CASE STUDY

OISD/CS/2026-27/E&P/02 **Date: 06.05.2026**

INTRODUCTION

Title: Fall of travelling block.
Location: Onshore workover rig.
Loss/ Outcome: Financial loss.

BRIEF OF INCIDENT

An incident of falling of travelling block occurred at chartered hire workover rig. The incident occurred during the process of carrying out fishing job in the well. Travelling block suddenly moved down for approximately one meter and rested on Kelly during reciprocation of the string. This resulted in damage to the Kelly. Falling of travelling block was controlled using auxiliary brake.

OBSERVATIONS/ SHORTCOMINGS

- Discussion was ongoing on the derrick floor to decide fishing strategy while mechanical brake was applied. The mechanical brake was secured by locking chain. Pneumatic brake was not engaged as inferred from the documents.
- Mechanical brake was released by shift in charge to resume operation after deciding on the next plan of action. It was noticed that travelling block started descending and rested on Kelly after application of auxiliary brake. It caused damage (slight bend) to Kelly. Driller could not explain sequence of operation during interaction. It is not clear whether the driller had used hoisting lever for lifting drill string or accidentally released the brake. CCTV did not cover driller's operational area.
- Multiple horizontal cracks were observed at several locations on the left-hand brake drum. These cracks are likely to have developed due to leakage of cooling water, which came in contact with the braking surface, thereby significantly reducing braking efficiency.
- The brake shoes were observed to be unevenly worn out and burnt. As per the draw-works logbook entry, all brake shoes were replaced recently. The reason for replacement of brake shoes was not mentioned in the logbook. The details of the manufacturer of the replaced brake shoes could not be verified from the available documentation, indicating a possibility that non-OEM / non-standard brake shoes may

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have been used. The presence of cracks on the draw-works brake drum was not reported or recorded during this maintenance activity.

- There was no mention of any deficiency and ineffective working of draw works as per daily equipment check list.
- Logbooks of major equipment like Draw work, Travelling Block, Compressor etc were not being maintained incorporating major overhaul and replacement of parts.
- Internal enquiry was conducted by multi-disciplinary team for Hi-potential near miss which had mentioned about instrumentation air system leakage, leakage of cooling water to brake drum and leakage of clutch oil. There was no corresponding record or escalation for repair of these issues.
- During interaction with maintenance crew, it was informed that leakage of cooling water was continuing since last well location and could not be arrested. The crew could not confirm about leakage in instrumentation air system and clutch oil.
- It was found that no essential maintenance training was provided to any mechanical crew except mandatory training like MVT. Gap analysis as per OISD-STD-176 was not carried out.
- Bridging document does not mention regarding the role and responsibility of Installation Manager (IM).

PROBABLE ROOT CAUSES OF INCIDENT

- Improper operation of the mechanical brake by the shift-in-charge. This might have occurred due to the brake being disengaged, without engaging the hoisting system.

CONTRIBUTING FACTORS:

- Poor and ineffective maintenance of rig equipment.
- Uneven worn-out brake shoes and horizontal cracks in the left-hand brake drum might have resulted in cooling water of brake drum coming in contact with braking surface and resulting poor braking action. This resulted in loss of desired mechanical property required for brake to function properly.

RECOMMENDATIONS

- The organization should strengthen the system to sensitize operating personnel about risks and consequences of erroneous operations and ways to improve alertness during operations.
- Authority and responsibility of Installation Manager (IM) / Company Man on chartered hire rigs should be reviewed and clearly defined.
- The organization needs to systematically identify gaps in the existing practices followed on chartered-hire rigs with respect to monitoring, escalation and timely closure of maintenance and safety-related issues to ensure effective compliance and sustained operational safety.

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- The gap in competence level of rig personnel should be identified and addressed as per OISD-STD-176.
- The preventive maintenance schedule should be strictly adhered to. Logbooks should be maintained inclusive of major repairs and replacement of equipment parts. Traceability for the replacement of spares consumed should be maintained with quality considerations.
- Root cause analysis of failures of critical components shall be carried out, and the resulting recommendations shall be effectively implemented.
- The rig crew should be trained and encouraged to identify and report unsafe acts and unsafe conditions. Appropriate corrective action should be ensured as per OISD-GDN-206.

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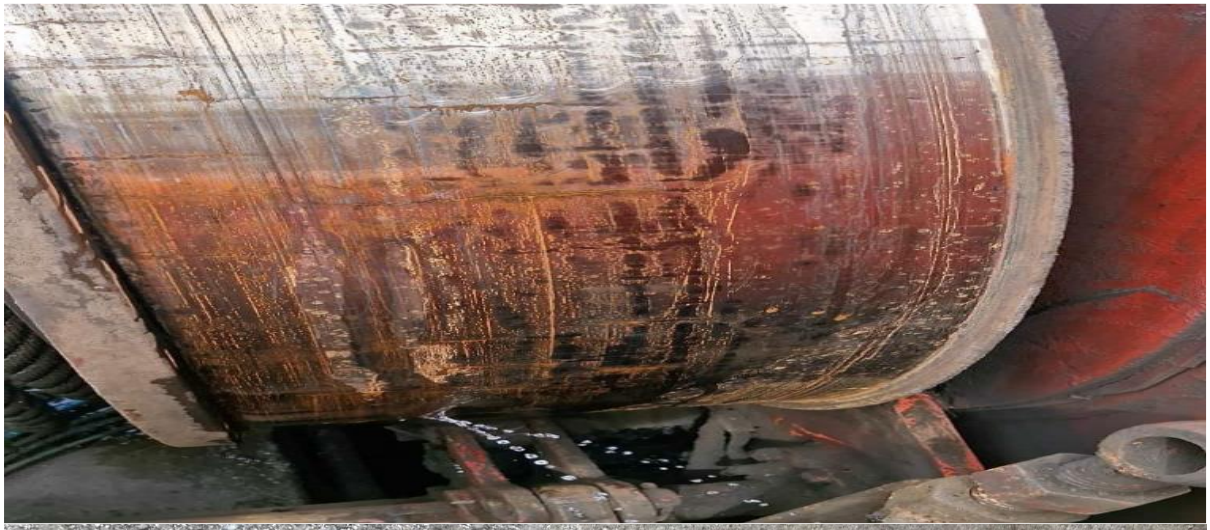
Pictures of Brake drum and shoe after the incident





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