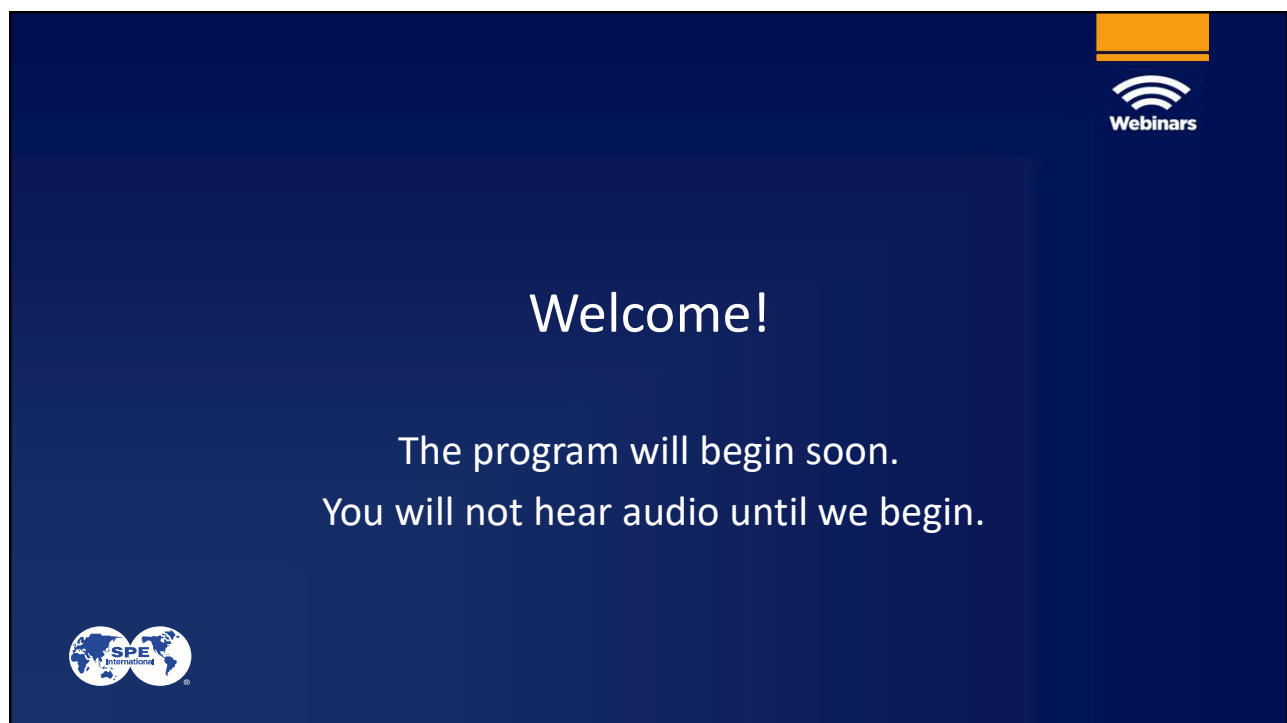




A dark blue rectangular slide with a lighter blue gradient in the center. In the top right corner, there is an orange square above a white Wi-Fi icon and the word "Webinars". In the center, the word "Welcome!" is written in large white font, followed by two lines of smaller white text: "The program will begin soon." and "You will not hear audio until we begin." In the bottom left corner, there is a white logo for "SPE International" featuring two globes.

Webinars

Welcome!

The program will begin soon.
You will not hear audio until we begin.

SPE International



PROGRESS TOWARDS CLEARING THE FLOOR

Kevin Scherm & Tom Yost
Nov. 16th, 2023







11,000





\$10

The logo consists of an orange rectangle above a blue Wi-Fi symbol and the word "Webinars" in blue.

11,000

\$10

The logo features two blue globes with the text "SPE International" in white.

Keys to Clearing the Floor



Remove Danger

Enhance Awareness

Improve Performance



Remove Danger

What makes something dangerous?

