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Diesel Engineering Services



Attention Mr.: Victor Retamal
Reference: Report Services Repair box Equipment:
Equipment: Finnoy Propeller Box. G 50 FX. (transmission for propeller speed control)
Vessel: Seidvag
Request 1: Box presents angle and motion problems.
Request 2: Solve pressure and temperature control problems
Service port: Puerto Montt Forward.
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Reference No.: 18082019.1706.
Propulsion Box Service: Seidvag
The services done on: August 18-22, 2019

(Box Plate)



Work and service done:

Maintenance and full overhaul of Finnoy Propeller Box. G 50 FX. (transmission for propeller speed control).

After 250 work hours following the work and service done, the engine control system detected that the transmission was overheating and forced it to shut down.

At this stage the possibility of applying Polytron MTC was considered. Polytron distributor highly recommended to try it, since the transmission had to be taken apart anyways.



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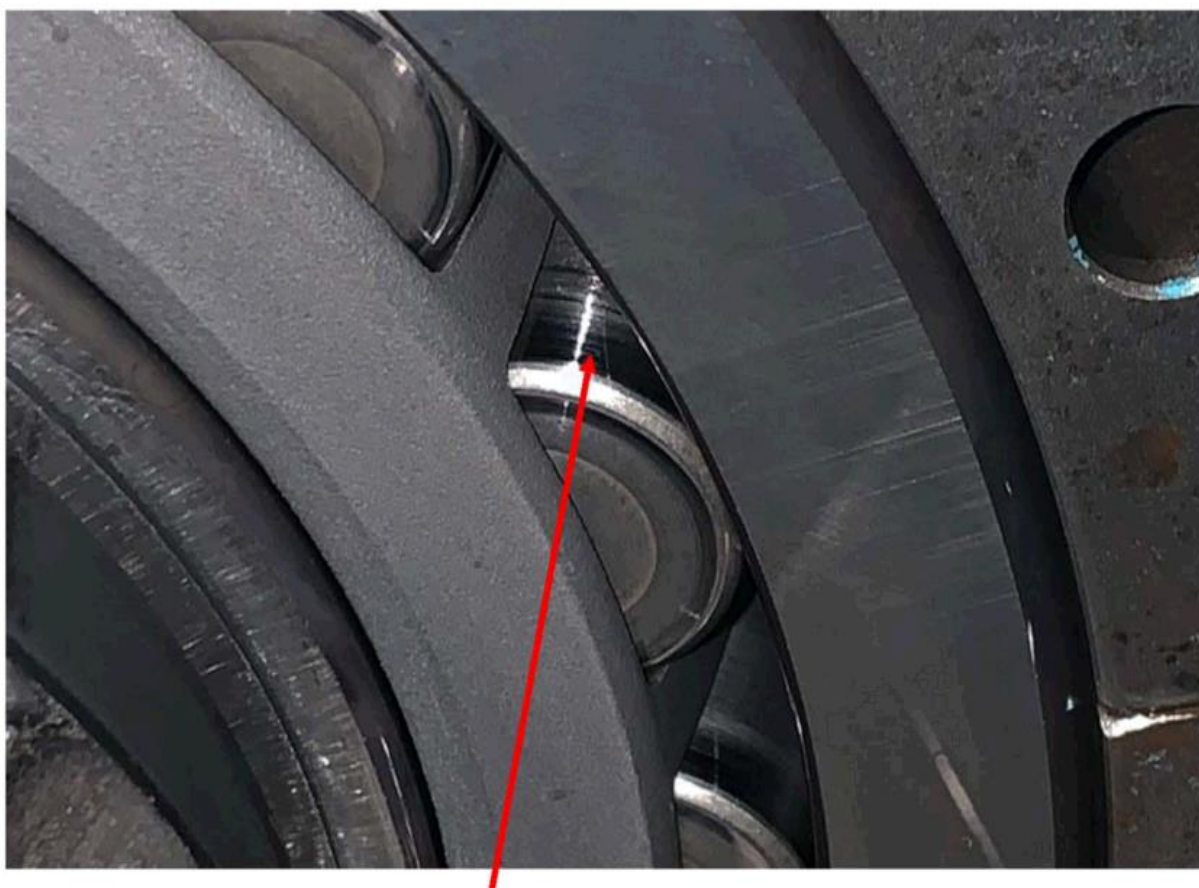
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After 6 hours of applying 5% (by volume) of Polytron MTC, to the total oil capacity of the propulsion box, Finnoy G50FX, the operating temperature of the propellant transmission box went down from 58° C to 43 °C and remained that low additional 250 workhours, until it was decided to disassemble it and see what caused its overheating before Polytron was added, so to speak, we decided not to stretch our luck.

