

Forum's Offline Activity Crane Helps Reduce Flat Time and Improve Drilling Performance by Facilitating Offline Standbuilding

The Challenge

A major operator drilling in Thailand wanted to build drillpipe and casing stands offline to improve performance and up time, while reducing nonproductive time (NPT). The operator saw several issues when building stands and running casing in singles in real time, such as:

- Presented safety and logistical concerns
- Jeopardized well integrity and the ability to get casing to bottom
- Added flat time to the drilling curve

In traditional operations, rigs typically arrive at the site, stabilize the drilling rig, and then build stands of drillpipe to facilitate drilling in 90-ft sections with the topdrive. Even when attempting to build stands while drilling, the limitation is to build one stand at a time, drill down to floor level, and then pick up a single stand from the mousehole. This can increase NPT and HSE risks, associated with lifting and handling the pipe with a rotating topdrive and string in close proximity.

In addition, racking single stands into the derrick/mast presented substantial HSE risks when handling the pipe with tuggers from the rig floor while drilling ahead. The client needed a solution that would allow continuous and safe drillpipe standbuilding.

The Solution

The operator worked with the Forum Energy Technologies' drilling team to develop the offline activity crane (OAC) system to address their issues.

Once the OAC was installed, the crew was able to build stands while drilling ahead, which saved 8 to 12 hours per well, minimized flat time and NPT, and increased drilling efficiency. When equipped with a lower casing board, they could build stands (doubles) of casing and tubing, and rack back in preparation for casing and tubing running operations, which reduced openhole/casing running times by a minimum of 40 percent. The OAC also helped mitigate derrickman fatigue, as it drastically reduces the requirements to manhandle pipe in the derrick.

While not initially listed as a challenge, the operator was able to significantly reduce the tailing effort at the floor level and improve efficiency when performing vertical lifting operations. When used as a separate tugger, the OAC provides substantially safer lifting operations.



The Benefit

Forum's introduction of the OAC allowed the client to reduce initial flat time and improve overall performance by allowing the crew to drill ahead while building and racking stands of drillpipe.

The ability to build and run stands of casing offline allowed the customer to:

- Reduce openhole time while running casing; thus, improving well integrity
- Run doubles and triples; thereby, reducing overall cycles required per well and proportionately improving efficiency (70 to 75 percent improvement attributed to running casing in doubles)
- Minimize required cycles of facilitating equipment, while improving the life expectancy of the complementary equipment
- Improve HSE conditions, while promoting a safer and less fatigued work environment