MSS 1500 Spider and Elevator System,

Multi-Sized Slips Shortens Open Water Run Time by 3.27 Hours, Reduces POB, Lifting-Related Exposures

Objectives

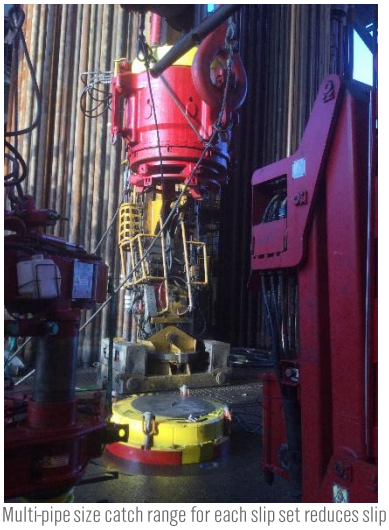
- Reduce rig hours for the operator.
- Reduce personnel on board (POB) during the operation.
- Reduce manual handling involved in changing out handling equipment for each size and minimize personnel exposure in the red zone.

Our Approach

- In 2018, the operator challenged Weatherford with a new open water 22-in. tapered string with three nonstandard casing sizes: 20.891 in. 172#, 22.268 in. 333#, and 23.5 in. 574#.
- The short-term solution was to consult with engineering to qualify existing slip sizes or develop new sizes for the RMS 2400 rotary-mounted slips and elevator.
- The long-term solution involved Weatherford engineers devising a tool which could seamlessly handle all three sizes without slip changes.
- The MSS 1500 spider and elevator system had already been a concept in development, but this project and other increasingly common tapered strings brought its value into focus.
- The guiding principle behind the MSS 1500 system was to create one solution to handle drillpipe, casing, tubing, and landing strings while accommodating tapered strings and increased clearances for large OD accessories. In addition to the increased slip clearance, the MSS 1500 system enables remote operation, eliminating the risk of red-zone exposure by fully integrating into the rig's control system (driller's chair).
- In 2023, Weatherford delivered the MSS 1500 system starting with open water trials for the operator. The RMS 2400 tools had been previously used for multiple wells, so the hours required to execute the work as well as the procedural steps and risks were well known, making the comparison between old and new technology quantifiable.

Value to Customer

- The operator saved 3.27 hours by no longer needing to swap the multiple RMS 2400 tools with required slip sizes to run the string.
- The MSS 1500 system is driller operated, eliminating the need for a dedicated operator and reducing Weatherford personnel on board required to run the job by one. In addition, this solution eliminated Weatherford control panels and associated service loops, increasing efficiency (with no rigging) and improving safety (via a cleaner rig floor).



Multi-pipe size catch range for each slip set reduces slip change requirements especially for tapered strings.

LOCATION
Gulf of Mexico (USA)

WELL TYPE
Deepwater

HOLE SIZE
26 in.

CASING SIZE
20.891 x 22.628 x 23.5 in.

DEPTH
13,085 ft (3,988 m)

PRODUCTS/SERVICES
- MSS 1500 spider and elevator system
- Model 22-150 Vero® mechanized system
- Model 30-100 high-torque casing tong

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Value to Customer (continued)

- The MSS 1500 system, with a passthrough ID of 26 in., removed the requirement to pull the RMS 2400 tool, which could not pass the 24.1-in. OD of the supplemental adapter (SA). This process of pulling the RMS for the SA is full of risks since the elevator must be at a relatively low elevation while pulling the RMS spider making tugger routing and tool manipulation difficult.
- At an estimated day rate of $700,000, the efficiency of the Weatherford team swapping the RMS 2400 tool for the MSS 1500 system in only 3.27 hours saved approximately $95,375.

Multi-sized slips and elevator provides running solutions for loads up to 1,500 tons (1,360,777 kg) of drillstring, casing, and tubing.