



CJC® Application Study

CUSTOMER

Vessel: MS „ANTARO“
Shipowner: Robert Scheermann jun.

SYSTEM

Main engine: Diesel engine VOLVO PENTA type D49A-MS, 880 kW, 1,600 rpm
Lube oil: Castrol Rivermax RX+ 15W-40
102,4 cSt at 40 °C,
14 cSt at 100 °C
Oil volume: 250 Litre
Runtime, engine: 33,650 RHs at test start,
approx. 1,770 RHs per year

PROBLEM

The shipowner has read in the CJC® Application Study about the vessel „TMS „SHENANDOAH“ that efficient oil care prolongs the engine lube oil lifetime. He contacted the CJC® team in Germany.

TEST

For test purposes, a CJC® Oil-Care System 38/40 with CJC® Fine Filter Insert JH 38/40 was installed. The pump-motor-unit enables the continuous fine and depth filtration, water separation and care of the lube oil (24/7/365). The system removes particles, water, oil degradation products and ensures permanently clean and dry oil.

Dirt holding capacity: approx. 6 kg
Water absorption capacity: approx. 2,9 l
Filtration degree: 3 µm absolute, 1 µm nominal
Filter material: 100 % renewable raw materials
Energy consumption: 0.12 up to 0.14 kW

RESULT

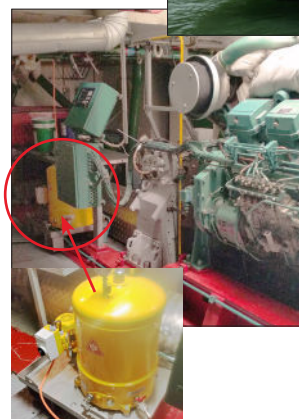
The CJC® Oil-Care System improved the engine lube oil cleanliness drastically, with the result that the oil change interval is prolonged by more than 71 % – from 700 up to 1,200 running hours.

The frequent oil analysis, examined by an independent laboratory (Akso), confirm an excellent oil condition during the whole test period (compare: schedule, left). Contaminants, wear particles/debris and especially oil degradation products from oxidation, nitration and sulfation processes are efficiently removed from the oil. The clean oil prevents the components from varnish, sludge formation, wear, corrosion and accelerated oil degradation (generation of acids, viscosity changes). The lube oil dispersancy is similar as for new oil – the higher the value, the higher the oil's capability to disperse soot particles, hold them fine divided in the oil so that they can be filtered out (dispersancy of new oil = 100). Only with the highest oil cleanliness maximum component protection and engine reliability can be achieved.

The CJC® Fine Filter Insert hasn't to be changed not one time during 1,150 running hours. The filter insert lifetime amounts to more than eight months.



Photo: River boat MS „ANTARO“



Photo, left:
CJC® Oil-Care System installed at the main diesel engine VOLVO PENTA type D49-A-MS

OIL SAMPLES

	BEFORE test start		AFTER commissioning of the CJC® Oil-Care System			
Running hours since oil change	700	700	250	770	1.000	1.150
Top-up volume, l	100	50	0	50	70	50
Viscosity in cSt at 40 °C	89.73	87.15	94.49	95.23	91.98	95.87
at 100 °C	13.3	13.5	14.2	13.8	13.3	13.0
Oxidation, A/cm	18.76	19.96	14.85	9.08	18.62	19.35
Nitration, A/cm	0.89	0.27	0	0.71	1.23	1.76
Sulfation, A/cm	1.94	2.11	0	1.48	1.98	0.00
Soot, %	0.11	0.06	0.05	0.09	0.09	0.08
Dispersancy	85	85	90	95	95	95

COMMENT

Robert Scheermann, Shipowner MS „ANTARO“:

“The filter system and the oil analysis are absolute convincing! After more than 700 running hours, the oil was still bright and clear. Also, the injection nozzles are visible cleaner! Due to the improved oil cleanliness, we extended the meantime between oil changes, and simultaneously we can protect the motor components against wear and contaminants/deposits more efficiently.”

Further advantages:

Highest oil cleanliness classes improve reliability of the thrusters:

- less wear
- fewer breakdowns/day days
- high savings

Extended meantime between oil changes lead to high savings and protects environment and resources simultaneously:

- less new oil
- less waste oil and CO₂ *)

*) During thermal disposal of waste oil CO₂ is generated – approx. 2.6 kg CO₂ per 1 Litre.

