

By our staff

GONE ARE THE DAYS OF FILLING UP YOUR TANK AND FORGETTING ABOUT IT

Diesel has changed, government legislation and environmental concerns have resulted in modern diesel being highly hygroscopic, unstable and lacking intrinsic lubricity.

Refiners extract double the amount of diesel from a barrel of oil than they did in the 90's and those barrels of oil now come from sour crude that in the 80's were seen as poor quality. The finished diesel is then hydroprocessed to remove the sulphur. In so doing removes the lubricity making it less stable and more prone to oxidation, gums and varnishes causing poor starting, smoking exhausts and increased fuel consumption. Meanwhile as the diesel quality and stability has steadily worsened, technical

advances in engine design has been almost exponential with the fuel injector at the forefront of these changes and the heart of fuel atomisation. Today's modern common rail fuel systems deliver fuel directly to the injectors at over 45,000psi, a pressure unheard of a few years ago. To achieve these pressures tolerances are measured in a few microns, imagine that human hair is almost 50 times larger at 100 microns. In the 90's the fuel injectors of an engine running at 3000 RPM would open and close 25 times a second. Compare this with a modern injector operating at 175 times a second in an effort to meet current exhaust emissions it becomes clear that anything other than good quality, dry diesel will quickly cause problems. Next to poor quality diesel from suppliers the biggest single contaminant in diesel is water. Brought in from the supplier, the atmosphere or over enthusiastic deck washing, water will accelerate the degradation of diesel and can harbour microorganisms leading to sludge build up from asphaltene and Diesel Bug. Diesel Bug is the generic name for Yeast, Mould and Bacteria. It doubles in number every 20 mins and lives for 36 hours before dying collecting as slimy sludge on the bottom of the tank. The only way to eradicate Diesel Bug is to remove the water and dose the fuel with a biocide. Often confused with Diesel Bug is Asphaltene precipitation. Marine engines are unique as 60% of the fuel is returned to the tank having achieved its secondary duty of cooling the injectors. However diesel is not designed to act as a coolant, modern diesel even less so. Being subjected to regular high pressure through the fuel pump with regular heating and cooling leads to rapid degradation of the fuel. This agglomerates the

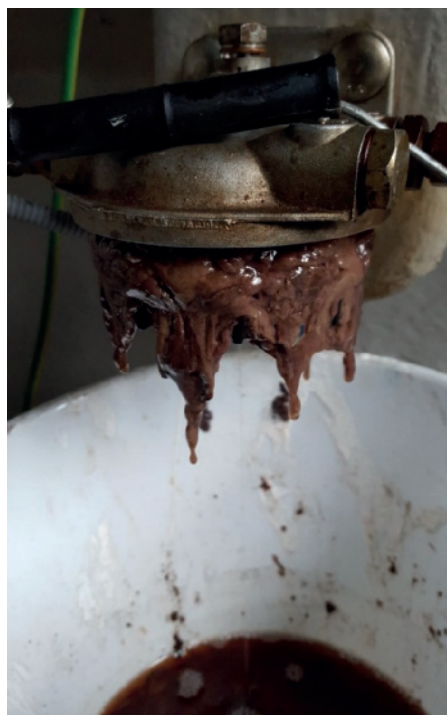
About Marship

30 years marine experience and a team dedicated to ensuring your diesel engine maintains its efficiency. We've solved the diesel bug problem with our diesel fuel purifier and saved our customers 70% on their oil spend alongside eliminating cleaning charge air coolers. It's about listening & providing innovative solutions.

asphaltenes in larger particles that turn the diesel a dark colour before sinking to the bottom as a tarry, shiny deposit.

So what can be done?

It is imperative all water is removed regularly and fuel is dosed with a detergent and stability additive. Water left in the tank will accelerate the degradation of the diesel and harbour Diesel Bug, both causing sludge that will block filters and stop your engine. Degraded diesel will also cause gumming and lacquering of fuel system components. Water can simply be drained from the bottom of the tank via a drain plug or with a Diesel Dipper® if no drain plug is fitted. Most engines have a water collector in the filter to the engine but this is not an effective solution as any water found in the bowl means the tank already has approximately 10 to 15mm of water below the fuel suction.



Finally additives are essential in modern diesel and we recommend DieselAid® LDB, this multifunctional fuel treatment consists of a Lubricant and Detergent to lubricate and clean fuel system components so preventing lacquering and gumming that lead to increased fuel consumption, smoking and difficult starting. It also contains an engine manufacturer approved biocide to ensure any diesel bug cannot become established. Peter Weide, MD of MarShip formally a Chief Engineer has worked in the Marine Industry for 20 years. A manager with Mobil Marine Lubricants, Director with A & P Ship Repairers and latterly Service Sales Manager for Wartsila (Stork). MarShip specialise in cleaning the Air, Fuel and Lubricating oil in Diesel Engines.

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