The following photos are of the damaged parts of propeller box that were responsible for the box to overheat. It became clear to us that Polytron MTC actually stopped the wear and tear process resulting with the operating temperature going back to normal in spite of the damage on the parts.

Picture 1



Bearings with raceways and rollers, damaged by marginal lubrication caused by working with oil contaminated with water resulting with excessive wear and increase in operating temperature. It looks like Polytron MTC stopped this destructive process.



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Picture 2



(Status of the servo piston bar, which is part of the main servo piston of the oil distributor that controls forward and reverse motion, had mechanical damage and rusted surfaces in the area where it "runs." Torn off small pieces of metal as a result of micro-seizures, caused most likely by water contamination. This damage cause difficulty in angle control of the blades and increase in operating temperature.

Looks like that in spite of this damage, as soon as Polytron was added, this process stopped, and the operating temperature went down.

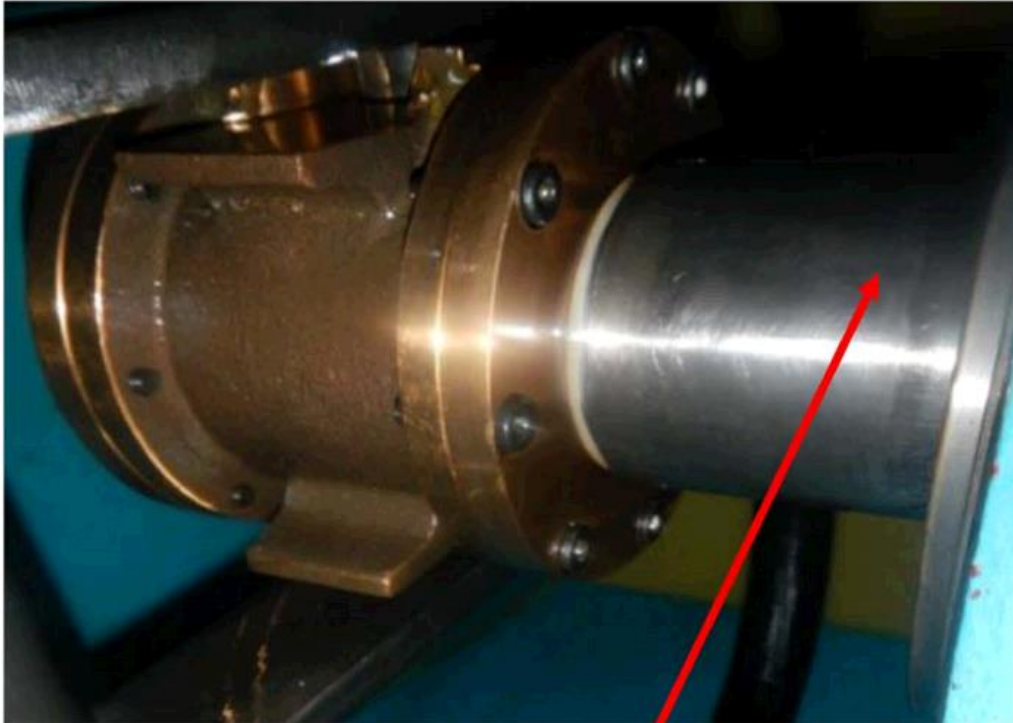


