

Marine Diesel

Local Context

A considerable amount of chatter about the effects of bio-diesel on marine engines prompted a meeting on the subject hosted by the RYA. Attendees were from various RYA special interest groups (Cruising, Inland Waterways, etc), clubs (Royal Gourock, RSMYC), CYCA and RYA officials including Stuart Carruthers of RYA Eastleigh, who is the RYA's lead officer on this issue and Sarah Brown of the Green Blue initiative. Kip Marina was also represented.

Background

The EU has looked to increase the proportion of bio-diesel in diesel fuel as part of the Renewables Initiative¹ and standards have been set for road and non-road diesel supplies.

There are three standards of diesel fuel in the UK which affect mariners

BS ISO 8217	Standard marine fuel, no bio-diesel.
BS 269	Up to 7% bio-diesel, low sulphur Rated for non-road use & inland waterways
BS EN 590	Road Diesel – up to 10% bio-diesel by 2020

The Legal Position

THERE IS NO LEGAL OBLIGATION TO USE BIO-DIESEL IN A RECREATIONAL CRAFT.

From the Department of Transport: Vessels which normally operate at sea, including in estuarine waters, have **no legal requirement** to use bio-diesel.

Furthermore, there is no obligation to add bio-diesel to fuel for Inland Waterways.

If you own a craft that has a diesel engine, you can choose **not** to have bio-diesel in it.

The trick is to find non-bio-diesel at the correct grade for your engine.

The problems with bio-diesel in marine engines

The key elements to the smooth running of any marine engine on bio-diesel, is the volume of diesel used and good housekeeping on the part of the owner.

Boats, such as motor boats with recently built engines, which use a large volume of diesel and turn it over regularly, **should** be less affected if they have bio-diesel in their tanks and engines – however, they will need to change diesel filters etc at very frequent (possibly inconvenient) intervals – see later.

The problems lie with older engines and those boats, particularly sailing yachts, who use very little diesel over the course of a year.

¹ Since these standards have been set, it has become obvious that bio-diesel is not the ecological answer it was originally thought to be. Growing crops for bio-diesel has resulted in de-forestation and the removal of land from food production. The whole concept of bio-diesel is now being re-examined as it has been found to be far less 'green.' It is expected that, eventually, changes to legislation will come in.

The problems are:

Stability of bio-diesel: it is less stable than marine diesel (BS ISO 8217) and breaks down after about a year to form a sludge in diesel tanks.

Bio-diesel is more prone to 'diesel bug.'

Bio-diesel is more likely to produce water in the diesel tank.

Bio-diesel waxes at a higher temperature.

Detergent qualities: bio-diesel has higher detergent qualities and so cleans tanks and pipes very effectively. It also strips copper piping & fittings, leading to faster blocking of filters as 'gunge' is brought up from the bottom of tanks.

The meeting noted that a lot of the problems seen by boat owners, and blamed on bio-diesel, may well be poor maintenance. It is suspected that damage may be overstated. As yet, the full effects have not been documented i.e. a study has not been done.

It is also suspected but cannot be proved without expensive chemical analysis, that some 'marine diesel' supplied to boat owners may already be downgraded road diesel dyed to become 'red' diesel.

Most marine engine manufacturers note that up to 7% bio-diesel should not be a problem to end users, however, they are hedging this with disclaimers in their guarantees etc. This affects newer engines rather than older ones.

Diesel Supply

INESOS at Grangemouth will supply diesel to BS ISO 8217 (marine diesel, non bio-diesel) to their fuel distributors.

Brogans, Scottish Oils and Highland Fuels² will then supply marinas with this diesel – however, the marina has to specify that they want diesel to this particular British Standard and give 72 hours notice.

The 72 hours notice is so that the fuel distributor can 1) find enough other end users to justify delivery and 2) so that delivery tankers can be flushed through to remove bio-diesel residues. It should be remembered that the supply of marine diesel is miniscule when compared to other diesel supplies and the economies of small scale supplies apply.

Duncan Chalmers (Kip Marina) noted that most marinas will supply diesel to BS ISO 8217 providing enough boat owners ask for it. He advised that concerned boat owners need to speak to their marinas and find out what specification of diesel is being supplied at the marina. He also noted that marinas have their part to play and Kip had fitted polishing and other filters to their delivery system.

Note: if your marina fuels fishing/commercial vessels, the diesel supplied may be to BS ISO 8217.

Diesel to BS ISO 8217 will **always** be available from the refiners: it is this grade of diesel which is used in emergency vehicles and standby generators for hospitals, airports, fire stations etc. Operators of such machinery will not accept bio-diesel in any form.

Stuart Carruthers noted that the RYA is building details of a network of suppliers who will supply diesel to BS ISO 8217. He noted that all Scotland's fuel comes from Grangemouth.

² These suppliers were mentioned at the meeting. Other local suppliers are likely to supply if the demand is there.

In Summary, the key questions were:

Can you use non-bio-diesel in your marine engine?	YES
Can you still buy marine diesel to BS ISO 8217?	YES
Will your local supplier (marina) supply diesel to BS ISO 8217?	DEPENDS

You have to take responsibility and ask your supplier to supply.

Suggestions from the meeting

1. Boat owners should ask their diesel supplier what specification of diesel is being supplied.
2. If enough owners ask a marina for a particular standard, that marina will probably supply it.
3. Marinas should post a notice at their fuel pumps stating which specification of diesel is supplied.
4. Marinas should follow Kip's lead and add polishing and other filters to their delivery mechanisms.
5. Owners should have a maintenance routine for their filters and fuel.

Post Meeting Research

Subsequent to the meeting, on speaking to marine diesel engineers, the following observations were made by them:

Keeping your engine, tanks and filters well maintained is **CRUCIAL**.

Avoid buying diesel from bulk tanks that are not turned over regularly. Diesel bug is more likely to be present in such tanks.

For very low usage, less than 100 litres per year (most sailing yachts), buying road diesel, even if it is bio diesel, from a garage will cause fewer problems than if diesel from a marine source is used, simply as road diesel is turned over faster and so will be 'newer', cleaner and less prone to diesel bug.

For large users, motorboats etc, consider double or triple filter sets – so that you can 'switch' from one diesel feed to another when filters get blocked.

Source your diesel carefully and ask what you are getting.

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