



Volvo and Mercruiser Head to Head

HUMBER 6.3 OCEAN PRO
Featuring the Mercruiser 1.7L DTI
& Volvo Penta 130/SX

With over forty-five years of inflatable boat building under its belt, Humber Inflatables know what they're talking about when it comes to building RIBs. Frank Roffee, the proprietor and founder is also an experienced diver and has been building dive RIBs for more years than he cares to be remembered! With a healthy enthusiasm for diving and a passion for RIB construction, Humber is a company that has undoubtedly benefited from

the many years of experience assembled by its key personnel.

The 6.3 Ocean Pro has been the staple diet for many a hungry diver. Furthermore, Humber were the first company in the UK to install the Mercruiser 1.7 into a RIB and have supplied a large number of boats featuring this inboard - proving that this combination is a tried, tested and much loved piece of kit.

Recently Humber have been in the unique position of producing two purpose built identical

craft, with the sole intention of undertaking accurate comparisons of the different power plants. Andrew Roffee, the company's Managing Director, planned and executed the project with the approval of E P Barrus and Volvo, who prior to the testing sent representatives to check and approve each installation. All data and testing was recorded as accurately and as precisely as possible to ensure this special test of the Mercruiser 1.7 D-Tronic 120hp and the new Volvo

D3 - 130/sx represented a fair evaluation of the differences between the two engines as installed on the two Humber 6.3m Ocean Pro's.

To look fairly at each power plant, both RIBs had to essentially 'jump through the same hoops'. Both were filled to the brim with fuel ashore whilst their angle fore to aft was carefully recorded and checked with a spirit level to ensure the balance and fuel load of each was identical. The two RIBs were then weighed, the Mercruiser

PLEASE NOTE:

All figures in this article relate only to the engines in conjunction with the 6.3 Ocean Pro and bear no relation to any other craft or hull type.

hitting the scales at 1245kg and the Volvo at 1295kg.

The engines, although similar in horsepower, differ greatly. The Mercruiser is a four cylinder 120hp whilst the Volvo is a five cylinder 130hp. There is a basic engine difference in weight also with the Mercruiser plus drive, (but excluding the prop) weighing 296kg, and the Volvo being slightly heavier at 325kg.

After the fuelling ritual, the craft were launched by hydraulic crane from Humber's private wharf into the river Hull. First job on the list was to analyse fuel consumption as the two craft ran in tandem for one hour with two crew aboard each boat. Speeds and rpm were duly monitored throughout this initial phase, although an rpm of 4000 was selected as the optimum running speed during this trial.

To determine efficiency, the

RIBs were driven back to the yard, winched out and reset by spirit level to an identical even keel once again. Fuel was then added to each craft in turn, litre by litre, until the 6.3s were restored full to the brim and their fuel quantities recorded a second time.

After measuring the fuel, it was found that in the settled sea conditions, the Mercruiser had used 13 litres whereas the Volvo had consumed 17 litres. Though the Volvo had not fared quite as well as the Mercruiser, it was clear that both engines came in with healthy fuel savings when compared to equally sized outboard motors.

The continuing trial involved establishing the time taken for each craft to get on the plane and further timed performance measurements carried out at speeds between 0-20 knots and 0-30 knots. Top speed was not set as a time trial. During this process, each RIB would be put through its paces fully fuelled, with three crew and a light to medium load that equated to a typical leisure payload. Several of the guys at Humber secretly felt they could predict the outcome of the Mercruiser due to their long association with the engine. But as the evaluations drew on through the day, quite a few eyebrows began to be raised over the unexpected results that the head-to-head involving the 'new-boy', ie the Volvo, was producing.

Armed with stopclock and Garmin GPS, both craft carried out identical runs both against and with the tide. Times were then recorded each way and averages etc drawn. (box below).

	MERCURISER	VOLVO
0 - plane	8 seconds.	6 seconds.
0 - 20	11.5 secs	7.5 secs
0 - 30	12.75 secs	16.6 secs
Top speed	36.4 with tide. 33.5 into tide.	35.5 with tide. 32.5 into tide.
Average	34.95 knots	34 knots.



Pic: Mercruiser D1.7L DTI Inboard.



Pic: Mercruiser prop



Pic: Volvo penta prop

As you can appreciate, one's choice of propeller is crucial and depending what is opted for, this vital component will have a large bearing on performance - not only as regards top speed, but also on acceleration as well. It was decided unanimously that the props chosen for each power-plant should be the best suited 'all round' prop for each particular engine. The test began therefore using only 'standard' propellers such as those that are issued with an engine at the point of purchase. Hence, the Mercruiser spun a stock three bladed 23 inch pitch and the Volvo a 19 inch three blader.

It was clear that the Mercruiser took longer to 'wind up' or get going initially. Nevertheless, when it did kick in, it did so very quickly - beating the Volvo on the timed run. This was a surprise to some for the Volvo is a slightly heavier engine.

The Volvo features an electronic management system that includes an electronic throttle

	MERCURISER	VOLVO
Onto plane 0-20	10.75 sec 13.4 sec	8.5 sec 9 sec

The naught to thirty trials proved to take too long into the strengthening tide, so figures to thirty knots were recorded with the tide and a time trial to twenty five knots into the tide was taken instead.

Once all the times had been taken, each craft was taken on a prolonged run both with and against the tide to find her top speeds. Here we saw the Volvo doing well again - pulling out in the lead. (see box over page)



Pic: Volvo Penta - D3-130 Inboard.

system coupled to a mechanical throttle shift on the console. This arrangement allows traditional gear selection and throttle advance with the flexibility of remote mounting. All such technology. I was assured by Tony Ward of Volvo, is waterproof - an important factor on an open powerboat such as a RIB.

Thanks to the electronic shift/throttle and its extra cylinder, the Volvo is a very smooth operator. The engine really does purr whilst the transmission remains silky and the initial response from zero to full power is great. Although the Mercruiser is a superb unit, I have to say, next to the Volvo, it did sound rather 'agricultural' and certainly not as smooth in comparison.

The next sets of trials were designed to simulate the boat being loaded with eight fully kitted divers. A total 790 kg was therefore duly loaded into the RIBs, which when added to the two test crew, reflected pretty well a typical diver's load. I think we all thought that the next set of figures would confirm what most were suspecting - that an extra cylinder and another seven hundred cc would start pushing the Volvo ahead - and as you'll see, our predictions proved correct. (box below).