- 1) Remove the Potential
- 2) Remove the People



"MQ-1 Predator" by US Air Force is licensed under public domain



NOV owned image



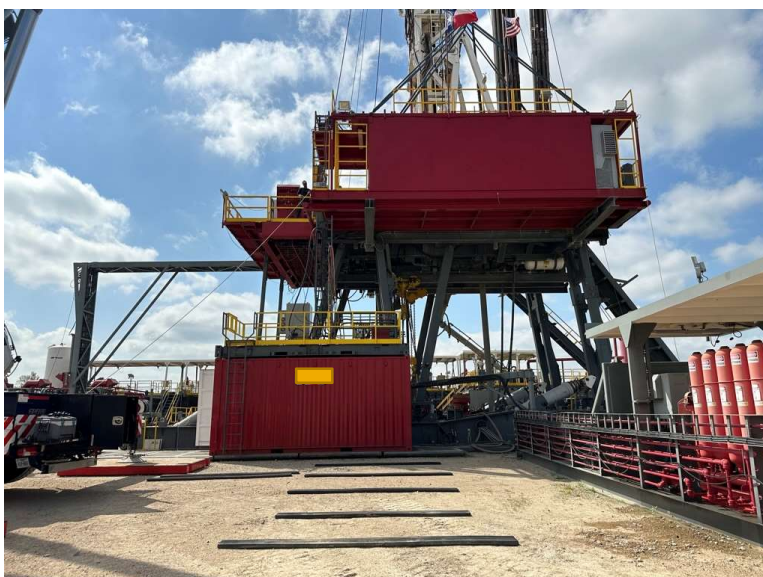
Remove Danger

From Rig Floor



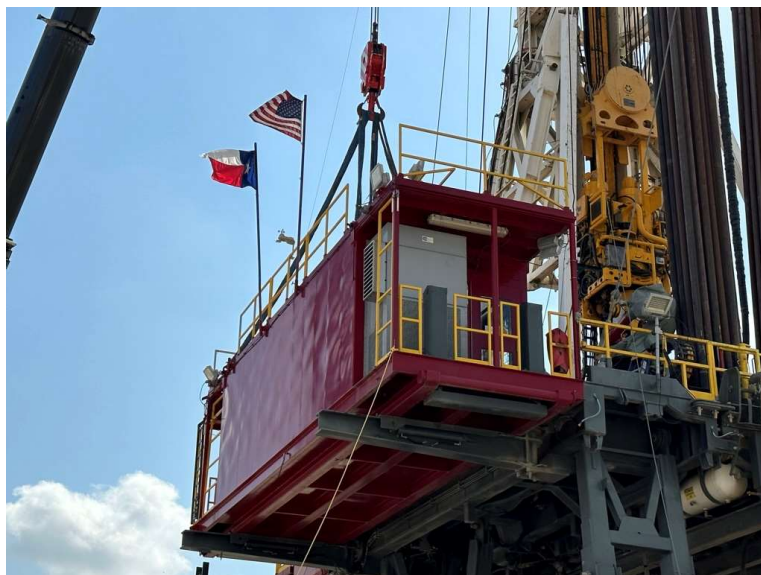
NOV owned image

Driller's House on Rig Floor



NOV owned image

Driller's House on Rig Floor



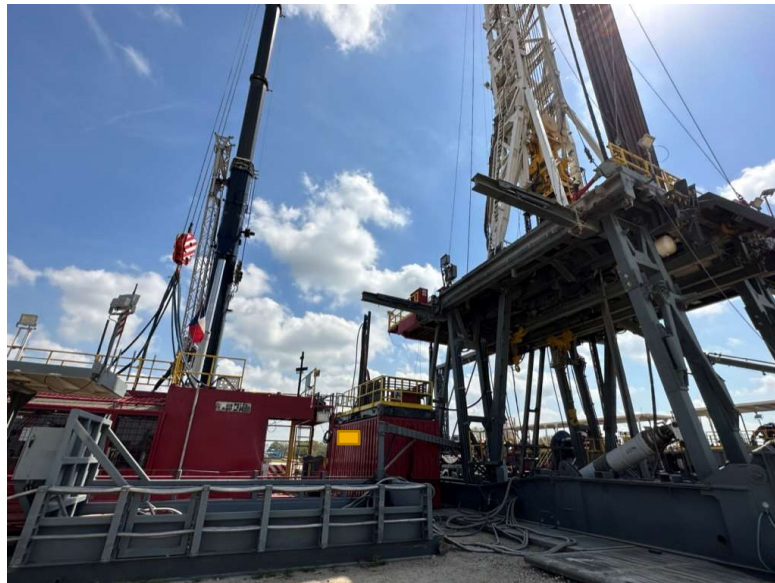
NOV owned image

Driller's House coming OFF Floor



NOV owned image

Driller's House on GROUND



NOV owned image

