

**Lakeside Marine Pty Ltd Comments to Australia DEWHA
Regarding Consultation Regulation Impact Statement for
Reducing Emissions from Non-Road Spark Ignition Engines
and Equipment**

**Submitted by Lakeside Marine Pty Ltd
Michael Goddard
Director**

July 27, 2010

Lakeside Marine Pty Limited (Lakeside) is an Australian owned family company. Lakeside is the Sole and Exclusive Distributor of Tohatsu Brand Outboard engines in Australia (Since 1987), New Zealand and the Pacific Region. Lakeside is located on the NSW Central Coast, which is the exclusive point of all Import, Distribution and Exports for overseas Markets.

Tohatsu Outboard Motors cover the full range of Technology on offer in the Outboard Engine Market including 2-Stroke Carburetor, 2-Stroke DFI and 4-Stroke Models. The Australian Tohatsu Outboard Dealer Network incorporates 106 Businesses / Companies, employs some 280 people with annual turnover of above 40 Million Dollars.

Lakeside supports DEWHA's investigation to reduce emissions from Non-road Spark Ignition Engines. Our company and the Tohatsu Group recognise that preservation of the environment is a global responsibility, and believe that a social contribution is one of the most significant requirements for a company to ensure long term sustainability.

It is recognised by the Regulation Impact Statement (RIS) that marine engines and particularly Outboard Marine Engines are a small contributor to Total CO and VOC Emission Levels in Australia, but it is also recognised that we must all strive towards global harmonization of regulations, standards, and requirements.

It should also be understood that any regulation without proper or formal lead-in periods will have adverse effects on the Australian Marine market, the Recreational and Commercial Boater, Dealers, Distributors, Manufacturers, Boat Manufacturers and the unique needs of some customers in Australia.

To this end, our comments will relate to specifics of Outboard Marine Engines and how together, in a constructive manner, we are able to support the proposed DEWHA Emission Reduction plan.

General Comments

Urban Pollution

Throughout the RIS Outboard Engines are singled out and made out to be major contributors toward "Urban Pollution". Based on information in the RIS and to put figures in perspective Recreational Marine (Not exclusive to Outboard Engines) account for 4% of Total 3% of CO which equals 0.12% Australian "Urban" CO and 6% of Total 7% which equals 0.42% Australian "Urban" VOC. A definition of Urban Regions was sought from DEWHA, but no data was supplied or explanation given as to the criteria used in determining these areas of concern related to emission levels or impact on public health.

It appears that DEWHA now wishes to link Emissions from Outboard Engines to Health issues and has therefore embarked on an assessment through consultants McLennan Magasanik and Associates to project future cost benefits and saving of lives to the year 2030.

However it is not clear why all modeling for the study and conclusions reached are based on overseas data not relevant to Australia nor does there appear to be a base point comparison say between the last ten years in Australia and the projected future outcomes to assist the public and members of the panel to evaluate the future benefits proposed by consultants McLennan Magasanik and Associates.

We are greatly concerned that no mention is made of modeling used in submissions to the Department of the Environment and Heritage commissioned (2006) – Comparative Assessment of the Environment Performance of Small Engines project. At the time members of the Outboard Engine Distributors Association (OEDA) presented a comprehensive study of the Outboard engine market in Australia. The study was based on Australian conditions drawing its data from actual on water tests in Australia, National Pollutant Inventory Emissions reports, ABS Etc.

When comparisons were drawn between Australian emission levels in 2005 and the set goals for reduction in emission levels by USA EPA and CARB by 2015 it was noted that estimated emissions levels in 2005 for recreational boats in Australia in the various categories were between 83% and 99% below the forecasted USA EPA (2015) and 47% and 91% below the forecasted CARB (2015) for similar categories of emission levels.

It is our view the focus of any study on outboard engine emissions should be Australian data based and relevant to conditions of use in this country. Most significant is the urgent need to establish an Australian benchmark from which all future emission comparisons can be calculated. This is a fundamental issue with Australia being the only country where government has hitherto been unable or unwilling to address the issue of benchmarking. We have repeatedly stated this point in various forums since 2003 at both State and Federal government levels and though acknowledged as necessary is yet to be implemented.

