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# Double securing Well Intervention



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Operations Director – Wireline

**Archer**

# Background

## **Havtil – The activities regulations § 92 Lifting Operations**

“It shall be ensured that personnel do not come under suspended loads”

### **NORSOK R-003**

#### 4.8.1 Fundamental Safety Requirements

Personnel shall not walk under suspended load.

#### 6.3.4 Well Intervention equipment

Before personnel may perform work underneath a suspended load, the load shall be secured so that the lifting appliance is not load-bearing

### **NORSOK R-002**

#### 4.1 Safety Goals

The lifting equipment shall be designed in such that no common cause failures or a single failure results in an unacceptable risk as determined by the risk assessment

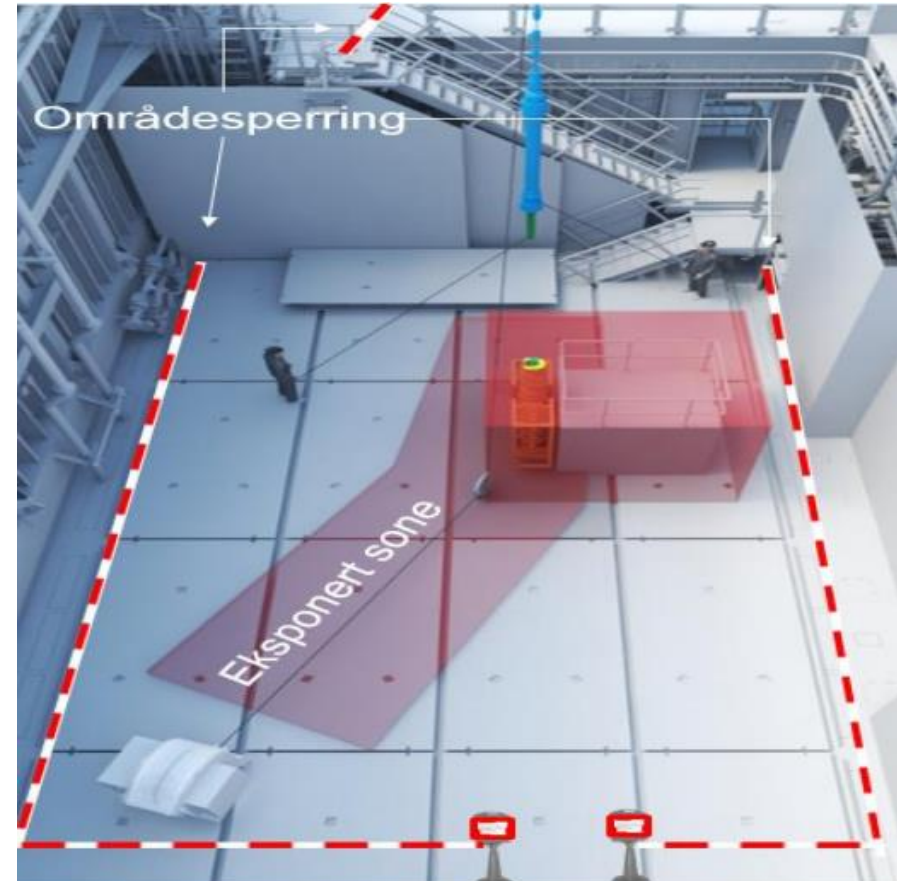
# Risk Assessment – Wireline Lifting Operations

## Norsk Olje & Gass – Håndbok for sikker håndtering av kabelutstyr (01.04.2019)

- Established as mitigating action for work close to suspended loads / red zone
- No technical solution available at the time handbook was published

### 5.1 Main Principles

- If possible, avoid manual handling of equipment in exposed zone
- Evaluate working position based on unintended movement of load
- Reduce time personnel is in exposed zone ALARP
- Reduce number of personnel in exposed zone ALARP
- Load shall be static before personnel enters exposed zone and guiding of load is done
- **Where possible, equipment related to wireline operations shall be double secured**



