

INBOARD DIESEL v OUTBOARD PETROL

Simon Everett continues his series on power and now looks at the age old question of whether to go diesel or outboard. We believe this narrows the debate substantially.

There is consternation in the camp. The Government has been backed into yet another corner by our Lords and Masters in Brussels and there is the possibility of low duty diesel being withdrawn for marine use, as a sacrificial lamb for other negotiations. With this Sword of Damocles hanging over our heads we thought it would be useful to examine the pros and cons of the various power sources for our boats. Like our look at 4-stroke and 2-stroke outboards, this is meant as much as a thought provoking exercise as a statement of opinion.

Currently the difference in fuel price between duty paid petrol and low duty diesel on marina fuel berths is about 55p per litre. The corresponding difference between petrol engines and diesel engines is such that at this fuel price there is merit in fitting diesel provided you operate for a sufficient number of hours each year, or for reasons of fuel availability. There are also concerns over the longevity of the different engines, but this only becomes a concern for those operators with very heavy work or extremely long hours of use. There are plenty of outboards still going perfectly satisfactorily after 20 years of leisure employment. With correct maintenance procedures there is no reason a petrol engine shouldn't provide a long service life.

With the removal of the duty benefit, the case for diesel is less clear cut and as petrol inboards, and outboards especially, become more reliable, better designed, lighter, more corrosion resistant and more powerful, they are offering a genuine alternative to the big diesel should you require high horsepower. There is, of course, the option to use inboard petrol but as I see it this only has a benefit of initial installation cost. A diesel inboard is typically about 30% more expensive than an inboard petrol engine of equivalent horsepower, but the petrol engine will have a significantly higher consumption rate with little in the way of extra performance.

When considering which engine layout to adopt, there is the question of handling to consider in addition to the cost and fuel economy. There is little weight differential between the two inboard options, so the balance of the rig is the same. Large outboards, on the other hand, do sit higher than an inboard, so large capacity outboards will have an effect on the handling of a RIB, more noticeably at high speed which is the most common use for big horsepower outboards. Handling with an inboard layout will always be more predictable than with outboard power as the weight is kept low in the stern and creates an inbuilt stability which causes the

boat to land stern first. Outboards also carry the inertia of the crank higher, creating more turning effect in the air to say nothing of the added stresses of having all the engine weight concentrated on the transom. With inboards this loading is spread between the transom and the hull on load carrying stringers designed to dissipate the stresses over a greater area of the hull. Transoms have to be more heavily built to withstand the enormous local stresses created by large capacity outboards hanging off them.

There is a greater dependability with diesel power as there is less reliance on electrical components with the compression combustion engine. For instance, the ignition system of a petrol engine is entirely absent on a diesel and speaking from personal experience, spark plugs can generally be relied upon to foul at the most inappropriate moment. The greater simplicity and higher compression ratio of the diesel will still provide an economic edge over petrol, but as the price difference between the two fuels reduces, the time taken to realise that benefit increases.

There is another consideration which might influence a decision and that is the safety aspects between a spirit engine and an oil engine. Diesel is a much safer form of fuel



DIESEL INBOARD

PROS:

- Rugged dependability.
- Fuel economy.
- Lower cost of servicing.
- High residual value.
- General availability of fuel.
- High torque characteristics.
- Longevity.
- Easier on the structure of the boat.

CONS:

- High initial purchase price.
- Higher cost of installation.
- Takes up space within the boat.
- Heavier engine.
- Noisier.
- Smaller.
- Slower performance.

PETROL INBOARD

PROS:

- Lower purchase cost.
- Higher performance.
- Faster acceleration.
- Easier on the structure of the boat.
- Cleaner and less smelly.

CONS:

- Higher fuel consumption.
- Lower residual value.
- Higher servicing costs - consumables.
- Less reliable.
- Takes up room in the boat.



OUTBOARD

PROS:

- High power to weight ratio.
- Lower initial cost.
- Quiet.
- Clean.
- High performance.
- Lighter weight.
- Ease of access for maintenance.