In our opinion the current government view seems to be more concerned with health issues rather than the progress of reduction in outboard engine emissions in the country. The simplistic solution appears to be proposed legislation prevailing in foreign countries to restrict the importation of a particular type of outboard engine at some future date thus depriving Australian consumers of the right of choice to update similar old engines with late models. Clearly these are marketing matters and should be left to the market place.

Due to the significant number of lives at risk and substantial cost to Australia as stated in submissions presented by expert consultants McLennan Magasanik Associates, the study should be subjected to forensic scrutiny by an organization such as CSIRO or the Energy Transformed National Research Flagship lead by Dr Tom Beer, the eminent biofuels research scientist, providing the selected organization with accurate data on which to reach appropriate conclusions.

Ultimately to establish the integrity and base for future emission studies related to the use of outboard engines for pleasure use in Australia, we are prepared to assist and indeed engage the services of either of the foregoing organizations to evaluate and advise on the study presented by consultants engaged by DEWHA.

Voluntary Emission Labeling Scheme (VELS)

The Outboard Engine Distributors Association (OEDA) formed in 1998 (not 2006 as stated in RIS), of which Lakeside Marine Pty Ltd are a founding Member, was established to provide a forum for like minded Companies to produce industry figures and address industry related issues. Other Founding Members are Mercury Marine, OMC (Bankrupt in 2000 – Original owners of Johnson and Evinrude Brands) and Yamaha.

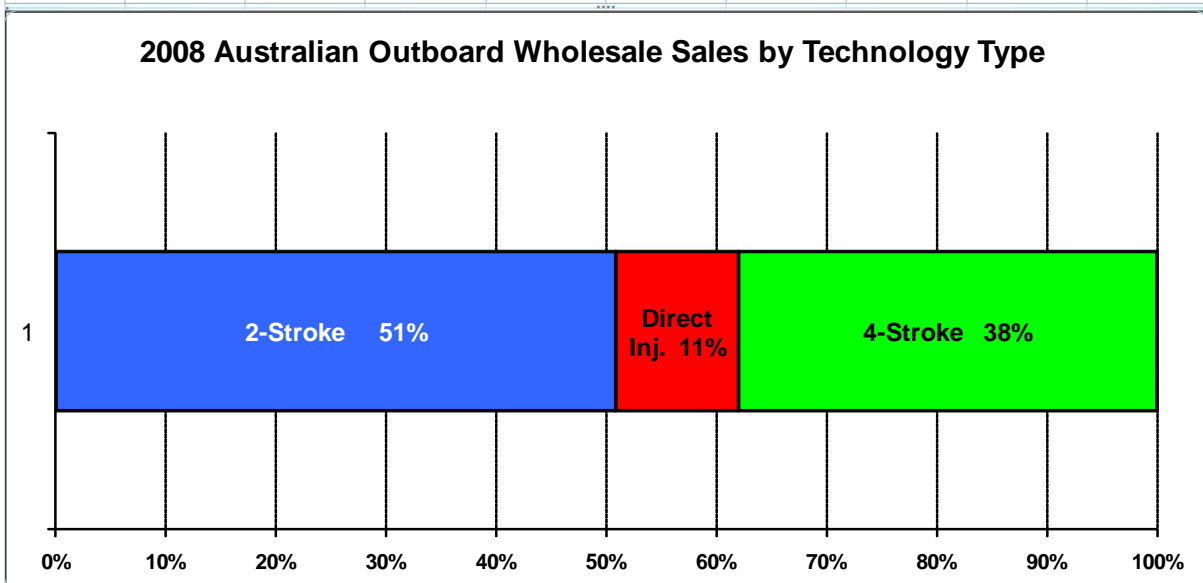
In 2006, a Voluntary Emission Labeling Scheme (VELS) was introduced, an OEDA initiative, to allow consumers to make an informed choice on Outboard Engine Technology at time of purchase. This initiative has the full support of all Major Outboard Brands (Evinrude, Honda, Mercury, Suzuki, Tohatsu and Yamaha) Distributed throughout Australia until July 2009. To apply OEDA figures December 2008 (Appendix A) 2-Stroke DI and 4-Stroke Outboard Engines have increased from 37% (2005) to 49% of Total Market Share this equals a 32% increase in New Generation Product in a 3 year period (2005 – 2008).

