

Gone are the days of filling up your tank and forgetting about it

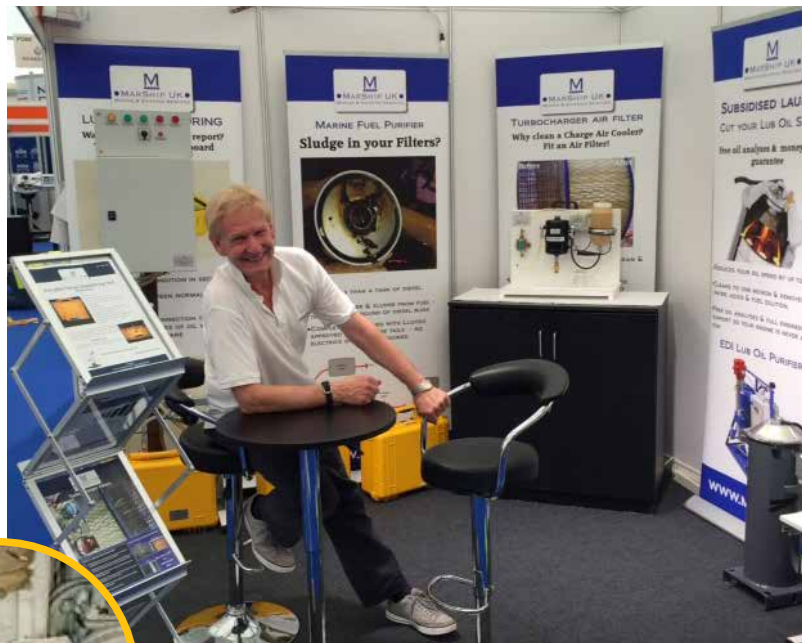
» **IN THIS ARTICLE FOR** Farmers Mart, Peter Weide, Director of MarShip UK, explains the many changes in diesel and what you should know.

Diesel has changed, government and care for the environment has produced a diesel very different to what we used in the 70s and 80'. Fuel was then refined from low sulphur "sweet crude" and was simply refined and sold as it had been for decades, no-one was worried about the sulphur but sweet crude is getting scarce and expensive so "Sour Crude" is becoming the norm.

Sour crude is a high sulphur high toxic fuel and has coincided with government legislation for ultra- low sulphur diesel ULSD. Consequently, we have now opposite extremes starting with a high sulphur crude we have to make an almost zero sulphur diesel. This requires different refining techniques that makes the diesel unstable and not only removes the sulphur but also removes the compounds that give the fuel lubricity. Then came the renewable fuels directive which required fuel to contain Bio Diesel (FAME) up to minimum 7%. BioDiesel is made from Rape seed oil, palm oil or the local chippies used frying oil. It is very highly hygroscopic and a by product is glycerine and water so look out for that in your fuel tank.

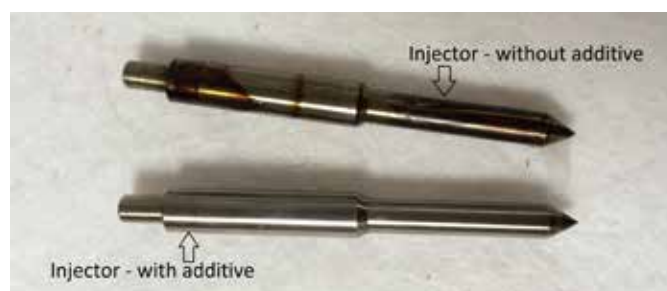
What does this mean? Tier 1 and 2 engines could most likely burn anything, and now we have Tier 4, 5 and soon 6. These new Common rail engines operate at fuel pressures unheard of a few years ago: they have engine management systems that fire the injectors up to six times during the firing stroke, meaning the humble injector is firing at 100 times a second; they have piezo electric actuators because electricity is too slow and tolerances so small they are measured in a few microns (a human hair is 100 microns).

How does this affect you? Clean, dry, uncontaminated diesel is essential if you want reliability from your engines. Engine manufacturers now regularly refuse claims for warranty on fuel-related components owing to off-spec fuel. Reputable manufacturers sell fuel to use, not to store - they put in additives to maintain quality for a maximum



of six months. We have learned that some do not, as with fuel prices and profits at an all-time low, additives are, after all, an additional cost. Your fuel is probably at least two months old when you get it, having been bought, sold and transferred between tanks many times as it works through the supply chain. What you get may already have water and diesel bug. As it sits in your tank it is already degraded, exposed to condensation from moist air which brings in diesel bugs and contaminates this degradation accelerates and it becomes unstable whilst collecting free water on the bottom resulting in a habitat for diesel Bug which live in the water and feed of the fuel above accelerating degradation further. Diesel bug double in number every 20 mins, lives for 24 hours, die and forms a sludge on the

bottom of the tank, but the first time you see it is when the filters clog up and the engine stops. What can you do? Only buy from a reputable supplier and constantly drain the tanks of water from the drain valve if you have one or fit an automatic dewatering system like the Diesel Drake®. Simply remove the water and you remove the bug. If you are storing fuel for longer than six months which is most likely, then it is important to replace the additives introduced at manufacture. A classic sign of fuel degradation is gumming and lacquering: these deposits begin to quote the fuel system, and usually first signs are smoking exhausts as the fuel systems struggle operate efficiently. A good multi-purpose additive such as DieselAid® C should contain a Stabiliser, lubricity improver, demulsifier, detergent, cetene improver and a biocide. Added with the fuel at every delivery it will ensure the fuel and in turn your engine has the best chance to deliver the intended power.



MarShip UK specialises in diesel fuel conditioning, cleaning and storing. They can be contacted through Farmers Mart or sales@marship.eu, 01666 818 791. www.marship.eu