



Technical Circular

No.: 064/2016

Date: 27th December 2016

To whomsoever it may concern

Subject – MAN B & W Cooling Jacket Failures.

- USCG has issued safety alert 17-16 (copy attached) related to failure in the cooling jacket of MAN B&W MC-C engines on to which cracks have occurred around the bolts of cooling jackets.
- In MAN B & W MC-C series engines cooling jacket is held in place or secured by the use of shoulder type bolts that go through the cooling jacket and into the sides of cylinder cover.
- In recent years, these engines have experienced fractures or cracks vertically through these bolt holes.
- This failure causes loss/reduction of engine cooling water which further cause the overheating of the cylinder head. This results in automatic slow down of engine and thereby reduced propulsion and maneuverability of the ship which may lead to unintended grounding or collision.
- The fracture in cooling jacket can be caused by following:
 - a. Stress corrosion cracking
 - b. Inadequate coolant water treatment
 - c. Excessive rust and scale development
 - d. Use of wrong bolts to secure cooling jacket
 - e. Blockages of coolant flow throughout jacket space and cylinder cover passages
 - f. Overheating / thermal expansion of cylinder cover causing excessive stress on jacket head.
- The causes described above are related to maintenance and/or installation. Following precautions may be taken to avoid above:
 - a. Maintain inlet pressure within the range recommended by OEM and avoid fluctuation.
 - b. Coolant water treatment to be correctly selected maintained and monitored

- It is advised that regardless of engine manufacturer for the vessel, Owners, managers and operators are required to ensure that their vessel engineering staffs have access to all available manufacturer service letters for propulsion, electrical generation, steering and other critical equipment;
- Senior engineering personnel on vessels with MAN B&W MC-C and other similarly constructed engines using the same cooling jacket cover securing method are required to review the applicable maintenance procedures and ensure that persons assembling these components know that the shoulder bolts may not butt up against the cooling jacket cover, as breakage may occur if forced, and that regular bolts with no shoulders should never be used.
- Ship Owners and managers are advised to take note of above.

Enclosure:

1. USCG safety alert 17-16 (copy attached) related to failure in the cooling jacket of MAN B&W MC-C engines

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