This figure has been achieved at no cost the Government. All advertising, Labeling and education of Dealer Network and the public was taken on by OEDA Members. The fact that the Public and Government are aware of our program and its statement is a credit to OEDA. In 2010, OEDA Members are continuing this program – Tourism Campaign (Appendix B Attached). As you can appreciate with a little support from the Government how much better these figures could have been. From this data it is clear that VELS has had an impact on the purchasing preferences of consumers.

Appendix A

2008 Wholesale Outboard Sales - Australian Market only

	0 - 10 HP	11 - 25 HP	26-50 HP	51-90 HP	91-150 HP	151HP+	Total	%
2-Stroke	5710	6865	5879	1225	446	139	20264	51%
Direct Inj	0	0	539	1517	1636	720	4412	11%
4-Stroke	2796	1416	3012	3601	2748	1584	15157	38%
Total	8506	8281	9430	6343	4830	2443	39833	100%

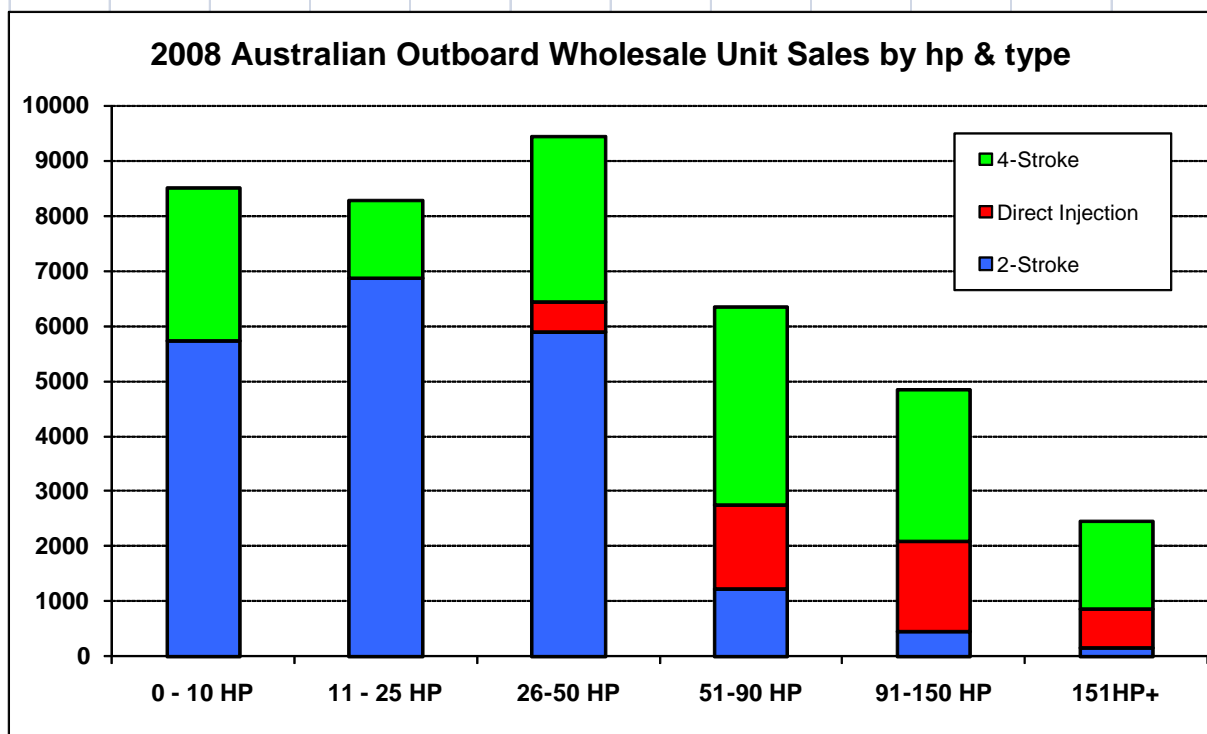


It is shown in the table below (Appendix C) the Total Australian Wholesale Outboard Sales by horsepower brackets by Technology.