# New technology – Double Securing Installations

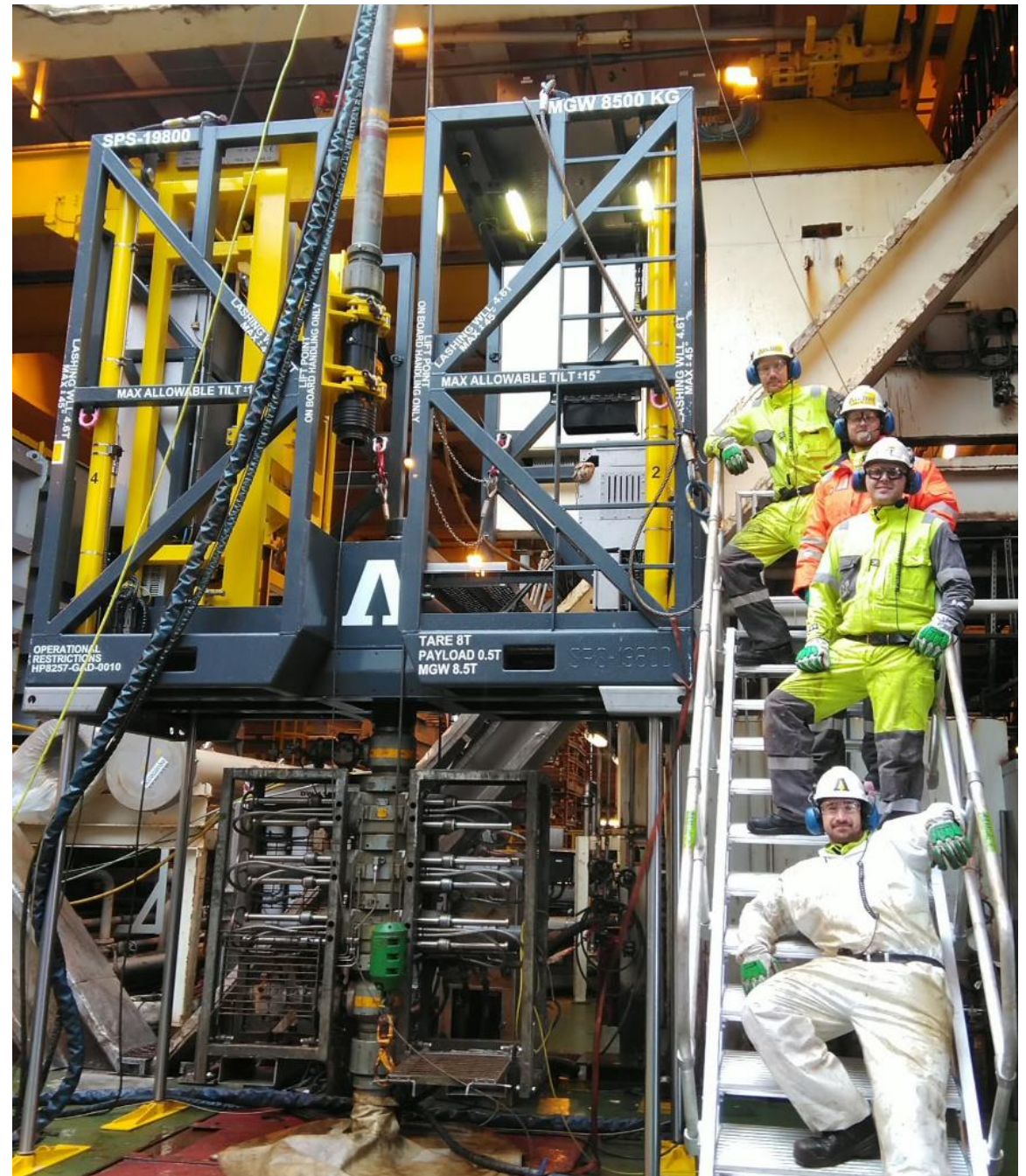
**2020 – Start of a journey with multiple double securing solutions introduced in the Wireline operations**