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Picture 3

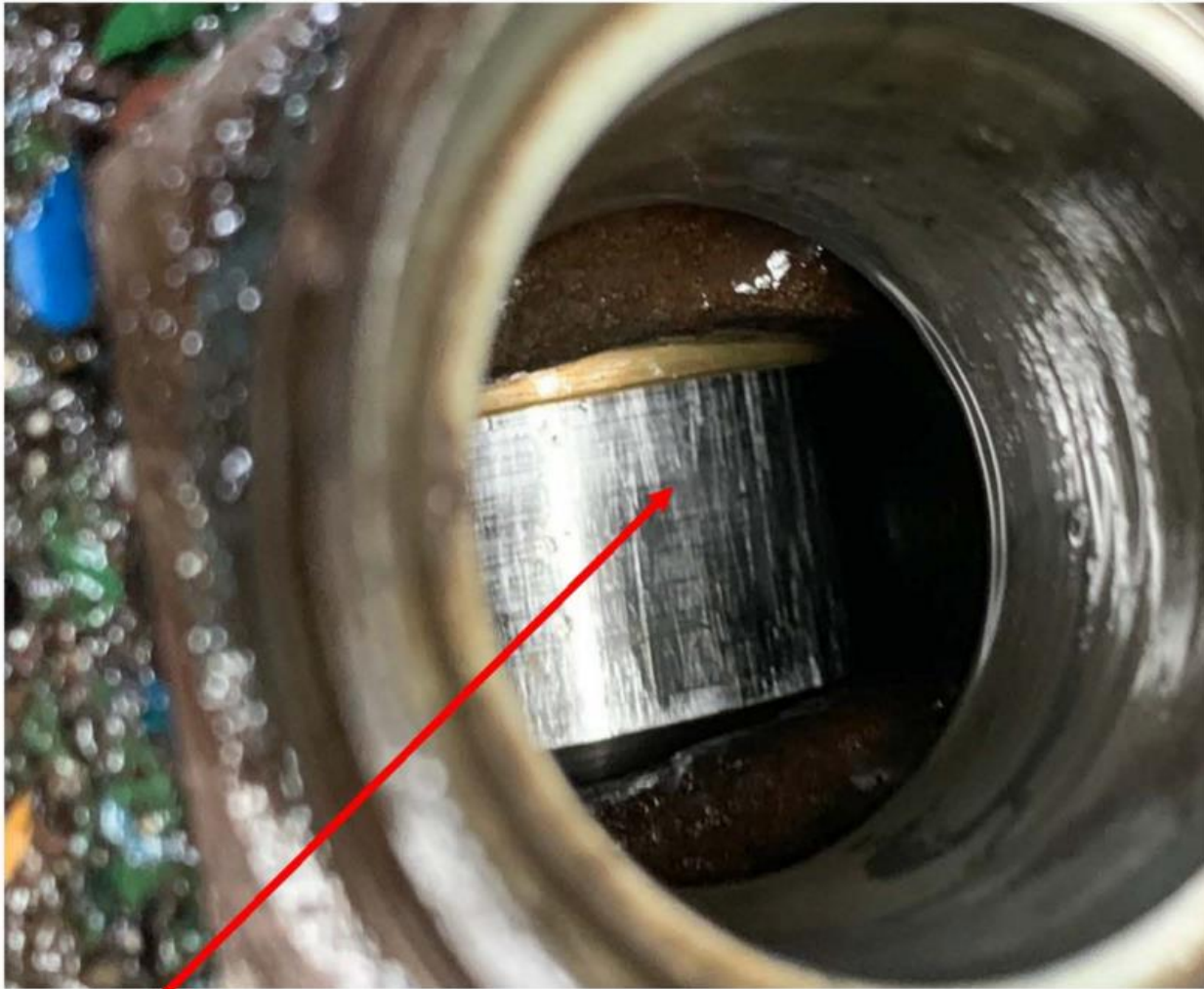


For comparison,
the initial condition of the "bar" when mounted in previous repair (overhaul) of the box.



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General pressure control piston.

Many large deep scratches were observed, because of poor lubrication due to water contamination.

Valve pistons have to remain polished, in order to allow valve to work properly.

After applying MTC, the

Conclusion.

The application of Polytron MTC, not only helped to lower the operating temperature and stabilize it, but also at the time of inspection of disassembled parts of the propulsion box, it was observed that MTC protected them from high workloads and lubricating oil that was highly contaminated with salt water,



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box operate at least additional 250 workhours without catastrophic failure. In our estimate the box could still remain in service for at least another 250 workhours, but we decided not to stretch it.

It is recommended to continue with the use of Polytron MTC and apply it in the fleet equipment and the vessel engines.

Guillermo Muñoz P