Data demonstrates:

- Above 51hp plus Engine bracket 87% of Wholesale Market is New Technology – **Figure achieved without regulation**
- Below 50hp Engine bracket makes up 66% of the Total Australian Wholesale Outboard Market
- 0 - 25hp is 25% 4-Stroke due to excessive weight, handling problems and serviceability of product.

Appendix C							
2008 Wholesale Outboard Sales - Australian Market only							
	0 - 10 HP	11 - 25 HP	26-50 HP	51-90 HP	91-150 HP	151HP+	Total
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Purchase Price, Weight and Convenience

It is clear from RIS that DEWHA wish to target all horsepower brackets as one to a common end of emission reduction. The RIS comments that for larger horsepower brackets the uptake of New Generation Engines is high and in the lower horsepower brackets the uptake is relatively low. DEWHA refer to comments from AMEC that this is exclusively due to

pricing. This is true in larger Horsepower ranges where the total package pricing is high – the higher priced Engines do not represent a high percentage of final purchase packages. The convenience of handling product, Individual Engine Pricing and the massive disparity in weight do not come into play on these types of purchases.

However, while in smaller Horsepower ranges we accept pricing is part of the equation, (Appendix D), it can be seen that an average of 40% (as high as 67%) premium applies to this horsepower range, it is also recognised that this range is affected by other considerations and conveniences that only 2-Stroke engines can offer.

Appendix D
Price Differential between Tohatsu Engine Categories

Category	Model Size													
	2.5	3.5	4	5	8	10	15	25	30	40	50	70-75	90	115
2 Stroke	894	1,029	1,411	1,536	2,040	2,188	2,601	3,233	3,829	6,761	6,962	9,045	9,799	12,314
4 Stroke	1,494	1,527	1,693	1,746	3,081	3,147	3,655	5,051	5,679					
TLDI									8,207	8,373	8,551	13,459	13,709	15,519
% change 2 to 4	67%	48%	20%	14%	51%	44%	41%	56%	48%					
% Change 2 to DI									114%	24%	23%	49%	40%	26%

Model Size	% Change 2 to DI	% change 2 to 4
2.5		67%
3.5		48%
4		20%
5		14%
8		51%
10		44%
15		41%
25		56%
30	114%	48%
40	24%	
50	23%	
70-75	49%	
90	40%	
115	26%	

From the table (Appendix E) it is clearly visible that it is not just a price driven market as suggested by AMEC Members, but also a market driven by weight and convenience;

- the ability to transport with ease
- no complication of oil spills in the boots of vehicles
- no need to purchase premium level boats to support heavier technology engines
- the ability to remove engine from boats and store during periods of little use
- no issue with changing and disposing of 4-Stroke engine oil after long period of little use

Appendix E

Tohatsu Outboard Motor weight comparison 2-Stroke Carburetor with New Generation 4-Stroke & DFI

* All weights expressed in kilograms

Horsepower	Tohatsu		Difference	
	2-Stroke	4-St or DI	Weight	%
2.5	12.5	17.5	5.0	40%
3.5	12.5	17.5	5.0	40%
4.0	19.0	25.0	6.0	32%
5.0	19.0	25.0	6.0	32%
6.0	26.0	25.0	-1.0	-4%
8.0	26.0	37.0	11.0	42%
9.8	26.0	37.0	11.0	42%
15.0	41.0	52.0	11.0	27%
18.0	41.0			
20.0		52.0	11.0	27%
25.0	52.0	68.5	16.5	32%
30.0	52.0	68.5	16.5	32%
40.0	85.0	96.0	11.0	13%
50.0	85.0	96.0	11.0	13%

