



Sarah David & Ronan Ross returning from a Tuna trip. Photo Niall Duffy

Diesel Doctor - Lacquering, Varnish and Deposits

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

We know fuel has changed to be kinder to the environment and this has led to changes in engine design. The injector is at the forefront of these changes and the heart of fuel atomisation. Today's modern common rail fuel systems deliver fuel direct to the injectors at up to 45,000psi, a pressure unheard of a few years ago. To achieve these pressures tolerances are measured in a few microns, for example human hair is almost 50 times bigger at typically 100 microns.

Yet as these pressures and tolerances have become ever more critical, the diesel itself has become ever more unstable.

Refiners now 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 unstable base stocks that in the 80's were seen as poor quality. The finished diesel is then hydroprocessed to remove the sulphur and in so doing removes the lubricity and makes it less stable and more prone to oxidation, gums and varnishes causing the newer modern phenomenon IDID (Internal Diesel Injector Deposits).

Why are IDID deposits lethal?

Traditionally, coking deposits built up over time, affecting

engine performance so slowly that the effect on fuel economy and performance was not immediate. IDID deposits have a more abrupt impact. Affecting the internal moving parts, where tolerances are extremely tight and the parts light, the deposits cause binding or sticking. In extreme cases, the injector gets stuck in an open or closed position. More commonly, the parts will move slowly and not accomplish the required multiple injections with split second timing. IDID has been reported to develop in less than 100 hours

Possible causes

There are two distinct types of deposit, 'waxy' or 'soap' like and carbonaceous or lacquer. Ultra Low Sulphur Diesel is also a factor as is Bio-diesel. Bio-diesel contains fatty acids and with oxidation contribute to deposit accumulation.

Temperature also has an effect on Nozzle coking at 300 centigrade thermal condensation and cracking occur accelerating the rate of deposition in the nozzle.

Solving the problem

Regardless of the cause, the challenge is to develop an additive solution which solves both the traditional coking issue and the modern IDID problem.

DieselAid D is targeted at addressing the problems of both coking and IDID and with a dose rate of 1 litre in 8000 litres is very economical.

For further advice or information contact us at www.marship.



Steel Twin/Quad Rig Trawler,
Howth, Co Dublin.

TRAWLER FOR SALE

Built 1986 Hull: Steel Length (metres): 22.40
Beam (metres): 6.80 Draft (metres): 4.00
Licence: Licence not for sale, 130gt and 526 kw
Engine: caterpillar 3508, VP Masson Gearbox ESD
401 GP, driving generator and hydraulics. Auxiliary
engine Perkins new 6 cyl in 2013 driving hydraulic
backup and generator.

Hydraulics: New system installed in 2005/06, pipe
work in stainless steel. 3 x 10 ton winches, 2 net
drums, 4 nets, gilson 6 ton and 1 ton landing winch.

Electronics: Usual for this size of vessel, all owned.
Other information: Vessel in good condition, just
gone through 4 yearly survey by department COP
(dti). Refrigerated fish hold 70m, and ice machine,
CJC fuel filter. Boat in good very condition

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