Increase Rig Floor Area



NOV owned image



NOV owned image

Increase Rig Floor Area



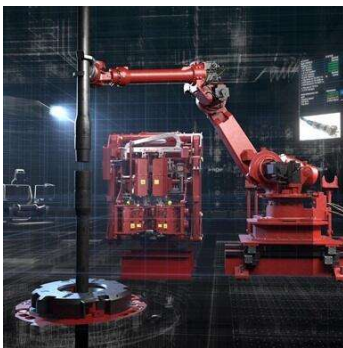
NOV owned image

Driller's House in Final Position



NOV owned image

Remove Danger



NOV owned image

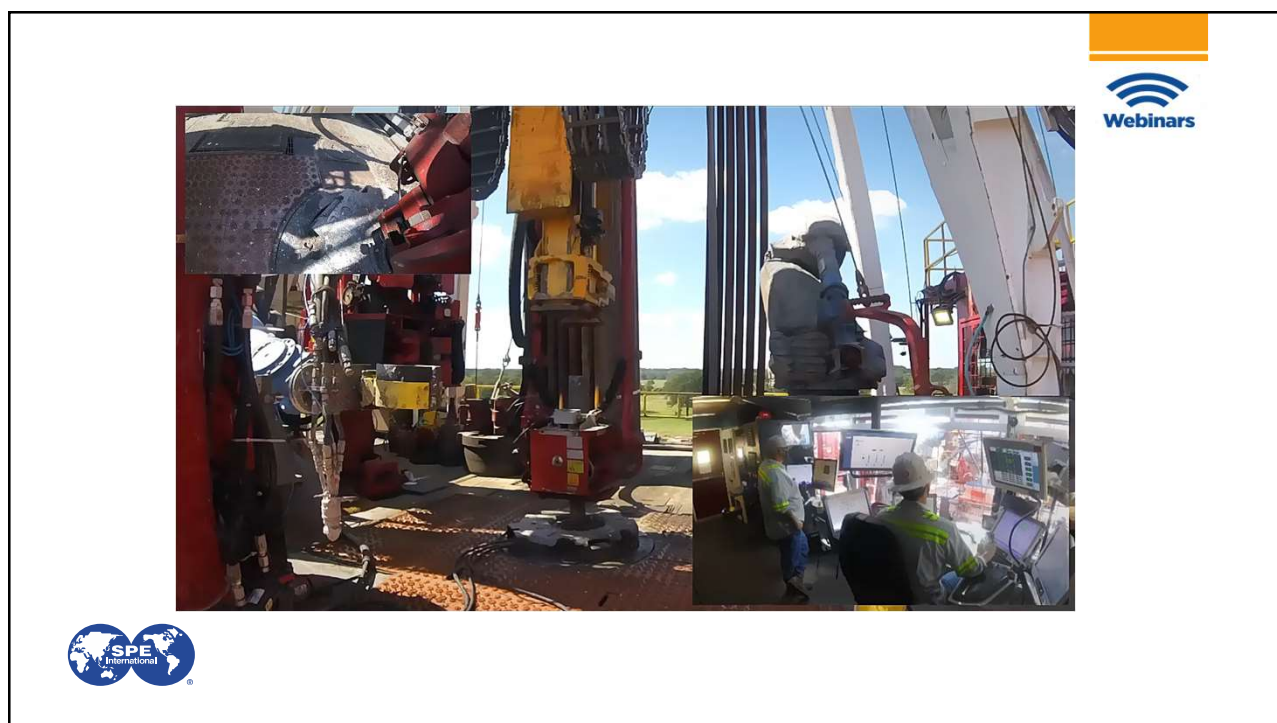


From Rig Floor

From Well Center



NOV owned image





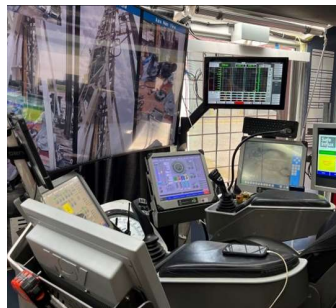
Video courtesy Valaris DS-17

Enhance Awareness

Better Decisions
 =
 Right Information
 +
 Right Time
 +
 Right Person
 +
 Right Frame of Mind

