

Understanding The Great Fuel Dilemma

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The issues surrounding modern petrols and to a lesser extent, diesel fuel, has caused a great deal of anxiety and no little risk to today's boatowners. Most of the old rules about filling up your tank and leaving it full to avoid condensation have gone, but in their place nobody seems very certain about the best protocols to use in the management of your boat's petrol-based fuel system.

Over the last few months, F&B has been working with a group of industry experts distilling (pun intended) the information they have provided to produce this report. By definition, it's impossible to deal with such a complicated subject in 6 or 7 pages, so what we've tried to do here is highlight the main issues and suggest a range of solutions, as we attempt to make boatowners aware of the problems, and the best course of action to take in solving them.

We became very conscious about the fuel issue when our two super smooth 4 cylinder in-line 2.354L Honda 150's started running like a pair of hairy goats – they were hard to start, had serious vibration issues and we knew within seconds of starting them, we had a fuel problem. And this despite our multiple fuel filter systems en-route between the fuel tanks and the injector racks.

Over the next month we learned the hard way how difficult it is to deal with the problem. How hard it is to get rid of the dead fuel, and how expensive this whole problem can quickly become, if left unchecked. About the same time, we started getting complaints from readers having similar problems all over Australia.

Essentially, the problem is that back in 1986, the international petroleum

world agreed to start withdrawing lead from their fuels (hence the beginning of the term "unleaded" petrol) because of the clear scientific evidence that the residual effects of the automotive and marine world's exhaust emissions on global warming, personal health issues (etc) had dire consequences.

Later, from 2002, the environmental lobby in Australia forced the petrol companies to go one step further, and 'clean-up' their unleaded petrols – remember how the early unleaded petrol had a distinctive 'pong'? Well, the pong – and the ability of most petrols to remain stable as we used to know it - has now gone too. The chemicals the refineries commonly used to stabilise fuel and sustain its octane rating over long periods of time, had to be removed from the petrol we use in Australia.

Petrol itself is not just a commodity

that falls out of the sky like water – it comes from a variety of sources, from both Australian and overseas oil fields. The oils themselves, as they come out of the ground are quite different, and the chemical properties of oil from Alaska, are quite different from those from the Middle East or Borneo. Getting the oil refined into the petrol we use at the local service station is extraordinarily complicated.

There is an Australian Standard covering the way fuel is structured to ensure we enjoy certain minimum standards, or uniformity of petrol, regardless of the

oilfield it came from. By and large, most experts believe the Standards are generally well maintained by the refineries.

Nevertheless, from 2002, the refineries themselves started taking different paths towards overcoming the problem of taking out the sulphur, the main ingredient the Greens wanted removed - and the most common additive all the refineries previously used to stabilise the fuel.

Different companies took different paths.

At this point, fuel rumours started to emerge, and this is primarily the reason why we've all heard so many different versions of who made what fuel that goes off sooner rather than later, or has a lower or higher octane rating, etc.

Many of the stories were grounded in some fact, because the refineries themselves were taking different paths to achieve a similar solution ie, to create fuels to an Australian Standard that would be price competitive with the others on the market.

So let's make one thing very clear from the start.

All fuels at the servo are not created equal. They are different, and are in fact, substantially different from one brand to another.

Worse, with the pressure on the big fuel companies to allow smaller operators in, wholesale arrangements within Australia have changed too, and again, the refineries have had to step back as they (in effect) lost control of another supply of petrol to the smaller independent service stations.

Some experts believe that worse than losing a minute percentage of sales, the real issue is that the big oil companies lost the ability to maintain the traditional fuel quality controls at the bowser to the emerging independents.

However, many others believe the opposite to be true - that the independents actually do a better job. It's one of 'those' issues where boatowners just have to accept the fundamental integrity of the servo operators - independent or employed -

Q. What is "RON" or "Octane Number"

RON and Octane Number are the same thing ie, "Research Octane Number" which is a measure of a petrol's ability to prevent a detonation in a spark ignition engine.

Q. What petrols are currently available in Australia?

ULP (unleaded petrol) @ **91-93 RON**

PULP (premium unleaded petrol) @ **95+ RON**

Shell Optimax, BP Ultimate 98, Mobile Synergy 8000 @ **98+ RON**

LRP (lead replacement petrol) @ **96 RON**

Q. What is an "Octane Booster"?

The word "booster" in this instance is somewhat misleading. It conjures up visions of an engine having "boosted performance" or that octane booster gives the fuel more "oomph". The purpose of an octane booster is to increase the octane number of the petrol which in turn reduces or retards the fuel's tendency to detonate. So, all an octane booster does is ensure that the fuel mixture burns properly so the engine can function according to its design and at maximum efficiency. Traditional refineries used lead as a very effective octane booster. We all know of the environmental impact of lead which has paved the way for the world to convert to 'unleaded' petrol. Taking the lead out of fuel has meant that alternative means have had to be found to maintain octane levels in petrol.

Purchasing fresh fuel in distant road houses is arguably LESS problematic than small garages in mid-sized communities. When there is only one road house in 600K, fuel quality is rarely a problem - we've had 100% more problems in marine or waterfront facilities with poor turnover.

