

# DFDS SEAWAYS



## LOCATION

Grimsby, Lincolnshire, UK

## BUSINESS SECTOR

Freight shipping

## SIZE

DFDS Group: 6,600 staff

## VEHICLES

The Humber Viking's 1.4MW Mitsubishi generator

## CHALLENGES FACED

1. The oil in the Humber Viking's generator was being badly diluted by fuel. This necessitated oil changes every 250 hours, leading to excessive oil use and maintenance costs exceeding £15,000 per annum.
2. The oil dilution increased engine wear and threatened generator reliability.

## SOLUTIONS DELIVERED

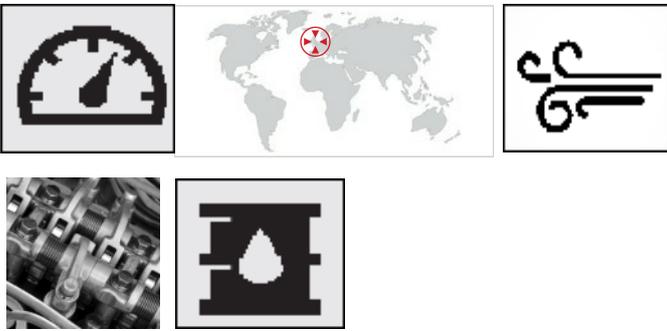
1. The oil drain interval was safely extended to 1,000 hours by fitting an EDI Lube Oil Purifier. This unit removed the fuel dilution through a combined process of evaporation and filtration.
2. Engine additive levels and viscosities were kept at optimum levels to maintain lubrication and ensure the reliable operation of the main generator.

“ *The EDI unit represents the most cost-effective way to remove fuel dilution from the oil in the Humber Viking's generator. Plug it in, problem solved* ”

DFDS Chief Engineer



MarShip UK's EDI Lube Oil Purifier



# FINANCIAL GOOD SENSE

## LIVING WITHOUT EDI

	Year 1	Year 2	Year 3	Year 4	Year 5
<u>Services Costs</u>					
Oil	£800	£800	£800	£800	£800
Full-Flow Filters	£90	£90	£90	£90	£90
Labour	£75	£75	£75	£75	£75
Oil Analysis	£15	£15	£15	£15	£15
<b>Total cost per service</b>	<b>£980</b>	<b>£980</b>	<b>£980</b>	<b>£980</b>	<b>£980</b>
Annual Services	16	16	16	16	16
<b>Annual Spend</b>	<b>£15,680</b>	<b>£15,680</b>	<b>£15,680</b>	<b>£15,680</b>	
Total 5 year spend	£78,400	<b>£15,680</b>			

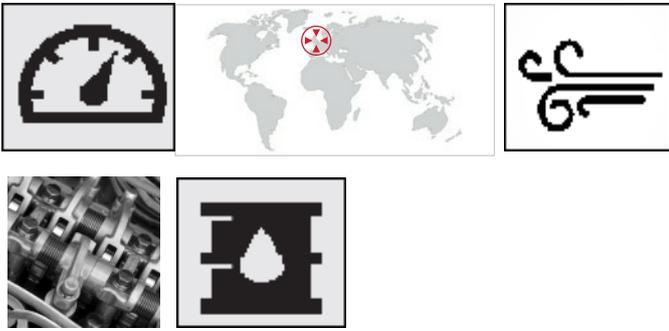
## SAVING WITH EDI

	Year 1	Year 2	Year 3	Year 4	Year 5
<u>Services Costs</u>					
Oil	£820	£820	£820	£820	£820
Full-Flow Filters	£90	£90	£90	£90	£90
Labour	£100	£100	£100	£100	£100
Oil Analysis	£15	£15	£15	£15	£15
EDI Elements x 2	£180	£180	£180	£180	£180
<b>Total cost per service</b>	<b>£1,205</b>	<b>£1,205</b>	<b>£1,205</b>	<b>£1,205</b>	<b>£1,205</b>
Annual Services	4	4	4	4	4
EDI (incl. Installation)	£1,500				
<b>Annual Spend with EDI</b>	<b>£6,320</b>	<b>£4,820</b>	<b>£4,820</b>	<b>£4,820</b>	<b>£4,820</b>

**ANNUAL SAVINGS WITH EDI INSTALLED £10,086 per engine**  
 resulting in a 5 year saving £52,800 - 67%

These statistics exclude additional savings from:

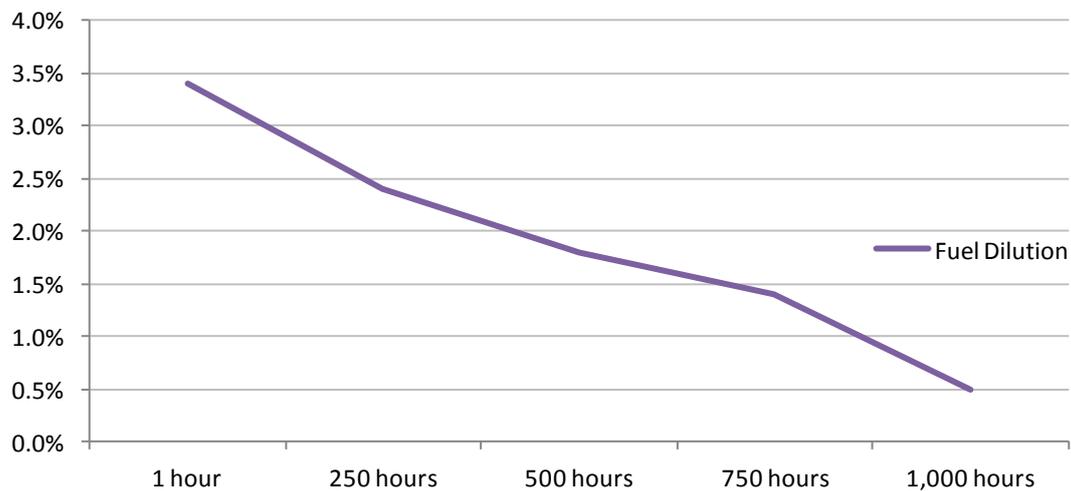
- Productivity enhancements available from fewer service stops
- Reduced oil disposal costs



