For Marine Services

Service Report

Report no.: 432
Report date: JUNE 25, 2025
Location:
SUEZ ANCHORAGE AREA
Vessel Name: CAPE ZOYA
IMO no.: 9353620

Final Report

During routine machinery inspection and maintenance rounds, our technical team attended to the main engine fuel injection pump after it had been initially reassembled by the ship/vessel crew.

Upon inspection, an operational anomaly was identified: **the fuel rack control linkage with its actuating arm was observed protruding abnormally outward**, indicating improper assembly and mechanical binding risk.

Recognizing the critical nature of fuel injection controls, the team decided to completely dismantle the pump assembly to investigate root causes, verify internal components, and restore the mechanism to standard operating compliance.

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M. V. CAPE ZOYA
CHIEF ENIGNEER

Following the complete disassembly of the fuel injection pump, a thorough internal examination revealed the primary source of the anomaly:

Missing Safety/Locking Component: The internal safety locking mechanism/pin of the operating arm had been omitted during the previous reassembly attempt by the crew.

Rack Misalignment: Due to the missing safety restraint, the fuel rack and lever arm were displaced from their designated tracking groove, resulting in the abnormal outward projection observed.

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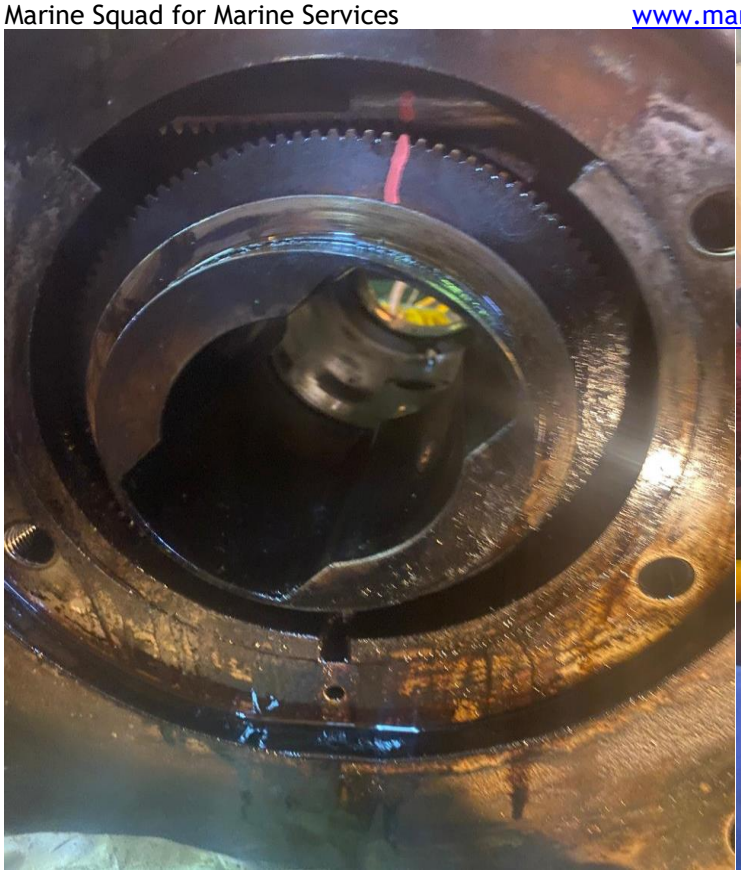

