E&P (Offshore)  

Title: Incident during testing of crane boom after broken yoke (Linkage) replacement  
Location: MODU (Jack up Rig) crane  
Activity Type: Testing of crane boom after repair  
Result/outcome: Crane boom damage including A Frame on top of the crane  

What Happened?

The boom of the crane got stuck at upper limit and was not coming down. On visual inspection, observed Yoke (Linkage) of Boom drum brake cylinder was broken. The broken Yoke (Linkage) was replaced. After replacing the Yoke, the crane boom needs to be function tested. Mechanic started the engine. Crane operator operated the boom lever and disengaged the boom pawl. The boom started to fall in an uncontrolled manner, resulting in complete damage to the crane boom.

What Caused It?

The maintenance task started with permit to work and tool box risk assessment was ascertained. During maintenance job for replacing yoke, the yoke was not coming free (because of space constraint) from connecting thread rod. The task was re-planned without MOC process by dismantling brake cylinder with solid control line to get free space for working on the equipment and then loosen the main spring in order to remove broken yoke from connecting rod. In the process of loosening the main spring the failsafe boom brake system setting got disturbed. This resulted into a situation where entire boom was resting on boom pawl without any securing (secondary barrier) in place. As a result when boom pawl was disengaged during testing the crane boom had a free fall.

Corrective Actions:

1. Prior to start of any task make sure Tool Box Risk Assessment-TBRA is in line with the requirement and procedure which need to be followed.

2. Supervisor's to check CAKES - (Comply, Authority, Knowledge, Experience and skills) and Original Equipment Manufacturer (OEM) manual is referred and followed by the assigned job crew.

3. Management of Change (MOC) process to be recognized if original plan cannot be followed.