

Are Fuel Costs Killing Your Fishing?

Lowering fuel consumption saves you at the fuel stop and helps save the environment, too. In this special report we introduce a new writer we suspect we'll be hearing a lot more about in the future - especially on the subjects so near and dear to all of us at the moment - 2-strokes, 4-strokes, diesels and the soaring coast of fuel. But first, we have to start at the beginning . . .

Special report by Gary Fooks, EFFA

Hold onto your wallets - fuel prices at the pump are higher than they've ever been, and no one is predicting fuel will get any cheaper. Here are some tried and tested ways of reducing the sting of high fuel costs with the added benefits of lowering emissions.

Watch Fuel Consumption Electronically

Many new engines come with fuel flow instrumentation or have the facility to be added with NMEA. A LowranceNet fuel sender will cost about \$130 or you can look at fuel computers like the Navman units. This sort of monitor adds valuable information to help you watch what is happening to your fuel. Without the benefit of fuel-management numbers, you're just working in the dark.

Sophisticated units with GPS automatically calculate mileage and the most appropriate throttle setting. A basic unit will tell you how many litres per hour (l/ph) your boat burns. So you can do the numbers for a whole trip.

An instant fuel flow reading will tell you where and when you are just throwing money away.

Top speed is good fun, but it's the last 1000 rpm or so, that's costing you so much extra in fuel costs.

A good fuel management system also provides early warning of some problem that might otherwise go undetected. If the fuel management system is showing an unexpected increase in fuel usage then something

has changed and that can usually be found with a basic inspection: a bent skeg, prop damage, growth on the hull or an engine that maybe is overdue for a service and tune.



EFFA the Eco Friendly Fishing Association encourages environmentally responsible fishing practices. We love our fishing and care about the environment too.

Get Up On Plane Soon, But . . .

Planing hulls are at their most efficient when they are on the plane. We all know that. So it's best to get up there by flooring the throttle? Not quite.

Just pushing the throttle to the wall pours fuel into the outboard for a quick getaway - but all you really need to do is get up on the plane. Apply the power while counting to three - don't just slam the throttle to the wall.

As soon as you are on the plane, back off a little. You will get a lot more mileage and longer engine life.

A more gentle application of power can reduce fuel costs by as much as 30%, and hardly make a dent in your fishing time.

Cruise For Economy

Full power is only needed to get on the plane. Once you are cruising it's the time when you can really save fuel. Find a cruise speed that gives you the lowest fuel flow on that meter - it may as well start paying for itself.

Without a fuel flow meter you will have to do it by feel. Engine efficiency is when the engine becomes in sync, this can be found with a fuel flow meter and performing speed to RPM tests. So understand clearly your engine's wide open throttle (WOT) range can vary considerably from 4,800 to 6,200 RPM.

On the plane do some fine tuning of trim and throttle. With a little experience, you'll easily pick the point at which the engine is sounding sweet and the hull is "happy". It's all a matter of judgement, but easier to pick up than you might first think.

By trimming and loading the boat appropriately you can save anywhere from 10% to 20% of the fuel the boat would consume if poorly trimmed.

Get The Height Right

Think about revisiting your initial engine set-up now that you have added lots of accessories, fishing gear and

personal belongings. Almost certainly the weight and balance of your hull has changed.

Engine heights on the transom make big differences in fuel consumption and performance. Too low and you are unnecessarily dragging more engine through the water than you need to. (put a couple of fingers in the water at 20 kph and feel the load). Too high and you will have ventilation issues.

Cavitation and ventilation while similar symptoms are caused by two different reasons. Ventilation is when air is pulled down from the surface by rotating props working too close to the surface, while cavitation is a low pressure area around the propeller blades.

Select The Best Propeller.

Prop efficiency creates engine efficiency; engine efficiency creates fuel economy.

Changing to a propeller of different pitch increases or decreases acceleration, delivers lower or higher top speed ... and increases or lowers fuel consumption. When selecting a prop we all seem to concentrate on the balance between the first two – acceleration and top speed and forget about fuel consumption.