# TECHNICAL GOOD SENSE

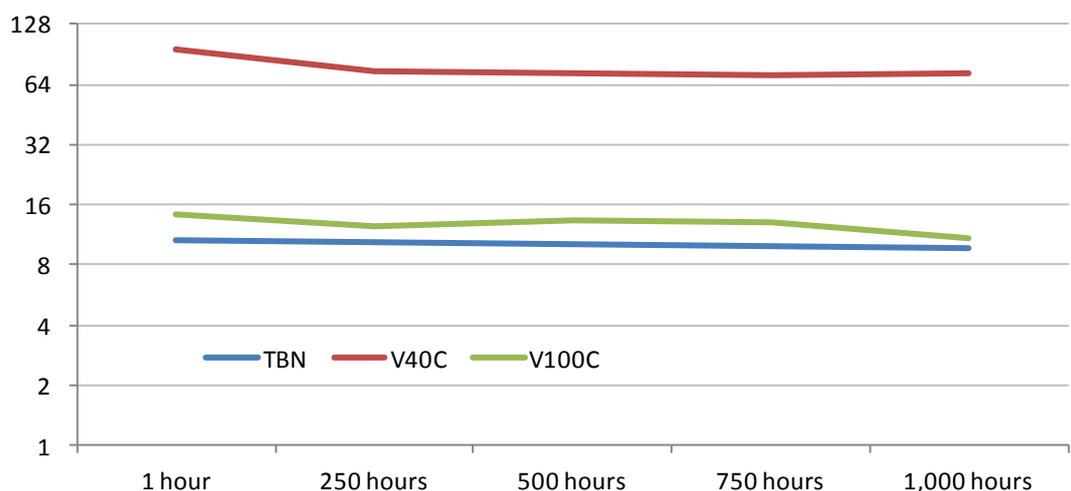
## REMOVING FUEL DILUTION

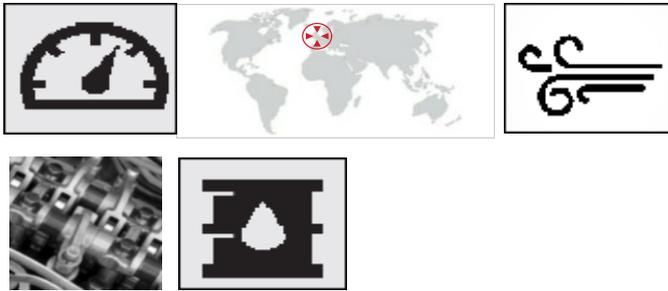
After installing the EDI the level of fuel dilution dropped steadily from 3.5% to a perfectly safe 0.5%. The EDI's protein-rich 1µm cotton element removes the fuel's heavier hydro-carbons while the evaporation chamber removes and vents lighter hydro-carbons.



## MAINTAINING FLUID PHYSICAL PROPERTIES

Over the same extended service period the oil's Total Base Number (i.e. the level of alkaline additives) and viscosity remain constant thanks to the EDI unit's ability to evaporate off water and sulphur dioxide, the precursors of a sulphuric acid reaction.





## BACKGROUND

The Humber Viking is a ro-ro (roll on, roll off) cargo vessel operating between the UK and Holland and throughout the Mediterranean.

Testing revealed that the main generator's engine oil was becoming diluted by diesel fuel. This endangered the reliability of the generator and the safety of the ship.

Without treatment, the only way to cope with the dilution was the change the oil every 250 hours. With an oil capacity of 400l, this was an expensive, disruptive and time-consuming process.

## RIGOROUS TESTING

The solution presented by Marship UK was to fit an EDI Lub Oil Purifier to the generator. Its primary function would be to remove the fuel from the engine oil but its advanced filtration and evaporation processes also remove wear metals and maintain the oil's viscosity and physical attributes.

## A TRIPLE SUCCESS

The EDI unit has been entirely successful on technical, operational and financial levels.

- Fuel dilution has been reduced from 3.5% to 0.5%. It represents no danger to the generator at this level.
- Oil change service intervals have been extended by a factor of four: from 250 to 1,000 hours. This extends the vessel's operational window and reduces maintenance requirements.
- Fewer services and reduced oil consumption generate a 5-year saving of over £45,000 for the operators.

## ABOUT DFDS SEAWAYS

DFDS is a growing international shipping company with a leading market position in Northern Europe. DFDS' shipping network integrates freight and passenger services. The group HQ is in Copenhagen.

## ABOUT MARSHIP UK

MarShip UK's oil products can help extend the life of engine and transmission oils and hydraulic fluids by removing harmful contaminants and by monitoring and analysing contamination levels and properties. MarShip UK's specialist team has extensive knowledge of all forms of engine and industrial filtration together with fuel cleaning and fuel polishing

**3.5% ▶ 0.5%**

**Reduction in fuel dilution of engine oil**

<http://www.marship.eu/info-centre#Info-Oil-section>

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