

# **“Sheave Uncontrolled Descent Onto The Rig Floor.”**

**HALLIBURTON**

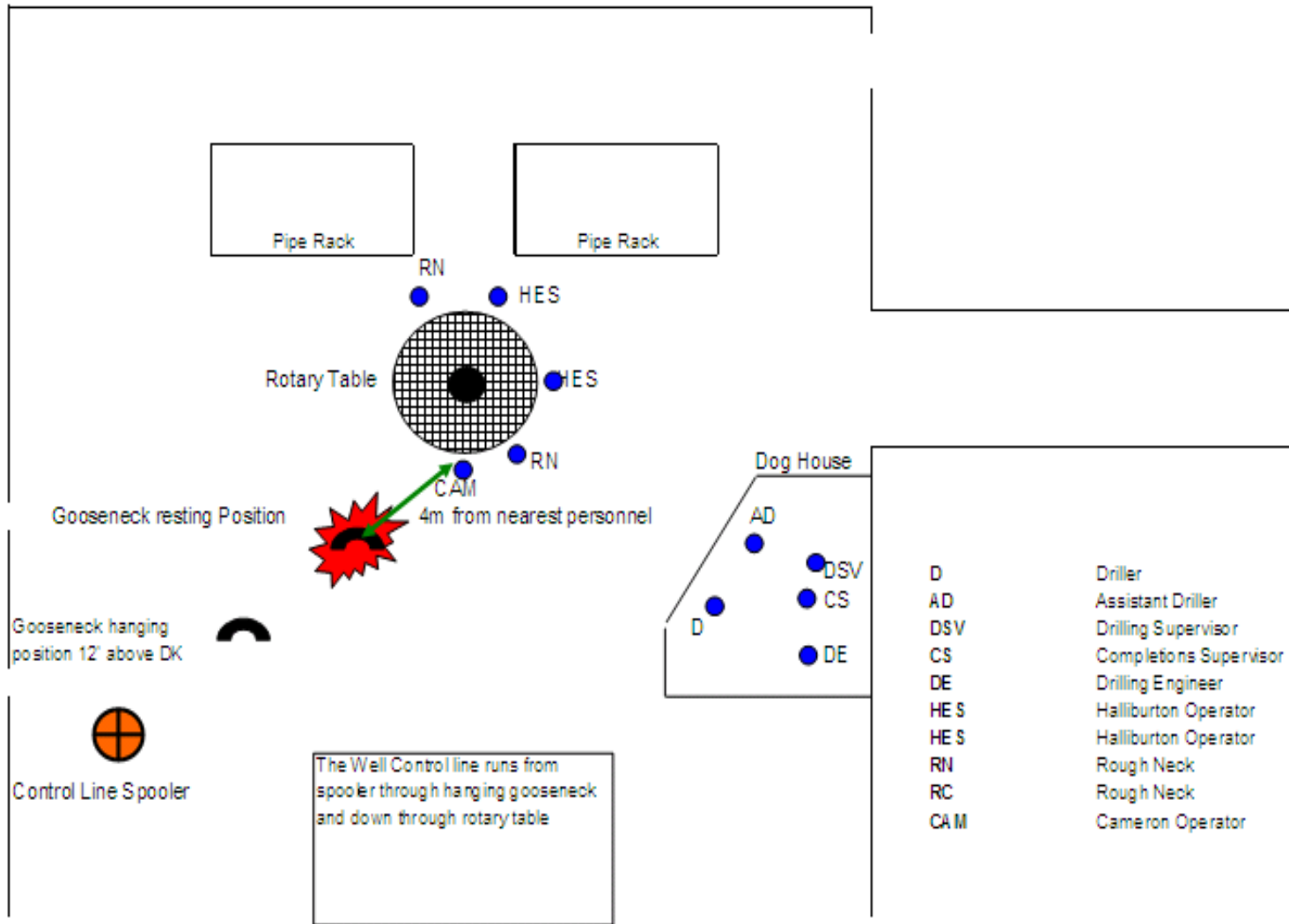
## **HIPO Near-Miss Incident**

**HSE Incident Number – RHS # 537980**

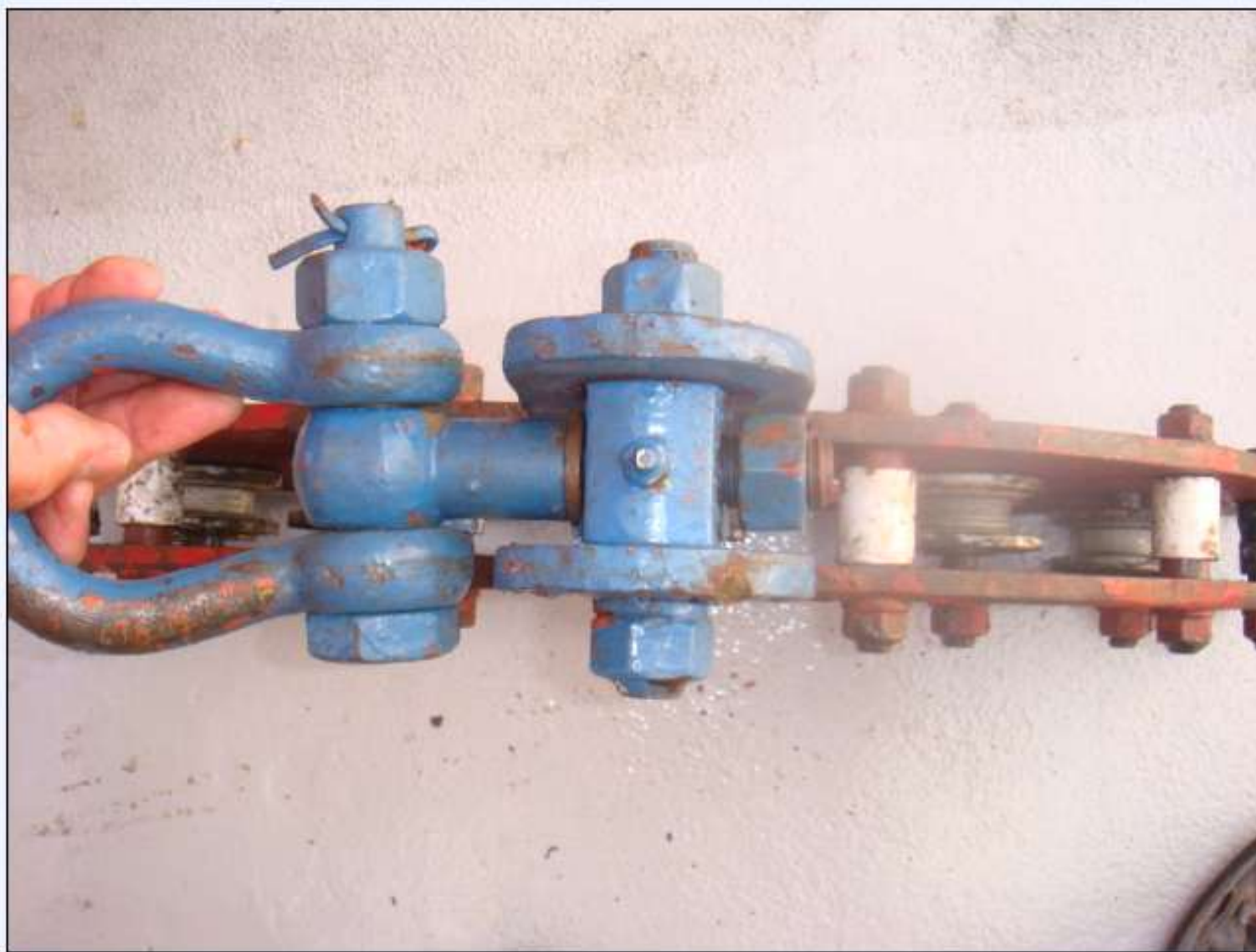
# Incident Description

- On 3rd March 2010, at about 16:30 hours while RIH with the 7” completion, the Halliburton TRSSSV (Safety Valve) control line sheave descended, uncontrolled, onto the rig floor.
- This was due to the sheave’s eyebolt-retaining nut backing off, allowing the sheave that weighed 48Lbs (22kg) to descend onto the rig floor.
- The sheave was suspended from the rig floor hydraulic hoist at a height of 12’ (4M) above the rig floor.
- The investigation reveals that the secondary retaining device (split washer) was inadequate to hold the nut from backing off.
  - The split washer was not recovered during the investigation but eye witness testimony confirms the presence of the lock washer during rig up.
- The sheave was certified (14/01/2010) and had passed the onshore QA/ QC inspection (as required by Shell load out process) on 31/01/2010.
- The incident did not result in injury to any of the employees or damage to any equipment.

