

WIReD Release Devices Enable Using Wireline Perforating to Save USD 1.3 Million, North Sea

MaxPull 26000 wireline conveyance system employs multiple inline release devices, unaffected by high perforating shock while significantly mitigating operational risk

CHALLENGE

Improve the efficiency of perforating operations for a long interval while also mitigating the risks posed by the heavy gun string.

SOLUTION

Convey the guns in a single run by using the MaxPull* 26000 high-pull wireline conveyance system incorporating multiple WIReD* wireline inline release devices to sustain the high expected shock and minimize operational risk.

RESULTS

Reduced operational exposure by about USD 1.3 million, including more efficient setup and deployment compared with coiled tubing and risk mitigation for loss of cable and equipment in the well.



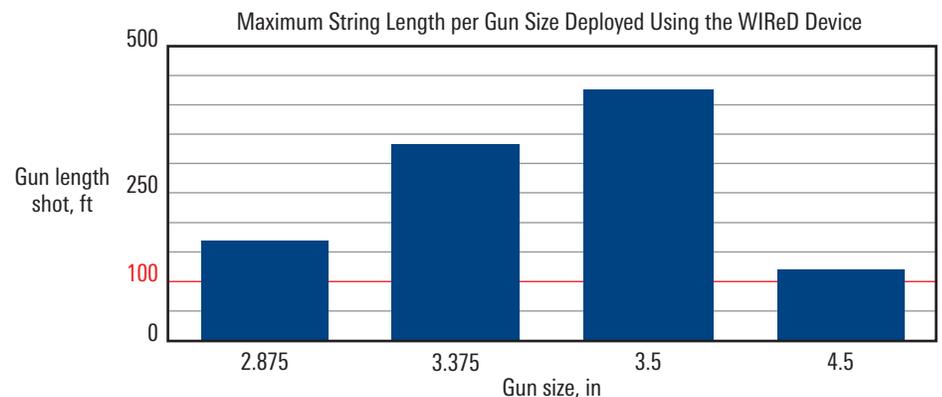
Deployment challenges for long, heavy perforating guns in a highly deviated well

A North Sea operator needed to perforate a long interval in a highly deviated (>63°) well. Although the efficiency and versatility of wireline deployment was preferred, conventional wireline operations would not be capable of conveying such a long string in one run—367 ft of guns was planned. The weight of the long gun string, at about 6,000 lbf, would also generate significant shock when setting the monobore anchor with automatic release (MAXR), which could damage the capability of conventional cable to effect weakpoint release by either pull or electrical command, in turn greatly increasing the risk profile for the perforating operation. However, the alternative approach of deployment on coiled tubing was considerably more expensive for the operator.

Full pulling capability and reliably controlled release with WIReD release devices

Schlumberger recommended pairing the MaxPull high-pull wireline conveyance system with multiple WIReD inline release devices. Because WIReD release devices provide release redundancy with a surface release capability backed with a battery-powered release option, they can be through-wired as necessary for multiple placement virtually anywhere in the string, such as between a tractor and any payload tools. Furthermore, the surface release employs a new communication scheme that does not interfere with toolstring operations, nor is there any risk that other tools can affect the release circuitry.

Incorporating the WIReD devices in the MaxPull 26000 system would mitigate the risks posed by the heavy perforating string and the shock it would generate when setting the MAXR—even if communication via the cable were lost or damage affected pulling capability. The full pulling capability of the TuffLINE* torque-balanced composite wireline cable could be employed by the MaxPull 26000 system for efficient gun deployment at the predicted surface tension of 22,620 lbf at total depth of 19,732-ft MD.



The WIReD inline wireline release device has an extensive track record comprising hundreds of descents. Whereas conventional wireline perforating is usually conducted for gun lengths ranging from 30 ft to a maximum of 100 ft, the robust WIReD device's high shock rating enables running longer and heavier perforating strings on wireline conveyance for greater operational efficiency and safety.

Savings of USD 1.3 million from single-run wireline deployment

Two WIReD release devices were incorporated in the MaxPull 26000 system to mitigate the twofold risk stemming from sustaining the high shock and maintaining the ability to disconnect and retrieve the cable even in the event of cable damage.

Successfully deploying the long, heavy perforating gun string on wireline with the MaxPull 26000 system instead of resorting to coiled tubing generated more than USD 1.3 million in cost savings for the operator. The operational risk was significantly reduced across multiple contingency scenarios by the inclusion of the WIReD release devices at critical points.

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