Your dealer or propeller specialist can advise you, but in general, the pitch that delivers a higher possible speed provided the engine can turn it, at the expense of acceleration, will give better fuel economy.

Never make your prop selection without the boat loaded up with the extra weight that you would normally carry – eskies, tackle, passengers and fuel. Maybe even a full live well. A prop that works well on an empty boat may struggle with a full load and cost you more at the pump.

Pitch is just one consideration. There is a big selection of blades out there: three and four blades, aluminium, stainless steel and composites and these all have an effect on fuel economy.

Generally speaking, big loads require lesser pitched propellers with more blade or surface area to push against the water (more contact, less slip) while lesser loads utilise higher pitched props.

With propellers it's like so many other things we buy – the cheaper propellers are less efficient. So you pay in the long run.



More than any other outboard company, Honda has been committed to a cleaner, more environmentally friendly outboard motor. This policy, developed way back in the early 1990's has been backed up with incredibly reliable and fuel efficient outboard engines that meet or surpass all recognised environmental Standards.

Stainless steel are the most efficient prop basically because they are stiffer and distort less under load. The blades usually have a thinner profile so that the engine's power is not used up for cutting holes in the water. Aluminium props are a fair compromise, very popular and easily repaired, while composite props are the least efficient.

Boatowners can even get a composite prop with an adjustable pitch. It's not variable on the run like some aircraft propellers, which would give some significant fuel savings, but it's worth looking at if you want to vary pitch depending on the load you carry.

An alternative is to carry two props – one for light loads and one for heavy loads if you can.

While fuel efficiency improvements from stainless steel propellers will vary depending on many other factors (such as the hull shape, boat size, size of outboard and individual blade design) its common to pick up at least 5% fuel savings.

This is especially so when the additional top speed capability is not exploited – and this often happens in fishing boats. Turn the extra speed capability that is so rarely used into fuel savings, and that stainless steel prop does not seem so expensive after all.

Don't forget that no propeller can deliver efficient boating when its bent or dinged.

The most common damage arises from innocuous-looking little dents and

Managing Your Boat's Fuel Usage . .

marks in the leading edge of the blade. Even small marks cause turbulence and loss of dynamics as the prop tries to cut through the water. Try filleting a fish with a blunt blade - what's the result? Now take another look – how sharp and smooth are the blades on your prop?

And it gets worse – having just one blade that's dented, puts the whole prop and drive out of balance.

A prop is a flywheel on an outboard, and all flywheels are balanced. With an unbalanced prop, engine life is shortened, and it will cost you an immediate increase in fuel consumption.

With a softer prop like aluminium you can use a file to smooth back the leading edges to get it almost like new again. But stainless usually means a trip to the dealer or prop specialist.

Tune Your Outboard

A motor out of tune is the most

common waste of fuel and a false saving. When the motor is not delivering its best performance the first thing we do is push the throttle down a little more to get the speed we want.

“ . . . even in the short term, fuel that has been allowed to vapour off will lose the lighter elements like butane, and the fuel will lose its “zing”.

It's not hard to believe that a tune up can improve fuel economy by 5% or more and a misfiring or faulty spark plug can cost you a 20% increase in

fuel economy.

The car clubs have been saying it for years - keep your car tuned and tyres inflated to save fuel. Same with your boat.

While we are at it – how about the tyre pressure on the trailer tyres – are they optimal or are they costing you extra fuel to tow the boat? What about your car's rear tyres? Most manufacturers recommend higher pressures when the back seat or boot is loaded, and that can also mean the weight on the towing point.

Buy The Right Fuel

High octane fuel is needed by some cars with high compression, usually European makes. So far I have not seen one outboard with pre-ignition or “pinging” issues that would call for the more expensive high octane fuels.

Some people think that to look after their outboard they need to buy the better fuel. While it's true that you should buy fuel from a reputable source – clean and fresh fuel is all you need. Octane is not vitamins for motors. If your motor is rated for regular unleaded then premium will not give you any more power, performance or engine life.

Less Fuel Is More

Carry only as many litres of fuel as you need for the trip, plus a margin for safety, say 10 or 20 percent. If you know your fuel consumption and manage it, you know how much you will need. But why be so mean on fuel?