CONS:

- Theft vulnerability.
- Lower residual value.
- Higher servicing costs - consumables.
- Higher centre of gravity.
- Higher weight on the transom.
- Reduced availability of fuel.
- Higher fuel cost.

than petrol, a fact that is not lost to insurers both afloat and ashore. The cost of insurance for fuel pontoon operators who supply petrol and diesel is many times that of diesel only bunker berths. This is the main reason why there is a reduction in the number of petrol pumps in marina complexes.

I spoke to a private marina operator who has taken the decision to drop petrol. To bring their petrol storage and delivery system up to the required new standards was going to cost in excess of £30,000 for one pump. They had done their sums and discovered that with the limited margin available on the supply of petrol it would take over 30 years to recoup the investment. It was decided that the money would be better spent on providing more undercover winter storage. As a result, shoreside petrol is becoming more and more localised. The answer in Hugh Town, St. Marys, Scilly is to use a portable tanker and run a fuel hose down over the quay. It is a facility that is very welcome amongst locals and visitors alike.

On the south coast heading west, a popular cruising stretch, there is petrol available in Poole Harbour, Weymouth, again in Dartmouth, Plymouth and then nothing until Falmouth, up the river at Mylor Yacht Harbour. On the west coast of Wales petrol is less available with only a couple of sportsboating strongholds able to justify maintaining the facility. On the Scottish west coast the situation is even more restricted with Largs being the most northerly petrol berth that I have been able to locate. Craobh Haven has had to build a brick bunker to house the petrol for their lawn mower!

I know safety is important, but at the same time there are cars in the car park with plastic petrol cans in their boot. The bureaucracy is becoming farcical with common sense flying out the window, but if you want the Fire Safety Officer to sign your certificate you have to comply with the demands. For many small harbours this is just not viable and so they take the line of least resistance. Consequently, petrol refuelling berths are becoming less numerous.

The weight of the different engine options is something else to consider. Modern outboards are far and away lighter per hp than an inboard equivalent. For instance, the new Suzuki



300hp 4-stroke at 275kg is about half the weight of an equivalent diesel sterndrive.

For trailering your boat around to different launch sites this has an implication over and above the boat itself, an outboard powered RIB is eminently more towable than one with half a ton of engine in the stern sheets, without resorting to specialised towing vehicles.

A large family car will easily tow, launch and recover a 7m RIB with a decent sized outboard. A similarly sized inboard package would need a serious 4x4 to cope comfortably. The need for upgrading your vehicle would need to be added to the budget along with the cost of fuel for towing, if you are going away this would not be inconsiderable. The cost of the engine and the installation is also going to be considerably less than fitting a boat out with an inboard engine. For leisure use this is obviously a very attractive proposition because it means you can get more RIB for your money and then be able to afford more use of it for the same budget. Even for light commercial duties the outboard option could prove a more viable proposition as the difference in initial set up could be the difference between success or failure of the venture.

The residual value of the rig can also influence decision making when it comes to choosing the engine(s) for an outfit. Diesel engines have always attracted a higher residual price, but whether this will change should the cost of running increase, we can only speculate. Perhaps part of that residual value has come from the reduced running costs, which would no longer be relevant if marine diesel is brought in line with road diesel. The remainder of the residual value has come from the fact that marine diesels are built for the rigours of the saltwater environment and use a closed, fresh water, cooling system. Outboards just pump raw saltwater through their veins with the accompanying corrosion considerations. Some outboards use special alloys to help overcome this, or stainless steel cooling water channels and plenty of galvanic protection.

You can see, even if the low rate of duty on diesel was abolished, there are merits for both types of power supply just as there are merits for 4-stroke and 2-stroke outboards. It is not a clear cut case of one type of engine for leisure use and the other for commercial; there are plenty of overlapping criteria which create great areas of grey in an otherwise black and white world. To help you make your decision we have compiled a table of pointers.

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