Drill Floor Layout showing personnel positions



# SHEAVE GOOSE NECK



## ■ **Immediate Corrective Actions Taken**

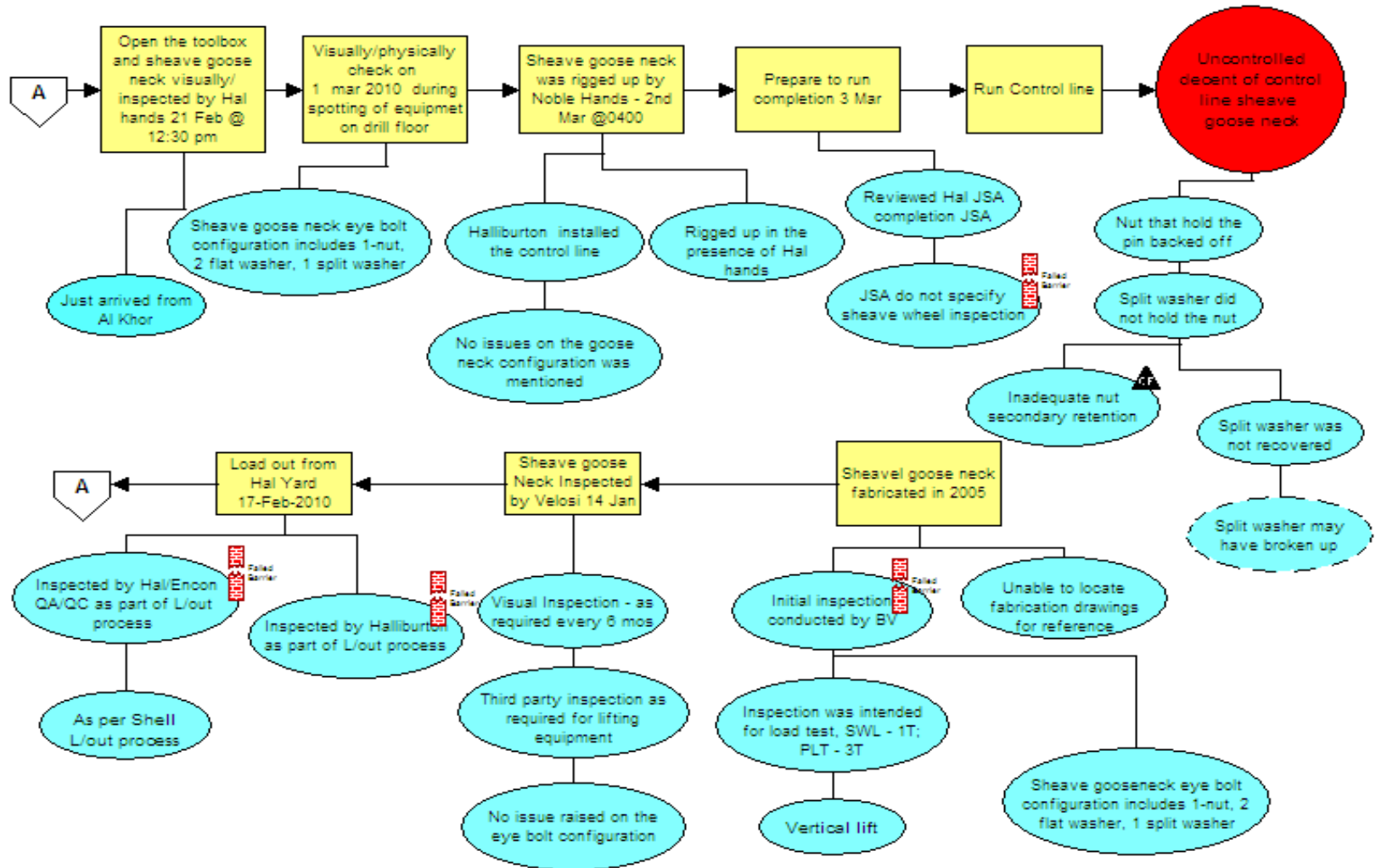
- Raised awareness to personnel on local locations.
- Inspected similar equipment at other work locations and ensured that appropriate locking cutter pin are installed.
- Quarantined other Sheave goose necks in the yard.