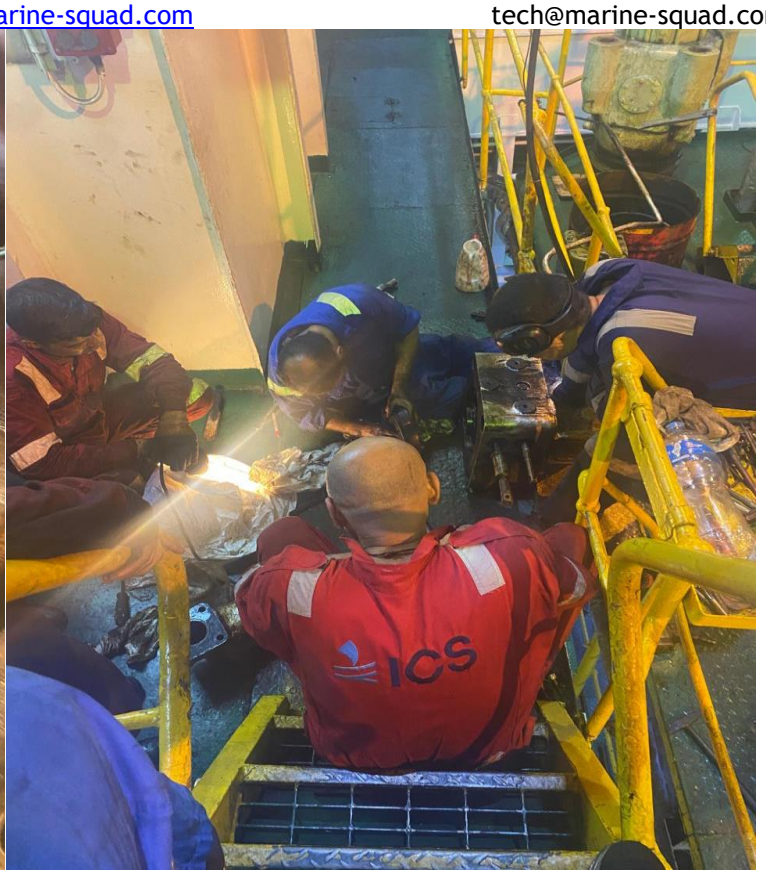

To rectify the fault and ensure reliable, safe operation, the engineering team executed the following corrective steps:

Gear Realignment: Carefully reset and aligned the fuel rack and control arm to their exact standard positions relative to the internal gear teeth, ensuring smooth engagement across the entire operating range.

Safety Restraint Restoration: Reinstalled and verified all internal safety elements and locking components associated with the operating lever mechanism.

Complete Reassembly: Reassembled the fuel injection pump housing, barrel assembly, and control linkage with strict adherence to manufacturer specifications.

VIT System Verification: Thoroughly inspected and verified the **VIT (Variable Injection Timing)** linkage and actuator system to guarantee precise injection timing control under load.

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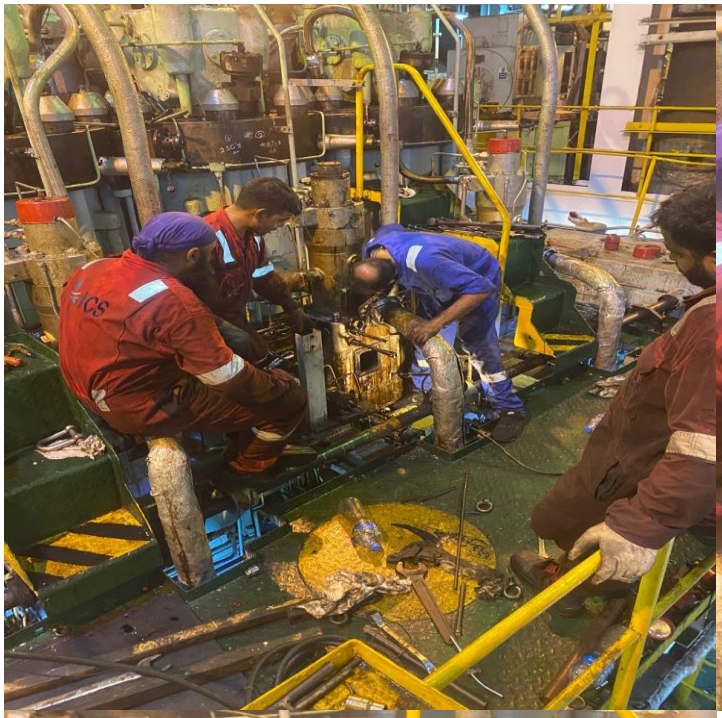

Upon completion of the reassembly and verification of the VIT system:
The main engine was safely rolled and started.

Extensive operational checks were conducted to monitor fuel rack responsiveness, governor feedback, and cylinder performance.

The system confirmed normal operating parameters with zero binding or irregular feedback from the fuel control linkage.

Conclusion: The equipment is fully certified and returned to normal service in optimal operating condition.

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