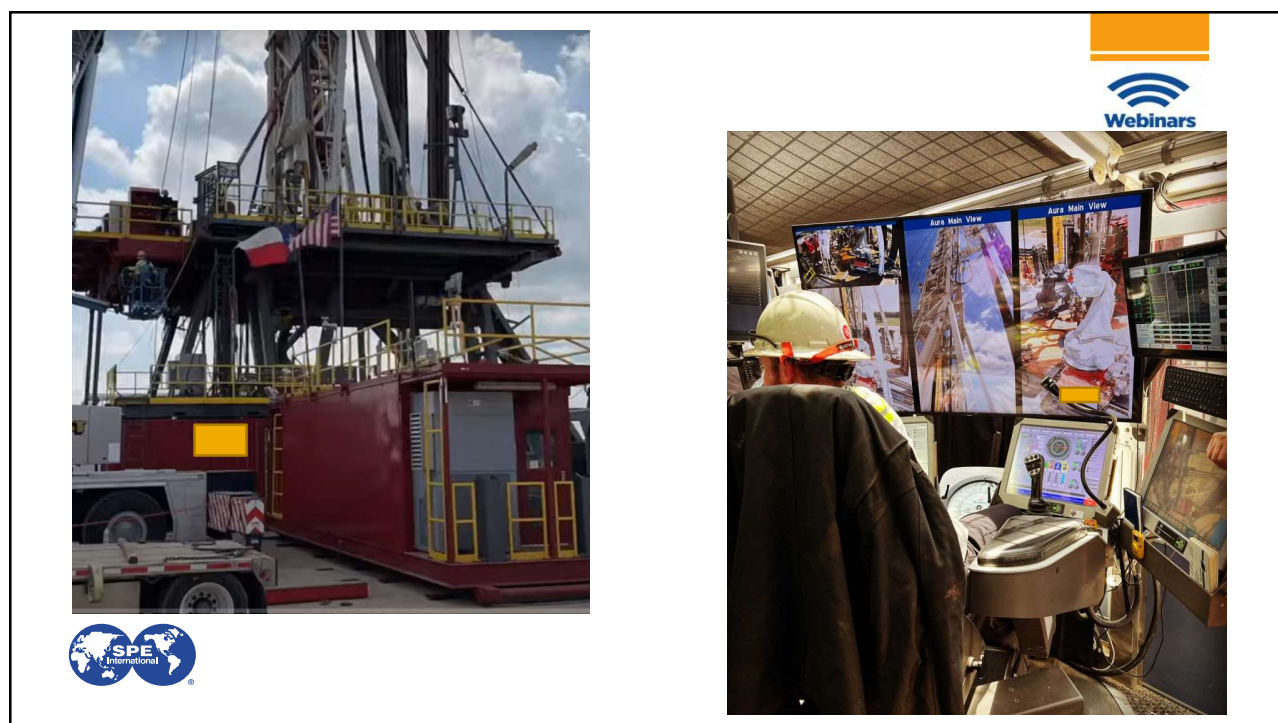


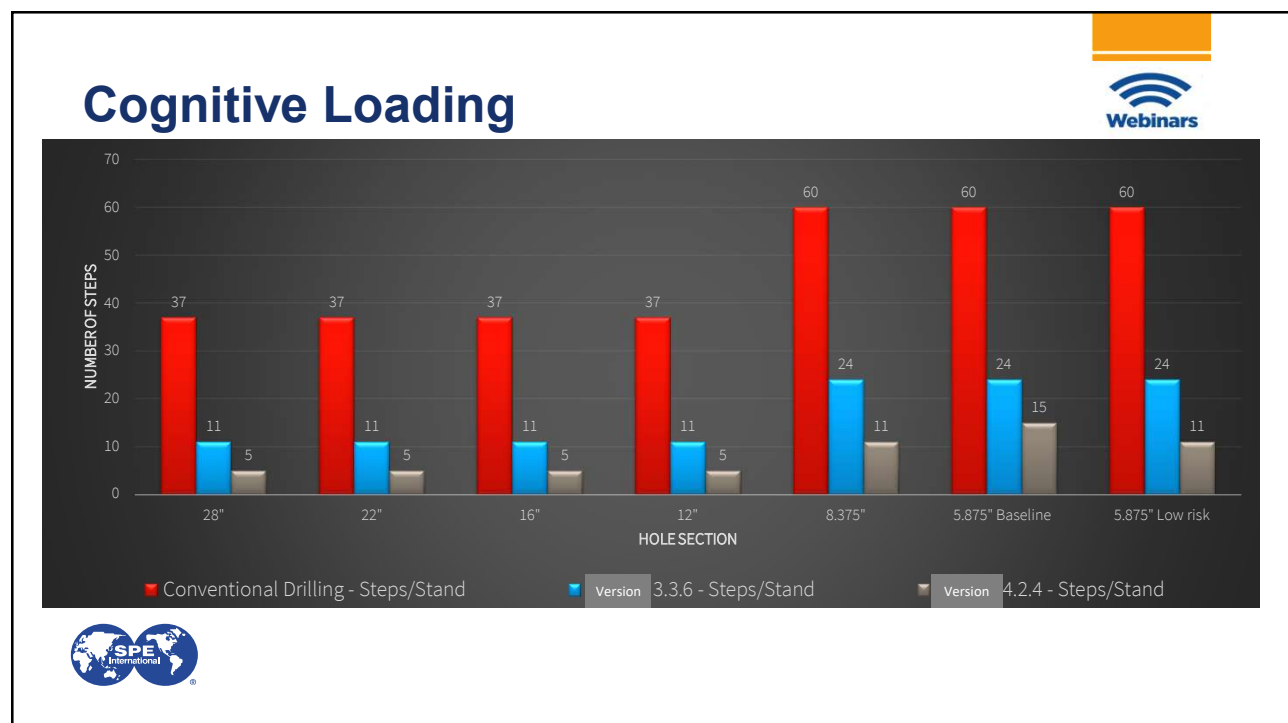
Block 50 ground Control Station by GSA-ASI is licensed under public domain