Carrying extra weight costs more to move the load around. More on that later.

If you are carrying back home half a tank or more, and you don't get to go out fishing a few times a week then your fuel is deteriorating. The lighter more volatile elements are evaporating off, gums are concentrating and we say the fuel is turning sour. Or going 'off'.

Left too long and your engine will need an expensive service. But even in the short term, fuel that has been allowed to vapour off will lose the lighter elements

F&B's Yamaha 60 4-stroke has been a real success - combining real fuel efficiency with smooth, quiet and reliable operation.



Managing Your Boat's Fuel Usage . .

like butane, and the fuel will lose its "zing". I am sure there is a technical word for it but I like "zing".

In any case some of your fuel money will evaporate and the rest of the fuel will not go as well, so you inevitably push the throttle down a little harder to make it go - burning even more fuel!

There is a downside to having tanks that are not full. Condensation builds up inside and water sinks to the bottom of the fuel tank, which will eventually need to be cleaned out.

If your fuel is going to be more than 30 days old then pump it out to the car and buy fresh fuel the next time you go out.

Travel Light

To cut weight and save fuel, don't cruise with unnecessary eskies, tools, and gear you will never use. The boat is the tool for your hobby - not your hobby's storage shed. Carry what you need for comfort and safety and no more.

This all makes sense. You know how your fuel economy takes a nose dive when you are towing. The less weight the outboard has to haul around the less fuel it will need.

Buying a new boat? Fit the appropriate size motor for the job. Too small and you will have to run it hard to get the performance - too big and besides the initial cost, you are carrying all that extra weight around.

And think again about 4 strokes.

With the full implementation of Emissions laws in the USA and Europe, outboards have changed dramatically and what used to be true is no longer. Some modern 4-strokes weigh less than the competing 2-strokes and still have the best fuel economy and the lowest emission levels.

Outboard motors with a CARB 3 Star rating, EPA 2006, or Euro 1 rating are the ones to look for. As a rule of thumb, any outboard without that rating will use twice as much fuel, and emit ten times the emissions.

Keep It Clean

Ever touched a dolphin? They are unbelievably smooth to the touch, which partly explains how they can be so efficient and effortless in the water.

A hull bottom that is dirty, dented

and scratched will never give you effortless progress through the water. Harder to push through the water means more fuel consumed.

A hull only needs to be a little bit rough to make a big difference at speed. Sure it makes no noticeable difference if you push the hull around in knee deep water. But at speed the resistance increases exponentially and so the drag from seemingly minor blemishes can make a major difference to top end drag and thus fuel consumption.

The bad news is the only cure is washing and polishing underneath - especially where it's hard to get to.

(Hmmm ... another job for the kids?)

The good news is there are products that will do a lot to reduce the water resistance. Apart from a good polish and clean consider products like SpeedCote. These hydrophilic products put a chemical coating that the manufacturers explain alters the relationship where the hull meets the water - lessening drag and improving fuel economy and top end speed.

Install An Autopilot Or DIY

A pricey piece of electronics that in big boats soon pay back their cost with fuel savings. But even for a small boat we can learn a lesson from these plastic pals.

An autopilot will help you maintain a true course and arrive at your destination in the shortest time. How much fuel can an autopilot save? Experienced boaties have a hard time maintaining a course closer than five degrees in accuracy. So in a 100 km trip and an average error of 5 degrees you will travel an extra 10km. That's an extra 10 % in fuel and servicing.

For most of us an autopilot is out of the question - but you can follow the same principle. Try to keep a true track and a straight line. The easiest way is to pick a point in the distance and line up a point on the bow with the distant mark. Concentrate on keeping these two points aligned and you will get home sooner and save on fuel.

The Bottom Line Is In The Numbers

Without a fuel flow meter or computer system you can still keep

enough information to monitor if you are throwing money away. Write down the number of litres to top up the tank - and the number of hours you have run the engine. Divide the litres by hours to get litres per hour. Then see if you can't get this number down - and look for causes if the number goes up.

If you don't monitor it - you can't manage it.

F&B