- Wireline Safe Frame (Norse Technology)
- LYNX mast (Dwellop)
- InterLift (Wellvene)
- ALPA winch (Axess group)
- Lubricator Securing Bridge (Stavanger Engineering)



# Wireline Safe Frame

- NORSOK compliance
- Connected with QU on top of WL BOP
- Provides double securing during BHA handling
- Removes need for scaffolding for access to BHA





# LYNX mast

- NOR-SOK Compliance
- No need for guy wires (secured in hatch)
- No scaffolding
- Low footprint
- Arm to guide and secure rig up



# InterLift

## Mechanically secured lifting of rig up

- No need for wireline mast
- Hydraulic piston to move (rotates) rig up away from well center
- Available in multiple configurations (BOP, QU size etc.)
- Total height and weight of rig up need to be considered case by case

## INTERLIFT™

### WEIGHTS AND DIMS

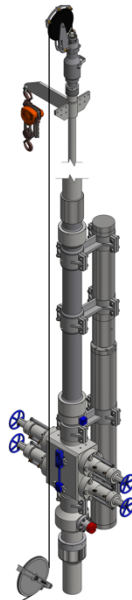
**Quad BOP** c/w lower piston assembly = 5.2T  
Height = 10.1ft  
I.D – 6.625"

**Dual BOP** c/w Lower piston assembly = 3.7T  
Height = 7.1ft  
I.D – 6.625"

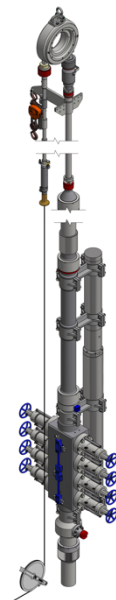
**Upper Piston Assembly** = 1.2T  
Height = 8ft  
I.D – 6.625"

**Toolstring clamp**  
c/w 2ft Lubricator Pup joint  
500kg lifting capacity

Slickline Dual BOP



E-line Quad BOP



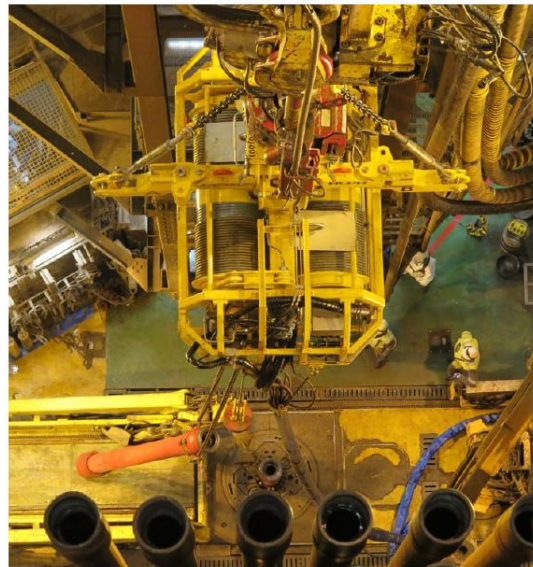
# ALPA Winch

## NORSOK R-002 Annex K class II system

- Connected to DDM to provide double securing lift Wireline operations on drill floor (through derrick)
- NORSOK R-002 Annex K rated dual winch system. Conventional method air hoist system (single system)

## ALPA - Redundant Winch

Redundant Lifting Appliance – Double Secured Winch for Traverse Crane and DDM Draw Work Mounting



Kvitebjørn - DDM setup



Gudrun – overhead crane setup





# Lubricator Securing Bridge

- Provides break-point above BOP or further up from bridge floor
- Bridge self-skidding (North – South)
- Lubricator securing module self-skidding (East – West)
- One remote control panel for operation
- Do not lift – only hold.





# Summary

- Before 2020 – limited technical solutions
- No “one size fits all”
- 2025 – More operations with double securing features than without (Norway)
- Norway leading the way – limited focus international (as of now)
- Focus and priority from Operators major contributors to development of mentioned solutions

