to create a minimal impact zone, and a very shallow draught with no keel, external intake objects or propeller protrusions. Jet intakes are guarded to prevent intake of marine mammals, while the jets throw out a minimal wake pattern for the required thrust. The Enviro-Cat also offers impressive manoeuvrability in all conditions. With the combination of hull shape and jet propulsion, ABA has achieved a dramatically reduced draught at approximately 1.3 metres, compared with over two metres for a similar vessel with propellers – a critical factor in what will be a predominantly shallow-water operating environment.

'Capricornian Dancer' produces no water-borne emissions other than cooling water, ensuring a pollution-free system with zero overboard liquid discharges. The latest European-standard exhaust systems are utilised to minimise emissions. All onboard sewerage systems are marine compliant and are pumped out to land-based disposal units.

Two engines can be shut down when the vessel is not heavily loaded or operating in harbour. In addition to the Kamewa jet units, the vessel is equipped with a Humphree active ride control system, a computer-controlled hydraulically activated system designed to provide minimal vessel motion and optimum vessel trim, thus reducing wake at all stages of the vessel's progress and lowering fuel consumption.

The wheelhouse is situated high and forward to provide maximum visibility. A comprehensive electronics package provided by Ultimate Marine Power comprises high-speed radar and other navigation equipment from Furuno, a Simrad autopilot and night vision capabilities from FLIR. The vessel has covered accommodation for up to 400 passengers and is designed to be operated by a crew of five.

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Capricornian Dancer



'Capricornian Dancer'

SPECIFICATIONS

- Type of vessel: High-speed catamaran ferry
- In survey to: QLD 1D,1C
- Home port: Gladstone, Queensland
- Owner: Transit Systems, Queensland
- Designer: One2Three Naval Architects, New South Wales
- Builder: Aluminium Boats Australia, Queensland
- Construction material: Aluminium
- Length overall: 37.08 metres
- Length waterline: 33.35 metres
- Length bp: 34.9 metres
- Beam: 10.25 metres
- Draught: 1.3 metres
- Depth: 2.8 metres
- Tonnages: 331GRT; 135NRT; 41DWT
- Main engines: 4x Scania Di12-69M; each 499kW
- Gearboxes: 4 x ZF 500Sc
- Propulsion: Rolls-Royce Kamewa 40A3 water-jets
- Auxiliary engine: Kohler 50EF
- Generator: Kohler 50EF
- Maximum speed: 36 knots (lightship)
- Cruising speed: 24 knots (full load)
- Range: 420nm
- Electronics supplied by: Ultimate Marine Power
- Radar: Furuno
- Depth sounder: Furuno
- Radio: Icom
- Sonar: Furuno
- Autopilot: Simrad
- GMDSS: Furuno
- GPS: Furuno
- Plotters: Furuno
- AIS: Furuno
- Audio visual system: Ultimate Marine Custom
- Winches: Muir FD150
- Paints/coatings: Planet Wrap ORCA
- Liferaft: RFD
- Rescue boat: Non-Solas rescue boat
- Fuel capacity: 6,000 litres
- Fuel consumption: 320 litres/hr @ 24 knots (fully loaded)
- Freshwater capacity: 1,000 litres
- Crew: 5
- Passengers: 400 internal

