



Engine Lube Oil Wärtsilä Main Engine, Supply Vessel

CJC™ Application Study

CUSTOMER

M/S Bourbon Mistral, Platform Supply Vessel,
Bourbon Offshore Norway.

SYSTEM

Diesel electrical propulsion system equipped with
4 Wärtsilä generator engines each of 1,665 kW.

PROBLEM

Ever since they were new the engines have had problems with high levels of insolubles (0.7 to 1.0% wt), and with the engines getting very dirty inside. Separators have been applied that run in turns on two engines. They have a 30 minutes changing interval, and the inlet temperature of the oil is 95°C. Furthermore, an self made specific gravity disc has been mounted in order to optimize the separators, however with no effect as to a solution of the problems.

These problems have been reported to Wärtsilä, Castrol and Alfa Laval without any solution to the problem.

SOLUTION

On our own initiative and with the blessing of Torbjørn Celle from Wärtsilä, a **CJC™ Fine Filter system 27/81** with **CJC™ Fine Filter insert HDU 27/81** (3 Micron absolute) and a pump flow of 400 l/h (50 Hz) was installed.

The filter was equipped with a steel filter plate, a special thermostat and viton seals with a view to working at high oil temperatures. The filter was connected to the main engine 3 and has been mounted on the couplings, where the separator used to be connected. The separator has been disconnected.

RESULT

After 18 days of operation of the CJC™ Filter and 70 hours of operation on the main engine after the mounting, an oil sample was sent to Castrol for analysis. The analysis showed that insolubles were reduced to 0.1% wt.

After two months, the filter inserts had to be changed. It is expected that the new filter inserts will last much longer after the accumulated contamination has been removed from the engines.

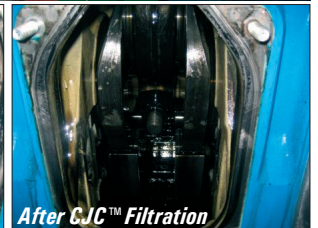
At inspection of the inside of the main engine you can very clearly see that the black sludge has started to disappear (see photos to the right).

**Bourbon Offshore
Norway**

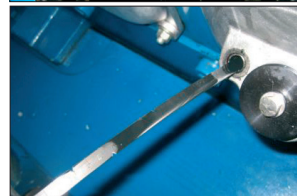
Supply-vessel
M/S Bourbon
Mistral



Before CJC™ Filtration

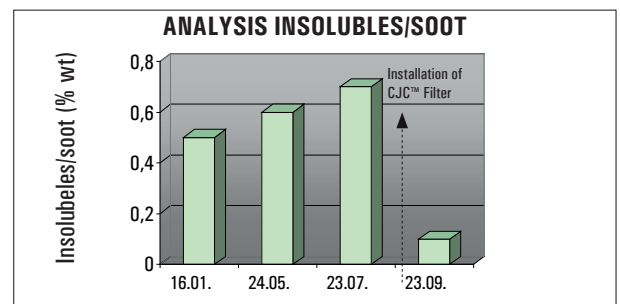


After CJC™ Filtration



RESULT

	BEFORE CJC™ FILTRATION			AFTER
	16.01.	24.05.	23.07.	23.09.
Insolubles/soot (% wt)	0.5	0.6	0.7	0.1



COMMENT

Mr. Lars Inge Klauset, Chief engineer, M/S Bourbon Mistral:

"I recommend that our LO separators are left ashore and that CJC Filters are purchased also for the other main engines. The bonus of doing so will be that we will not have to operate these separators, which is both costly and time consuming. A quick estimate shows that in a year these two LO separators produced 280 m³ of sludge (8 L of sludge per change, 4 changes per hour). Part of this sludge is lubricating oil, and this means that we will also reduce our consumption of lubrication oil considerably. By getting rid of this amount of sludge we will also save considerable amounts for spare parts for the incinerator and the bilge water system, and diesel for burning of this sludge – not to mention the positive effect to the environment that would be an extra bonus."

Mr. Torbjørn Gravdal, Technical Inspector, Bourbon Offshore, Norway: *"I have sailed as a chief engineer for many years, and have good experience with the CJC Filters, so I was not surprised to see the effect of the filters. We are now going to install similar filters on the 3 other engines of the Bourbon Mistral, and on all 4 engines of the sister ship, the M/S Bourbon Monsoon."*