Australian low to mid income families, Distance Travelers and the Elderly will be heavily affected by ill-informed regulation with a devastating on flow effect to Australian Marine Market, Dealers, Distributors, Manufacturers and Boat Manufacturers. It is important to note that in the Marine Industry each sector is different and it is the Retailer that packages all Products to the end consumer. Meaning Outboard Motor, Boat, Trailer, Safety Equipment and Accessories are all purchased individually by Dealership / Retailer, matched for purpose and package for the consumer.

Example:

- Standard 2-Stroke Carburetor 30hp, Standard 4.0m Alloy Tinny, Basic Trailer
Recommended Retail \$7950.00
- Standard 4-Stroke 30hp (Outboard Weight increase of 32%), Premium 4.0m Alloy Tinny – Generally wider beam, increased freeboard or increased floatation (required to carry heavier Engine), Heavy Duty Trailer (required to carry heavier Engine & Tinny) Consumer will drop in total performance due to heavier components used in package, but still same rated power source.
Recommended Retail \$10,950.00
- **Total package price has increased by approximately 35%**

This type of purchasing and packaging is unique to the Marine Industry, and flow on effects of regulating one component must be seriously considered.

We propose that any regulation must take into calculation a phase-in or exemption period for smaller horsepower engines. It is shown throughout regulated markets that a downturn of 20% can be expected, we believe with immediate implementation in the Australian

Marine Market this figure would be much higher due to the smaller average horsepower range of our Market.

Manufacturing and Distribution

Tohatsu Corporation is the second largest Manufacturer of Outboard Marine Engines, manufacturing Tohatsu, Nissan, Mercury and Mariner Brand Engines. Tohatsu Corporation manufactures the full range of Technology available in Outboard Marine Industry. Through worldwide demand the split is 60% New Technology / 40% Carburetor 2-Stroke.

The process as Sole Distributors for Tohatsu Brand Product in Australia, New Zealand and Pacific Region, Lakeside currently has contractual obligations through to 2015, subject to penalties for non performance as in all such commercial contracts.

In the current market situation Lakeside and our Dealer network rely heavily on the sale of 2-Stroke Carburetor engines. Any misinformed and ill-advised decisions by DEWHA will have devastating effects on our ability to complete above contract.

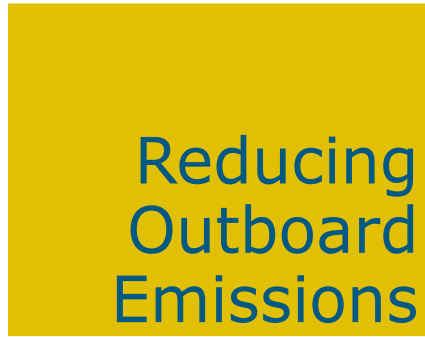
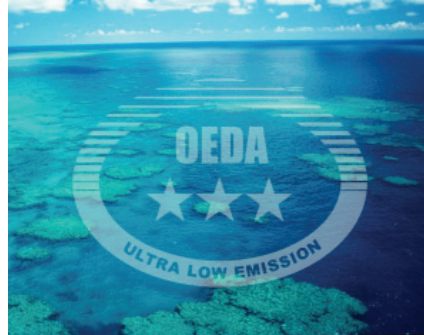
EPA Regulation

DEWHA wish to adopt US EPA rulings, but without considering any of the applied US EPA Market investigations, Setting of Benchmarks, Forward Emission Target or Market lead-times. The US EPA announced policy in 1996 that would implemented in 2006 (10 years notice), then more stringent policy announced in 2008 to be implemented in 2012 (4 years notice). Australian DEWHA announced at the RIS Consultation meeting that if all goes to plan that Regulation could possibly be policy some time in 2012, and DEWHA would expect immediate implementation.