NOV owned image







Improve Performance



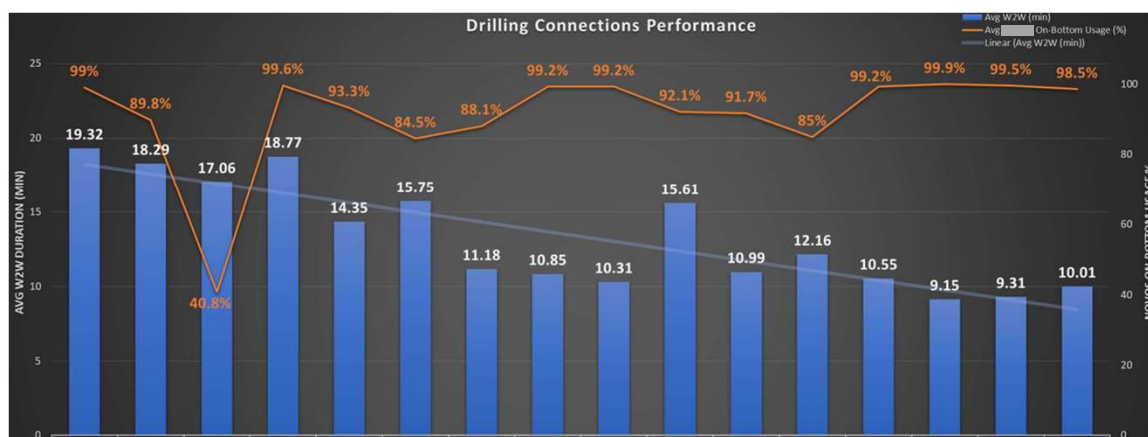
Consistency
Decreased Connection Times
Increased Tripping Speeds
Less Downtime