## ■ **Immediate Lesson Learned**

- Inspection and certification does not mean that equipment is safe and fit for purpose.
  - ✓ Responsibility remains with the end user to verify that the equipment is fit for purpose.

# HCT – SHEAVE GOOSE NECK NEAR MISS INCIDENT

## 3<sup>rd</sup> March 2010 @ 16:30 Hrs.



# Root Cause Analysis:

Using TapRoot- Root Cause Analysis, the investigation team established the following root causes that with effective corrective actions could prevent similar incident occurring again.

## Casual Factor 01:

Inadequate secondary retention for nut.

Root Cause 1:    Equipment Difficulty (1E)  
                         Design (2D)  
                         Design Specifications (3S)  
                         **Specifications NI (4SP)**

Comments:    During the investigation, it can not be established that in the fabrication of the sheave goose neck has a proper engineering drawing/design that meets International and/or Halliburton standards. No engineering designs were found. □

Root Cause 2:    Equipment Difficulty (1E)  
                         Design (2D)  
                         Design Review (3R)  
                         Independent Review NI (4IR)  
                         **Hazard analysis NI (5HA)**

Comments:    The sheave goose neck in question was fabricated in a local company in Qatar in 2005 and was inspected/certified by a reputable inspection company (BV) and found fit for use. Furthermore, it has undergone series of visual inspection both from Halliburton and the customer contracted QA/QC representative but the inadequacy of the nut retainer was not picked up as a hazard that may have resulted for the sheave goose neck to fail.

# Corrective Actions:

Causal Factor	Root Cause	Corrective Action	Completion Date	Responsibility
<b>Causal Factor – Inadequate secondary Retention for nut.</b>	Equipment Difficulty (1E) Design (2D) Design Specifications (3S) <b>Specifications NI (4SP)</b>	1.0 Quarantine and remove from service all locally fabricated equipment without the verified certification.	15/03/2010	HCT Shawn Almstrong
	Equipment Difficulty (1E) Design (2D) Design Specifications (3S) <b>Specifications NI (4SP)</b>	2.0 Verify process of fabricating) equipment locally.	15/03/2010	Halliburton QA/QC Roland Quiroz/Aldin
	Equipment Difficulty (1E) Design (2D) Design Specifications (3S) <b>Specifications NI (4SP)</b>	3.0 Replace locally fabricated equipment with Company/PSL approved design for operational requirement.	30/06/2010	HCT/PML Scott Cooper
	Equipment Difficulty (1E) Design (2D) Design Specifications (3S) <b>Specifications NI (4SP)</b>	4.0 Review the third party inspection process and ensure that it aligns to HSE/PSL and customer requirements.	15/03/2010	Halliburton QA/QC & HSE Roland Quiroz/ Aldin Isurita, Dan Baquilod
	Equipment Difficulty (1E) Design (2D) Design Review (3R) Independent Review NI <b>Hazard analysis NI (5HA)</b>	5.0 Review and as needed, revise existing JSA and/or Risk Assessment to include specific load bearing equipment (e.g. Sheave goose neck, lifting clamps, spooling devices, etc.).	22/03/2010	HCT Shawn Almstrong
	Equipment Difficulty (1E) Design (2D) Design Review (3R) Independent Review NI <b>Hazard analysis NI (5HA)</b>	6.0 Ensure that the installation of secondary retention device for sheave goose neck and similar devices are captured in the JSA and implemented/practices at all times.	22/03/2010	HCT Shawn Almstrong
	Equipment Difficulty (1E) Design (2D) Design Review (3R) Independent Review NI <b>Hazard analysis NI (5HA)</b>	7.0 Distribute and confirm understanding of Shell's EP 2009-9039 Prevention of Dropped Objects Manual across PSL's in Northern Gulf (Qatar & Kuwait). Manual to be made available to all Product Service Lines (PSL).	30/04/2010	PII H&S Teams ( NG-Qatar/Kuwait) Scott Cooper/Chris Barnes and Dan Baquilod (HSE)