The other issue being ignored by DEWHA and RIS is the unique conditions that apply in the Australian Market. Australia is an Island, with relatively low population for land mass. 80% of the population resides on the coastal fringes, made up of a coast line of just less than 60,000km. This is a very different situation to either the USA or Europe, so to apply methodology from these regions is inappropriate and irresponsible. This clearly shows DEWHA are after a quick application with no real consideration for the Australian Market, Australian Application, Usage or Industry.

Having said this, Lakeside Marine Pty Ltd, are not against applying and standardizing Emission Regulations with US EPA 2010 Rulings as long as appropriate lead times from New Legislation date to implementation date, 3 to 5 years, are applied as has been the case in other regulated countries.

Tourism Operators RESPONDING TO CLIMATE CHANGE



"Since we switched to low emission four-stroke outboards, we have reduced our fuel and oil use by 30 per cent."

Jan and Peter Claxton,
Ocean Rafting



Australian Government

**Great Barrier Reef
Marine Park Authority**



Reducing Outboard Emissions



Why should I care about using a low emission, well maintained outboard engine?

The amount of fuel an outboard motor uses is directly related to the type of engine and how well maintained it is. A low emission, well maintained engine will not only save your business money on fuel, but will also greatly reduce your emissions.

Some food for thought...

Traditional old technology carburetted two-stroke engines used in marine outboards are high polluters relative to their size and usage. For example, an old six horsepower two-stroke has about the same emissions per hour as a 150 horsepower low-emission outboard.

The benefits of low-emission outboard engines

A low emission outboard engine will outperform a conventional two-stroke motor, burn up 30 to 50 per cent less fuel, yet produce only 10 per cent of the emissions.

Whilst low emission outboard engines are more expensive than the older technology two-stroke engines, they last much longer and are more reliable, saving you money in the end.

The benefits of well maintained outboard engines

If you can't replace your outboard motors at the moment, you can still reduce your fuel consumption and level of pollution.

A clean and well maintained engine will use less fuel than a poorly maintained engine.

How do I reduce my outboard engine emissions?

Step 1. Look for the 'stars' at your outboard supplier

To help boat owners choose outboard engines based on comparable emissions, the Outboard Engine Distributors Association (OEDA) has an emissions rating system known as the Voluntary Emissions Labelling Scheme (VELS).



The VELS uses star ratings for new outboard engines, similar to energy and water efficiency ratings for household appliances. It is based on international emission regulations and supported by the major outboard manufacturers: Honda, Mercury, Suzuki, Tohatsu, Yamaha and BRP (makers of Evinrude and Johnson).

The OEDA Australia star rating system classifies engines with zero to four stars as follows:

OEDA Australia Star Rating	Star Rating Description	OEDA Emissions Limit (g/kW/h)
	High emission: A handful of older design two-stroke engines	> 250
	Low emission: Most traditional two-stroke engines	68.4 - 250
	Very low emission: Most two-stroke direct injection and four-stroke engines	30 - 64.8
	Ultra low emission: Some two-stroke direct injection and four-stroke engines	5 - 30
	Super ultra low emission: For future technologies	< 5





All outboard manufacturers in Australia have three star motors available. Four star outboards are not currently available, but are the standard that outboard manufacturers are aiming for in the future.

Step 2. Match engine horsepower to vessel size
When purchasing a marine engine or other motorised equipment, it is important to properly match engine horsepower to the size of your vessel, taking into account payload and required service speed. Choosing the right engine can reduce your fuel consumption, lower your emissions, and improve reliability through fewer breakdowns.

Step 3. Don't forget your prop!
Make sure the pitch of your propeller is correct to increase fuel efficiency and overall performance and remember to keep the propeller in good condition.

Step 4. Follow maintenance and operation tips
Minimising the emissions produced by your marine engine does not stop at purchasing the right equipment.

Once the engine is installed, use these tips to optimise engine performance and reduce environmental impacts:

- Ensure your outboard motor is kept in good condition and serviced according to the manufacturer's recommendations.
- Drive your boat conservatively. Abrupt starts, excessive speed and extended use of full throttle reduce fuel efficiency and increase emissions.
- Reduce weight. Extra cargo in your boat reduces fuel efficiency.
- Eliminate unnecessary engine idling.
- Trim engines to sea conditions and the load on the vessel.



