

White Dolphin II



By MIKE BROWN

Fast Craft International have delivered a 27 metre catamaran ferry to Western Australian ferry operators, Boat Torque Cruises, which offers the right mix of performance and economy for a highly competitive short haul route.

'White Dolphin II', from the board of Gavin Mair using the Hullform package, carries 310 passengers at a continuous 29 knots, for a fuel consumption less than the 230 litres an hour predicted for the contract speed of 27 knots. And this on a vessel originally designed for 22 knots on engines of less than half the bulk and weight.

The original design used a pair of MTU 183 V12s. Rather than taking the obvious powering-up choice of MTU 396s, the owners opted for Wärtsilä UD23 V12s rated at 970 kW at 1860 RPM. The savings appear significant. Prime cost was around 60% cheaper, spare prices are down too – the owner quoted a replacement turbocharger at 17% of the cost of the alternative; top-end overhauls are about double the intervals at 25,000 hours.

Naturally, there is a penalty. Weight is up, and the engine rooms have little beam to spare. This gives the engineer tight space for service work, but the amount of work needed is down. Oil changes are called for, only at 350 hour intervals, or less on analysis. And there is no need to add oil between changes, which is a boon considering the difficulties in storing any quantity of the stuff.

'White Dolphin II' carries her passengers in saloons on two decks, with a small outdoor area at the after end of the upper deck – a tradition for ferries on her route between Perth and Rottnest Island. The compartments are heavily air conditioned by units which epitomise the vessel's no-nonsense approach to engineering: they are off-the-shelf domestic units modified for the job rather than purpose built – and more expensive – marine units. The owner's intent is to lift out and replace rather than lose earning time by repairing in place. The units' origins give them the bonus of reverse cycle operation.

'White Dolphin II' has its sizeable electricity needs met by two 56kVA Onan-

Cummins gensets. Besides the air conditioners, she has demand from the hydraulics of the ride control system, and from the all-electric bilge pumping system. Each compartment has its individual electric pump, or in most cases pair of pumps, capable of being powered by the genset from either hull. The fire pump can be backed up by connection to the engine room bilges.

As befits a tourist ferry, visibility from the saloons is first class. Glazing is a continuous band of flush mounted glass carried around the front of the main deck saloon. On that deck, there is no obstacle to forward vision for the full length of the compartment.

The upper deck saloon has a snack bar forward, backing onto the rear of the wheelhouse. The main passengers have access to the bar via two 2-lane stairwells aft, which demount to allow removal of the main engines.

The wheelhouse has the increasingly rare accessory of a wheel, or rather three wheels. Instead of mounting electric remote controls on open wings, 'White Dolphin II' has opted for duplicate wheel, gear and throttle at wing stations within the wheelhouse. Reducing maintenance costs was the main motive, but keeping the control method consistent between all stations is a bonus.

Choosing propeller drive instead of waterjets was only partly due to maintenance considerations, although these did enter Boat Torque's calculations. At the service speed of 29 knots, conventional wisdom says that propellers probably have the edge in efficiency anyway. They have other major advantages on 'White Dolphin II's' route. Ribbon weed causes continual blocking of jets, and most masters prefer the propellers' manoeuvrability for berthing ferries against the strong local sea breezes.

The down side is increased draught, which Gavin Mair went a fair way towards negating

by mounting the propellers in semi tunnels; a cure which gave the bonus of increased prop efficiency.

Passengers on 'White Dolphin II's' route can carry large amounts of baggage. This is handled in wheeled cages, loaded onto the after main deck by on-board hydraulic crane, and contained within two sets of tracks.

Boat Torque have been Australian pioneers in improving ferry passenger safety. Although her survey calls for only 50% life raft capacity, she has 100% capacity, and design for exceptionally fast internal movement of passengers. Company policy also dictated more extensive structural fire protection than called for by Bureau Veritas.

Details: Gavin Mair Marine Design, WA. PH: +61 9 437 1319. FX: +61 9 410 2687

'White Dolphin II' SPECIFICATIONS

Vessel type:	Fast ferry
Construction:	Aluminium
Survey:	Bureau Veritas
Designer:	Gavin Mair
Owner:	Boat Torque Cruises
Home Port:	Fremantle
Builder:	Fast Craft International
LOA:	27.0 metres
Beam:	9.0 metres
Draught:	1.65 metres
Main Engines:	2x Wärtsilä UD23; 970kW @ 1860rpm
Auxiliaries:	2x Cummins-Onan @ 56KVA
Range:	300nm+
Speed, continuous, full load:	29 knots
Passengers:	310
Radar:	Furuno
Sounder:	Furuno FCV-581
GPS:	Furuno GP-50
Radios:	Furuno FS_1550 HF GME GX-558A VHF