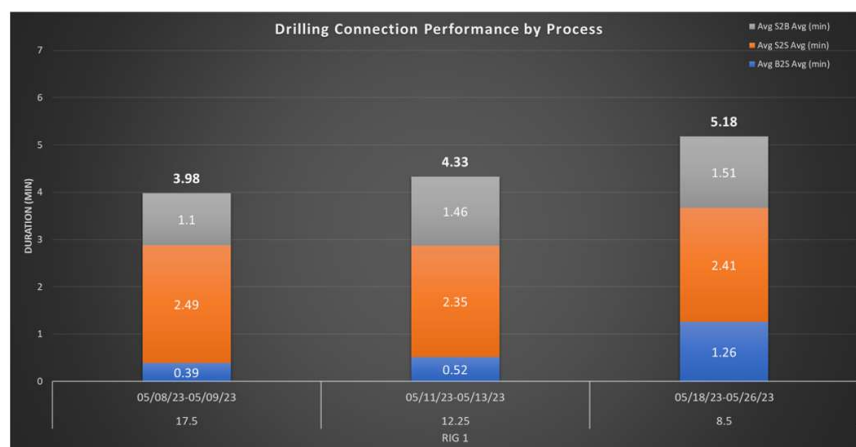
Consistency



Performance – Drilling Connection Times



Performance – Drilling Connection Times



Note: [Graph above shows average W2W times broken down by process (Bottom-to-Slips, Slips-to-Slips, Slips-to-Bottom) for each well section]



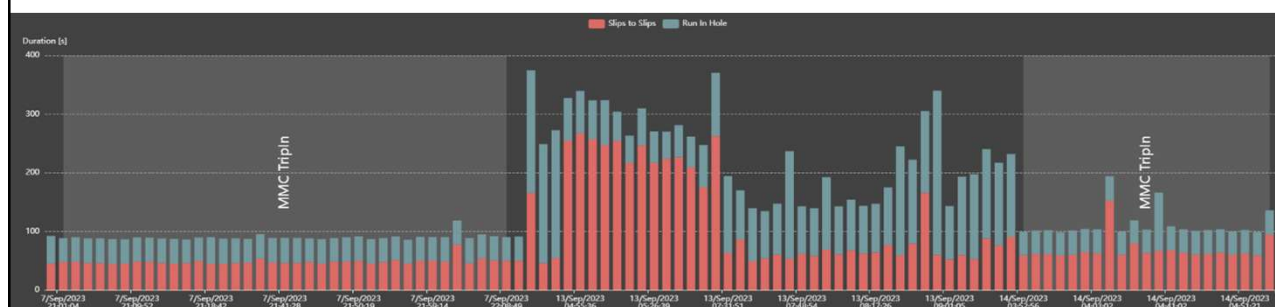
Consistency and Performance Results Tripping In (Before)



