WELL-SAFE SOLUTIONS

CASE STUDY

SIMOPS benefits on Schooner

How could Well-Safe Solutions improve operational efficiency and reduce the cost of well plug and abandonment?

Simultaneous Operations (SIMOPS) are multiple activities carried out at the same time in a single location, often in close proximity to one another.

The risks of SIMOPS working on a live marine asset, often in a small workspace, requires careful mitigation so that personnel and assets are kept safe.

The Schooner platform, operated by Norwegian operator DNO, is located in the Southern Basin of the UKCS. A twelve-slot Normally Unmanned Installation (NUI), 10 of the 12 slots have wells still open to the reservoir. One slot has a previously abandoned well and the last remains empty.

Wells are typically abandoned sequentially, with wireline-based intervention carried out to install barriers and remove any hydrocarbons present in the wellbore (stage AB0). The tubing is then removed with the BOP installed, with abandonment barriers set in place (stages AB1 and AB2). Conductor cutting and recovery is then generally performed as a batch operation as part of stage AB3.

In line with Well-Safe Solutions' 'safe, smart and efficient' operational commitment, we proposed a programme of SIMOPS batch digital slickline operations to significantly improve operational efficiency and reduce the total cost of abandonment.

This enabled eight of the 11 wells to be entered and abandoned to AB0 status, with two digital slickline units operated at the same time. One unit worked from the drill floor through a high-pressure wireline riser, while the second carried out operations from the Schooner platform's weather deck.

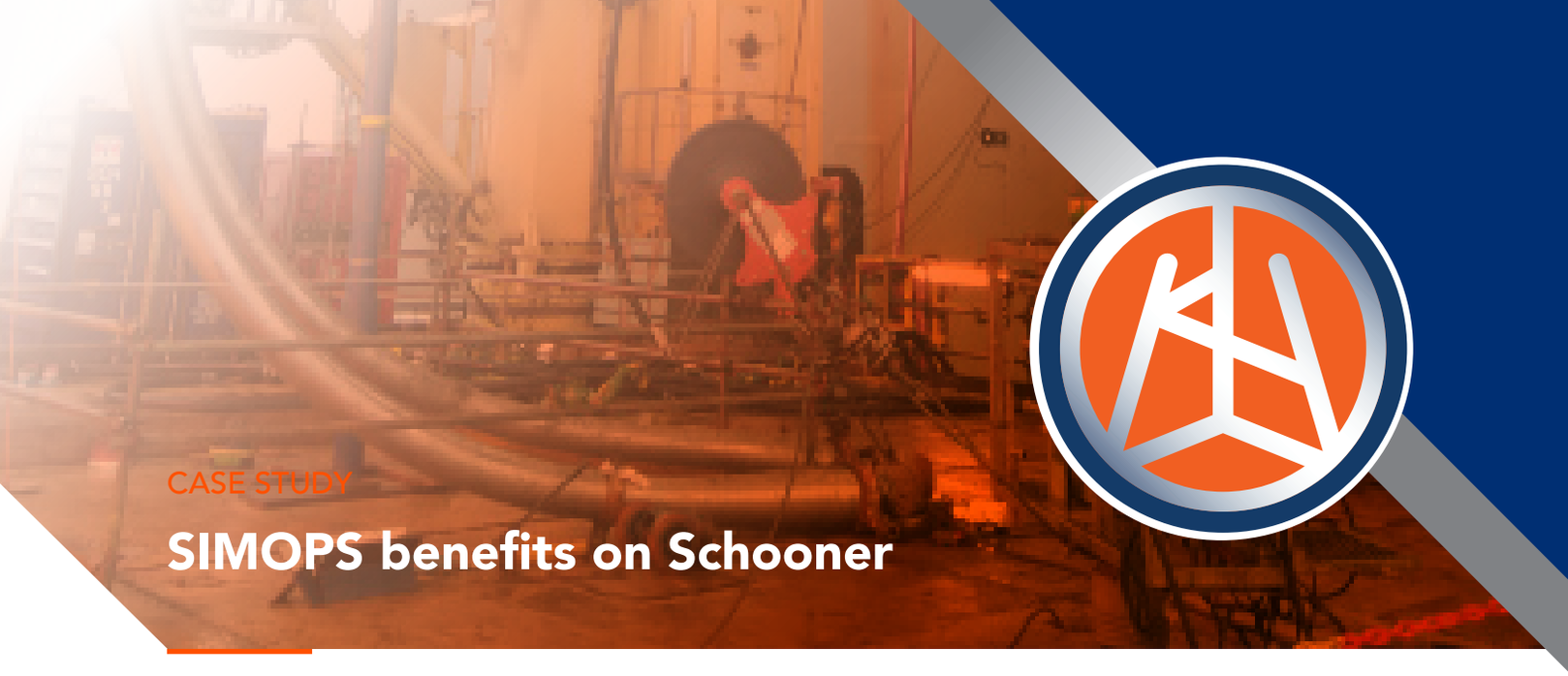
Due to the tight space constraints of the weather deck, Well-Safe's expert engineering team led the design, fabrication and installation of moveable beams installed below the drill floor, which supported the lubricator above multiple well slots and maximised the length of lubricator available.

Key facts:

- **Schooner platform**
- **12-slot Normally Unmanned Installation in North Sea**
- **11,545 ft of wire removed**
- **24 runs completed**
- **'Hopping' BOP between well enabled off-well time to be halved by our experts**

Safe, smart and efficient decommissioning

The complete package for well decommissioning



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Two digital slickline units were used to support SIMOPS, combining two services into one cable conveyance. Real-time services including performing mechanical jarring, explosive and non-explosive plug-setting and utilising tubing cutters. This technology enabled a higher level of operational efficiency through reduced equipment handling, as there was no longer a requirement for additional rig-ups between conventional slickline or wireline equipment.

The use of SIMOPS was not the only optimisation measure used on the project. With operational efficiency one of the central goals of the scope, Well-Safe Solutions was able to halve the time the BOP was off the well, by 'hopping' it between wells, thus avoiding the removal of choke and kill hoses along with the bell nipple. This procedure enabled the high-pressure riser to be removed, the rig to be skidded to its new location, the tree to be removed, and the high-pressure riser to be reinstalled – all while the BOP remained suspended, increasing the value of savings for the client.

For NUIs such as the Schooner platform, day trips using helicopters for short work campaigns are the norm. Lack of daylight, as well as poor weather, can create operational difficulties. Air-gapping operations, where surface well barriers are proved and flowlines are removed, were originally planned to be carried out ahead of the drilling rig's arrival to the platform by way of a helicopter or walk-to-work campaign. Well-Safe proposed to DNO that this operation could be safely carried out as SIMOPS, with the air-gapping carried out simultaneously to the concurrent batch digital slickline activities.

> **Our digital slickline SIMOPS enabled three other wells to be entered, abandoned and suspended concurrently.**
>
> This delivered a considerable time saving for the client, with no detriment to operational safety.

The SIMOPS measures carried out have had a measurable benefit on not only the client's bottom line, but also their operational efficiency.

We are proud of the work we've done, not only because we've enabled safer, smarter and more efficient ways of working, but also because of our collaborative approach to sharing best practice across the industry.

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