FATAL ACCIDENT AT WORKOVER RIG DUE TO FAILURE OF CASING LINE

Introduction

An incident of failure (breaking) of casing line occurred at chartered hired workover rig. As a result, travelling block fell down on the derrick floor, injuring three persons (2 rig man and 1 helper). After first aid they were sent to hospital for further treatment, where one of the injured succumbed to injury.

Loss due to Accident:

1. Fatality of one person
2. Damage to property
3. Delay in the completion/servicing of well leading to loss of Hydrocarbon production

Brief description:

- Scrapper running in job was going on after cement drilling job, on 29.03.2011 morning.
- After running in of 7" scrapper with 1 single and 39 doubles of 2 7/8" drill pipe, travelling block was moving up to take another stand of drill pipe.
- At 05.15 hrs, when the travelling block was near monkey board, suddenly casing line broke and travelling block fell down on the derrick floor injuring three persons. After first aid they were sent to hospital for further treatment where one of the injured succumbed to injury on 30.03.11 at 1200 hrs.

Observations:

i) Assistant shift incharge who was operating the brake at the time of incident was doing extra duty from 1900 hrs to 0700 hrs. His actual duty period was from 0700 hrs to 1900 hrs. on the previous day. Retaining him on extra duty was without the knowledge of the rig coordinator.

ii) Apparently crown-o-matic device (a safety device meant to control the movement of travelling block) did not function; as a result travelling block moved up and hit the crown block, where the casing line (wire rope) got entrapped between crown block and travelling block that resulted in the breaking of casing line.

iii) Damage observed on the crown block members, monkey board, travelling block and derrick floor area.

iv) Derrick floor was very congested with number of equipment lying there.

v) Standard operating procedures (SOPs) for the rig operation were not available.

vi) No record or system to carry out daily inspection of rig mast / structure and hoisting equipment as per OISD-STDs-190 & 203 respectively was available.

vii) Rig In charge and Asst.shift in charge were not having well control certificate.

viii) Pre work over safety meeting and pre job tool box meetings records were not available.

ix) Mock drill records were not available.

x) Records of testing of various activities (BOP pressure test, casing line inspection etc.) are not being signed by company representative

xi) Dedicated rig coordinator was not there and the visit of the coordinator to the rig was also not regular due to shortage of manpower as informed.

xii) Though instruction register was available, time gap was observed in the instructions given.

xiii) Bridging document for interface management was not available.

Root Cause of Incident:

Immediate cause of the incident

The immediate cause of accident was breaking of casing line and subsequent falling of travelling block on derrick floor that resulted in the accident (Fatality).

Contributing factors

1. Insufficient rest to personnel

Assistant shift in charge who was operating brake at that particular instant was doing extra duty from 1900 hrs to 0700 hrs. His actual 12 hours duty period was from 0700 hrs to 1900 hrs. (on the previous day) and he was performing extra duty without the knowledge of rig coordinator. Continuous working could have affected his alertness.

2. Deficient assessment of situation, personnel competence

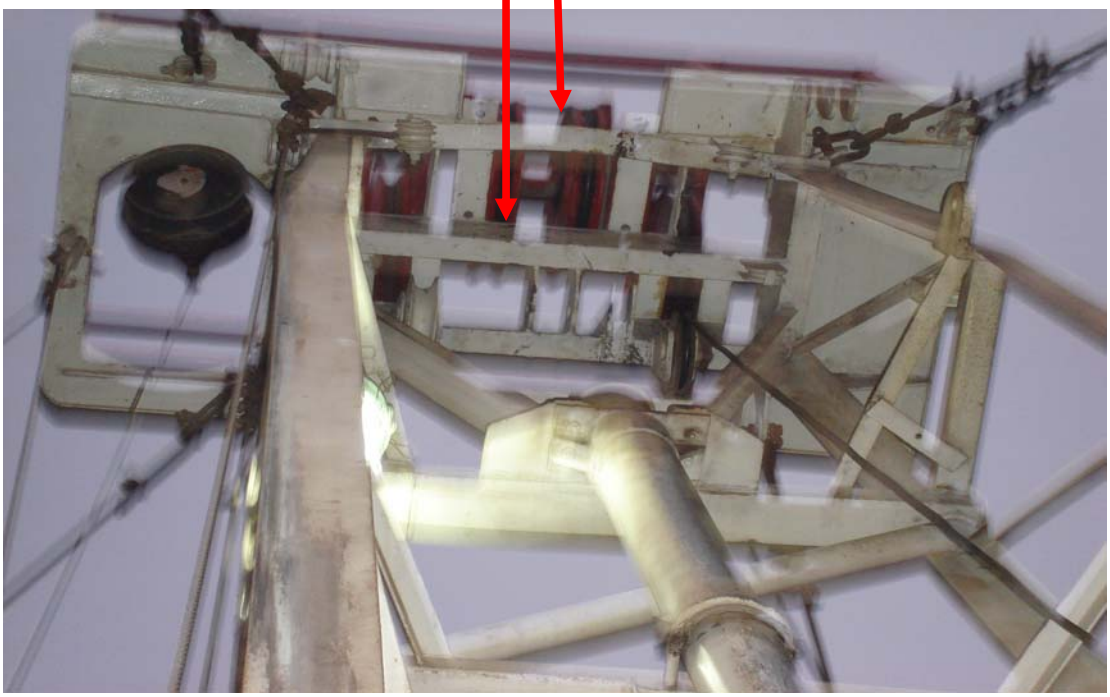
Presuming crown-o-matic device was operational, Asst. shift in charge could not assess/monitor audio visual alarm in the display unit of crown-o-matic device, which starts giving alarm at an early stage (approx. 3 mts. before set point). It shows casualness or lack of competency.

3. Crown-o-matic devices were either bypassed or malfunctioning.

RECOMMENDATIONS

1. Crown-o-matic and floor-o-matic device should always be operational and inline to prevent unsafe movement of the travelling block.
2. SOPs for the job undertaken by the rig should be available, and followed by the crew.
3. Sufficient rest should be provided to the rig crew.
4. Bridging documents between company and workover rig contractor for interface management should be available.
5. Contractor employees' safety should be emphasized (refer OISD-STDs-206 & 207.

Damage on crown block members



Derrick floor after the incident

Damaged casing line after the incident

Damage on travelling block