Report: MV "MontSt.Michel" – Technical Stop GDANSK

january 2008 at "REMONTOWA" shipyard Poland.

The shipyard was going to take deflexion measurements at the arrival of the vessel at long side. Engine temperature were around 60° C.
You will find the values in the attached file under the measurement sheet Remontowa N° 5014-17. All values were found in Mak Limits.

Main engine air cooler:

All four air coolers were overhauled in the Yards workshop with pressure test after cleaning and reparation. The four air coolers were not equipped with water catcher.
We installed the newest design of water catcher on all four coolers for to avoid water in the intake air collector. (see: photos pdf cooler +divers)

Cylinder heads:

All cylinder heads were dismounted and overhauled in the workshop with a pressure test at the end. We found the heads in a very good shape. All heads were submitted to crack tests; no cracks were found. The valve seats were grinded and some exchanged for new ones due to over limits after grinding. The rocker arm assemblies were controlled, the o-ring of the valve bridge guide exchanged, a certain number of valve spring supports, spring covers, rotocups and freewheels exchanged. All inlet valves were grinded or exchanged if necessary. All outlet valves were exchanged by new ones (see: photos pdf cylinder head)

Cylinder liners, cooling water rings and engine blocs:

The cylinder liners were in very good conditions. After intensive cleaning we found back the original honing surface. The polishing rings showed no wear, so they were put back in place. We found light fritting marks between engine bloc and liner as between liner and cooling water ring. These light marks were polished with abrasive paper; no grinding was necessary. (see: photos pdf engine bloc + liner)

23 cylinder head fixing bolts were exchanged due to corrosion (see photos pdf aircooler and divers)

Pistons and Piston crowns:

Another, very positive impression was given by the pistons. We found no burning on the combustion side of the crowns. The rings were still in good conditions and we didn't find any deposit of carbon or lacquering on the inner cooling surfaces of the crowns. We exchanged two crowns for new ones due to too high ring grooves height on piston 2+3 of engine N°1. (see: measurement sheets Remontowa N°5165 and

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5077 to 80 as 5056/57)

We ignore the reasons why these two crowns from the same engine and two cylinders side by side were found out of limit values. We gave all linked information's with this subject to our factory for investigations.
All piston rings were exchanged by new ones. By mounting the piston skirts and crowns all screws and joints were replaced by spare. All piston pins and small end bushes were controlled and found in MaK limits. (see Remontowa measuring sheets 5052-55; 5070-73; 5066-69; see: photos pdf piston and bearings)

Main and Big end bearings:

We controlled two main bearing shells of each engine and decided to keep all main bearing shells in place for again 12.000 running hours. All big end bearing shells were exchanged. (see: photos pdf piston and bearings)

Camshaft bearings

The clearances of all camshaft bearings and the axial clearance were controlled by the Yard. All values were found in MaK conditions (see Remontowa measuring sheet 5051; see photos pdf camshaft and geartrain). All four camshaft damper were exchanged.

Crankshaft

All four crankshaft dampers were dismantled four inspection executed by a technician from the maker GEISSLINGER. They were found in very good conditions and put back in place.

Gear train

All backlashes inside the gear train and the backlash of the governor train were controlled by the yard (see Remontowa measuring sheet 5093 and 5094; see photos pdf camshaft and geartrain)

Driven Lub oil pumps

The Lub oil pumps were dismounted for inspection in the workshop. On two pumps we found a lot of wear on the bushes and the screws. They were exchanged by spare pumps from board.

Injection pumps

All injection pumps were dismounted from the engine. 12 pumps were overhauled (engine 1+3)

The 12 pumps from engine N° 2+4 were replaced by new pumps of the version "15" following a commercial agreement between the owner and MaK.

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Cooling water pumps

All cooling water pumps were overhauled.

Governors and regulations

All four actuators were overhauled. The 4-20mA signals for "fuel rack position" and "overload" were readjusted.

Sea trials and performance tests

(see: running in program of Remontowa / see attached "MaK sea trials)

After long side trials with satisfactory we were going to have sea trials. Load steps from 50 – 100 % load. At each step all engine parameters were edited by the crew. At 100% load the combustion pressures were taken by MaK and edited by the crew.
All parameters found, showed that the engines are running in very good conditions and the values are corresponding to the "Test bed protocol"!!

P.S.: All measurement sheets of REMONTOWA and all edited values of Mont St. Michel during sea trials, are available in paperback form at MaKMed.

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