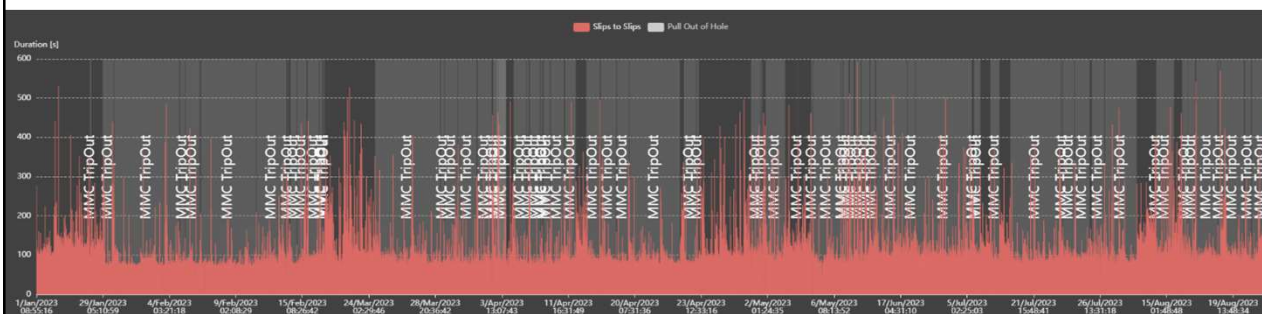
Main Well Trip In Time Breakdown

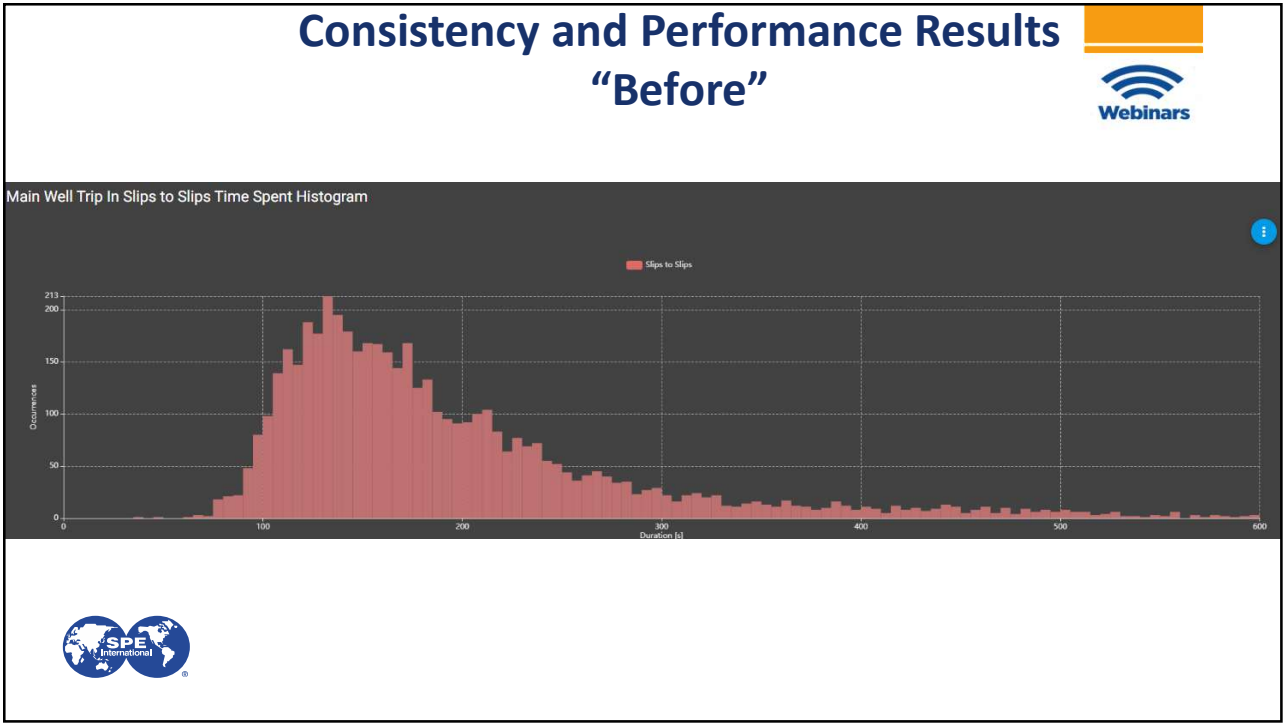


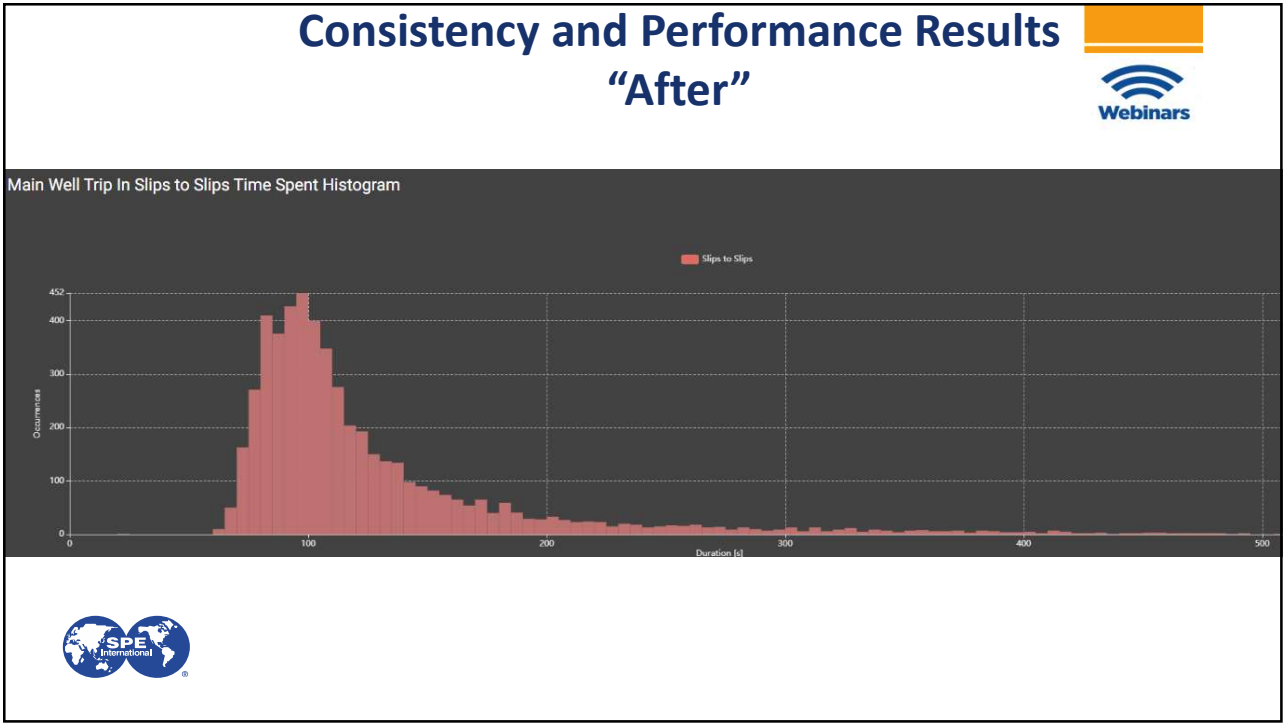
Consistency and Performance Results Tripping In (Cycle Time)



