



TECHNICAL CIRCULAR No. 064 of 13th June 2012

To:	All Surveyors/Auditor
Applicable to flag:	All Flags
Subject:	Surveys of Steering Gears
Reference:	CLASS – MACHINERY SURVEY

SURVEYS OF STEERING GEARS

Steering failures attributed too ineffective or improperly fitted locking arrangements of mechanically connected (screwed or bolted) steering gear components, continue to be reported. Reported instances include:

- piston backing off the ram
- ram working free from yoke
- trunnion securing devices (nut) loosening

Prior to conducting operational tests of the steering system, examination of the following should be considered, keeping in mind that propeller-induced vibration is frequently severe in the steering gear area:

- All accessible mechanical connections shall be carefully examined to confirm the continued effectiveness of the locking or securing arrangements. In particular, the Surveyor shall check for evidence of movement, loose set screws or slack bolts, and for improper installation of locking arrangements.
- Open all steering gear hinged motor starter and switchgear boxes and examine for loose wiring connections or equipment mounting screws, frayed or broken control wiring (especially in way of door hinges), and evidence of moisture or corrosion on terminals or connections, and dirt or debris. Check insulation resistance records.
- Check for free and smooth mechanical operation of start-stop and transfer switches.
- The piping, valves, flanges, pipe supports, and other pipe connections of the hydraulic system should be examined for evidence of leakage, looseness, and vibration wear-and-tear.

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Page 1 of 2

- The mounting and foundation bolts on all hydraulic and electrical equipment should be checked for tightness by sounding same.
- Check all attachments related to piping and control linkage for tightness.
- Examine control linkage, linkage pins and keepers, ram guides, and oil seal glands for excessive wear, proper alignment, and securing.
- If practical, hand-rotate each motor and pump assembly for an indication of condition during rotation.
- Check for slackness in couplings and examine the area around each coupling for evidence of oil slinging or wear, this may be a sign of imminent coupling failure or excessive lubrication of the coupling assembly.
- Check motor end-bell ventilation openings for cleanliness.
- Check for proper level of hydraulic oil, overall cleanliness, signs of emulsion or entrained metal filings, and sufficient supply of replenishing oil in oil storage tank to recharge the complete hydraulic power system and power unit reservoirs.

REFERENCES:

CLASS – MACHINERY SURVEY

ATTACHMENTS: No.

Kindest Regards,
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