Reducing Outboard Emissions

Where can I find out more?

- Comparative Assessment of the Environmental Performance of Small Engines - Marine Outboards and Personal Watercraft
www.environment.gov.au/atmosphere/airquality/publications/marine-outboard-engine.html
- Voluntary Emissions Labelling Scheme (VELS)
www.oeda.com.au
- Climate change information and resources for tourism operators
www.gbrmpa.gov.au/onboard/home/high_standards/climate_change_action
- Great Barrier Reef Outlook Report 2009
www.gbrmpa.gov.au/corp_site/about_us/great_barrier_reef_outlook_report

What will my customers think?

People are more aware of climate change than ever. By using a low emission outboard and talking to your customers about your choice, you can demonstrate your commitment to looking after the Great Barrier Reef, the very thing they are here to enjoy.

Checklist

- ✓ Buy a three star outboard engine.
- ✓ Match your engine horsepower to the size, carrying capacity and regular operating speed of your vessel.
- ✓ Fit your engine with an appropriately sized and pitched propeller.
- ✓ Check your propeller weekly for damage and have it repaired as required.
- ✓ Service your engines as recommended by the manufacturer.
- ✓ Drive your boat conservatively and avoid unnecessary idling.
- ✓ Trim your engine to the sea conditions and payload onboard.
- ✓ Reduce the payload of your vessel by carrying only the necessities.





Reducing Outboard Emissions



Case Study – Ocean Rafting Whitsunday Islands and Cape Tribulation

Ocean Rafting has been operating daily tours in the Marine Park since 1997. In the Whitsundays, the business now operates three semi rigid inflatable boats (RIB) driven by twin four-stroke V6 225hp engines. One larger RIB powered by twin V8 350hp engines is run out of Cape Tribulation under the name Ocean Safari.

Jan and Peter Claxton purchased *Ocean Rafting* in 2001, and after replacing all the vessels' two-stroke engines with four-strokes, the company has gone from strength to strength.

"The four-strokes are more reliable, have less environmental impacts, and reduce fuel and oil use by 30 per cent," says owner Jan Claxton. "Visitors have commented that the exhaust does not smell nearly as much and they are much quieter, so they are much better from a passenger comfort point of view."

The *Ocean Rafting* RIBs have engines with much more power than is actually required to run their 25 passenger vessels. The Claxton's have found that running these engines at about two-thirds their capacity means they are never running under strain and therefore burn less fuel. To assist in achieving the best performance from its engines, *Ocean Rafting* also ensures they choose their propeller's size and pitch to match the engine and vessel and that the propellers are well maintained to give optimum performance. Another important factor is ensuring skippers pay constant attention to the trim of the engine to

achieve the best performance while underway. Getting both of these correct can have a direct impact not only on the ride and performance but on the end-of-month fuel bill.

Peter Claxton believes "if you maintain the engines according to a strict schedule and get the boat's skipper to participate in the engine break-in, on-going maintenance and tuning of the vessel's engines, then you have the key to keeping the engines running at their prime. Skippers are the ones operating the boats and are in the best position to identify when the engines may need an extra service".

Even though the manufacturer recommends an oil service every 100 hours, Peter does it every 50 hours to keep the engines running at optimum performance. The oil is recycled at the marina. At 500 hours, the engines get a major service, replacing the recommended parts whether they are needed or not. At 1000 hours, the engines get a major overhaul, and at 2000 hours the engines are sold and replaced with a brand new ones. "By maintaining the engines to a top standard and replacing them every 2000 hours, we have increased the reliability of the boats through fewer breakdowns. This has made the business more profitable," Peter says.

Further information about *Ocean Rafting* can be found at www.oceanrafting.com.au/index.html or by emailing Jan and Peter Claxton at oceanrafting@airlie.net.au



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