Consistency and Performance Results Tripping Out (Slips to Slips)







Consistency and Performance Results

Tripping Out



Main Well Trip Out Slips to Slips Time Spent Histogram



2022

Main Well Trip Out Slips to Slips Time Spent Histogram

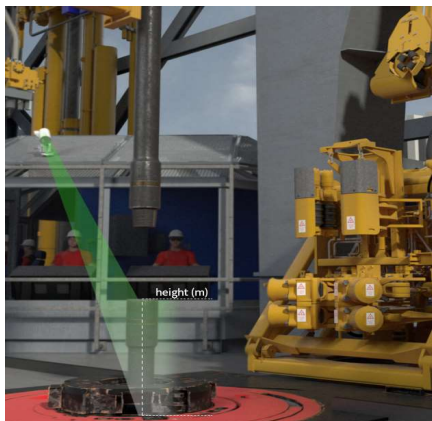


2023



Finding Stickup Height & Positioning Roughneck with Vision

Stickup Height Detector Enabled



- Vision Enhanced - Automated Solution
 1. Identifies Tool Joint
 2. Determines Height
 3. Sends information to Control System
- Destination Command
- Roughneck Path: Extend + Raise
- 5 to 7 seconds Saved/Connection

$$t^1 = T$$
A thick green arrow pointing diagonally upwards and to the right, starting from the bottom left and ending near the top right of the slide content area.

33

Finding Stickup Height & Positioning Roughneck with Vision



Field Deployment Images

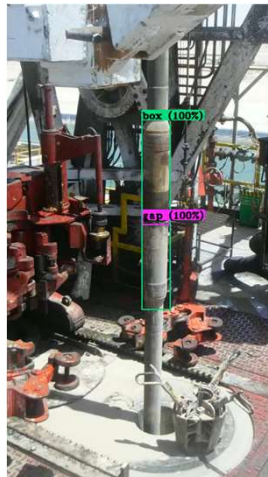


34

Finding Stickup Height & Positioning Roughneck with Vision



Field Deployment Video



35

Consistency and Performance Results



- North Sea Platform: Improve W2W Connection between 19% (17.5") & 32% (8.5") and achieved record S2S averages.
- High Spec Jack-Up: Achieved fastest 12.25" hole section average W2W. A 39% improvement.
- Ultra-Deepwater Drillship: 63% improvement in S2S performance.
- High Spec Jack-Up: Fastest recorded avg W2W on ALL hole sections.
- Harsh Environment Semi-Sub: Set new 17.5" record of 3.13 min avg W2W. Fastest in Operator History.
- Harsh Environment Semi-Sub: Achieved fastest ever W2W for 8.5" section with 3.87 min avg
- High Spec Drillship: Set 5 country W2W records in a row for the 17.5" section. Reduced average W2S of all sections by 50% over the course of 2023.
- High-Spec Platform - 1537m (5042ft)/hour across an 81-minute hole section with record S2S performance.
- High-Spec Jackup - Hit new record of 1250m (4100ft)/hour with tripping process automation improvements.



Less Downtime



Equipment Operating Parameters

Time for Preventive Maintenance

Time for Planning



In Closing...



Remove Danger

Enhance Awareness

Improve Performance





11,000 reduced to ...?

\$10/sec = \$\$\$\$

