

Something special in a very fast dive boat

By MIKE BROWN

Kirby Marine's latest one-off has been built to the order of a private buyer in Dubai. If you ignore the immaculate fairing and paintwork, and such fittings as mirror-finished stainless steel anchors, what you see could easily be a top of the market dive charter boat.

There are not too many charter boats in the 53 knot range, or using as much engineering sophistication, but the single-minded thinking involved and the clever solutions achieved, are well worthy of study.

The owner is a diving enthusiast with an interest in collecting aquarium specimens. Everything in the 16.55 metre vessel is subservient to the task, and is geared to attaining maximum diving time and productivity. A simple example of this is the ROV carried for preliminary dive site examination.

Space above the main deck has been shared into three areas: a basic saloon forward, diving activities in what is effectively a well deck, and a raised deck in the after half for the control station and most of the non-diving leisure.

The well deck is close to Nirvana for a diver. The big attraction is the means for entering the water: bulwark doors, hinged horizontally and lowered hydraulically, have steps within them.

Under the deck, and there is a lot of volume here, are the live tank for specimens and the vast icebox. There are also some serious pumping arrangements.

On the same level as this deck is a doorway into the forecabin accommodation. It is the only air-conditioned part of the vessel, and is clearly not intended as a major entertaining area. Toilet, lounge and basic food preparation only are the orders of the day.

The raised aft deck has a control station using a grand version of the RIB-style centre console. The whole deck is shaded by hard top, and is surrounded by

upholstered benches. These are for the use of returning divers who get back aboard at the transom via an hydraulically lowered extension of the swim platform.

Gavin Mair was entrusted with the design. 'Discoverer' uses a trihull form Gavin has developed through many refinements, and dubbed by him as an Air Rider. Marine Kits (Australia), a subsidiary of Gavin's design company, sold the vessel as a pre-cut package. The aluminium for its construction was completely pre-cut using Tubemakers Aluminium's facilities. This assisted the building program for the complex hull shape by removing the lofting and frame material usage decisions from the shop floor.

As the Air Rider name suggests, an aim of the design is to improve ride, and generate lift and reduce drag, using the air rammed into the tapering tunnels. With a full displacement of around 18 tonnes and a total power of 2,280hp, the drag reduction seems to have worked.

The Sea Fury surface drives deliver the power of the twin V12 MTU diesels very smoothly. Set the throttles to 1,800rpm and, with gradually increasing acceleration, 'Discoverer' builds up speed without the revs varying. This is true all the way to 38 knots. At anywhere above about 18 knots, further throttle opening gives fierce acceleration.

Rob Kirby likes the simplicity of the Sea Fury system. Its fixed shafts avoid the complication of constant velocity joints used in systems incorporating trim and steering functions. To avoid the traditionally poor

performance of surface drives in reverse, the system benefits from a 45 degree transom to give better water flow.

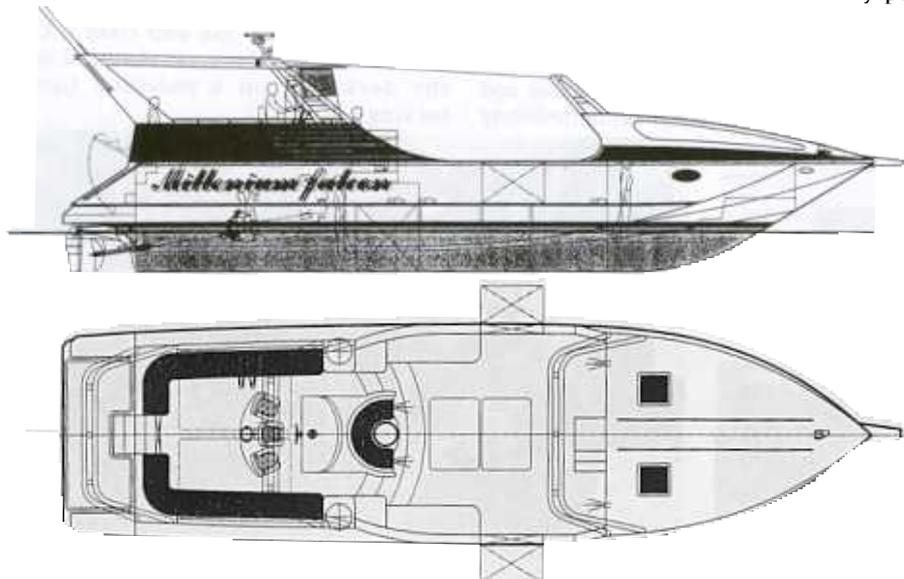
Like all surface systems, the Sea Fury needs a lot of air or gas to be fed onto the water ahead of the propeller. Sea Fury provide two means of achieving this. The exhaust of one bank of cylinders on each engine exits through a duct in the mounting directly ahead of the propeller, and more air is fed through a venturi tube from the atmosphere. Kirby Marine has augmented this by connecting the venturi to a tube exhausting air from the engine room.

The average engine room requires the engine to suck air, where this one simply asks it to open its mouth. A huge pair of fans virtually pressurise the engine room and provide, in Rob Kirby's opinion, the factor which will ensure reasonable life for the main engines.

The engine room is a quite small and busy space. Besides the two main engines and the fans, it contains a genset, air conditioning plant, a desalinator and a forest of hydraulics. The prop shafts are not direct coupled to the gearboxes. Intervening thrust bearings and rubber couplings isolate thrust and vibration.

Kirby Marine specialises in prefabrication of components for large ferries. The high speed craft they have produced over the years have been virtually treats for the Kirby shipwrights, who have treated them as show pieces. The standards and craftsmanship applied to 'Discoverer' make her an instant collector's item.

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'Discoverer' SPECIFICATIONS

Type of vessel: Leisure dive boat

Designer: Gavin Mair Marine Design

Builder: Kirby Marine

Construction material: Aluminium

Length overall: 16.55 metres

Beam: 4.5 metres

Main engines: 2 x MTU 12V 183;
1,140hp each

Gearboxes: 2 x ZF BW165; 1.55:1

Surface drives: Sea Fury

Speed: 53 knots

Fuel: 2,400 litres

Fresh water: 400 litres