

Rod Wheel Injures Worker

SAFETY ALERT

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Enform

Enform is the health and safety association for Canada's upstream oil and gas industry. We provide leading health and safety training, programs and services, touching the lives of hundreds of thousands of workers each year. We are dedicated to the continuous improvement of safety with a vision of eliminating work-related incidents or injuries in the upstream oil and gas industry.

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Description of Incident:

A rig crew was attempting to manually latch a running tool onto the top of a tubing liner pump downhole. A rod wheel was installed onto the rod string. Workers on the rig floor held 10 to 15 turns of torque into the rod string with the wheel as the rod string was lifted. The running tool detached from the lock assembly causing the workers to lose their grip on the rod wheel. The release of torque caused the rod wheel to backspin uncontrolled. While spinning, the gate piece of the rod wheel broke away from the main body of the wheel, striking a worker in the face and resulting in major facial injuries.



The gate piece of the rod wheel broke away, striking a worker.



A new rod wheel

By industry, for industry

What Caused It:

- Defective tools: The rod wheel is made of plastic and if the rod wheel backspins from torque, the gate in the wheel is subject to failure.
- Improper procedures: There is no safe method of placing torque into a rod string using a rod wheel. If control of the wheel is lost, the resulting backspin places workers at risk from disintegration of the gate.

Corrective/Preventive Actions:

Investigation provided the following learnings/recommendations:

- There are no manufacturer operating specifications for the rod wheel to identify torque limitations or maximum number of turns on a rod string before it becomes a hazard.
- Use of a rod wheel relies on workers manually holding a device with torque applied and, if they lose control of the wheel and it fails, there is no way to protect the workers.
- Recommended engineering control: The use of jaw-type rod tong dies coupled with a backup arm to rotate the rod string removes the hazard to workers.

