



# SABRE™ ABRASIVE JET CUTTING SYSTEM USED TO ABANDON CAMELOT.

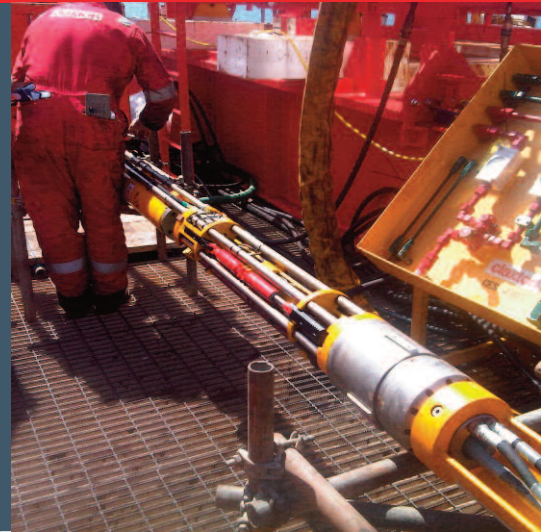
Proprietary, field-proven Claxton technology  
delivers reliable subsea cutting.



## THE PROBLEM

There are serious doubts about whether King Arthur's Camelot ever really existed. In contrast, the UK North Sea gas fields and production platform of the same name certainly did, though the evidence has disappeared.

The complete decommissioning of the North Sea Camelot fields and the removal of Camelot Alpha platform began at the start of 2012 with the plugging and abandonment of the fields' six platform wells. The next stage was severance of the well casings some 5m below the seabed.



## THE SOLUTION

This was a task for which Claxton was ideally qualified, as project manager Bob Leggett explained: "We have established an enviable record in the North Sea for this kind of work using our SABRE™ internal abrasive cutting system, which enables us to sever all the casings within a well simultaneously, regardless of the loading on the casings or any eccentricity. The system uses a mixture of air, water and abrasive garnet at up to 1000 bar to cut through the multiple steel casings and any cement within the various annuli. We generally then drill and pin the casings so they can be safely withdrawn in a single operation.

"Part of the process is to prove that we have achieved complete severance within the well; for this, we use a Claxton-designed jacking system to raise the combined casings temporarily and then ease them back down for complete removal later."

This was the process Claxton followed with the Camelot wells, which contained casings ranging in diameter from 9½" to 30", during May and June 2012. The cutting process presented few challenges. The biggest headache for the team was working out how to accommodate the various components of the SABRE™ system in the limited deck space available on the small, normally unmanned Camelot platform.

Support beams were used to spread the load of the high-pressure pumps, air compressor, supply tank, mixing system and umbilical required to run the SABRE™ system.

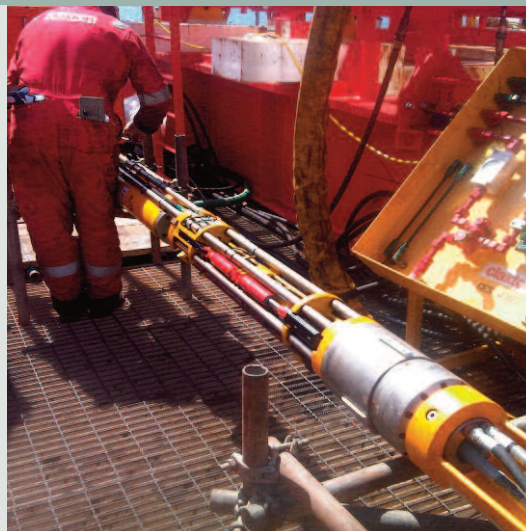
The beams also provided a secure foundation for the jacks used to confirm the cuts. The Claxton team also designed a skidding package to shift the equipment between the wells, thereby reducing reliance on the platform crane and shortening the overall time taken for the job.

## THE RESULT

"There was much communication with the client, and we jointly planned the job very carefully before we went offshore," says Leggett. "Once the job started, we had eight people, including supervisors, split into two teams that shuttled back and forth to the platform, thus ensuring virtually 24-hour working."

In addition to the severance work, Claxton designed and supplied a bespoke lifting cap for the well casing sets. This enabled each set to be easily and safely recovered using a heavy-lift barge in a separate operation carried out after the Claxton team had left the site. Removal of the Camelot platform topsides and jacket is planned for the back end of 2012.

The SABRE™ system was introduced in 1997 and has now been used to sever about 70 [update] wells in the North Sea and the Gulf of Mexico. This includes 16 wells in a campaign that was part of the Shell/Esso Indefatigable field decommissioning project in 2011. SABRE™ is fast becoming the tool of choice for this kind of work because of its performance, flexibility and reliability.



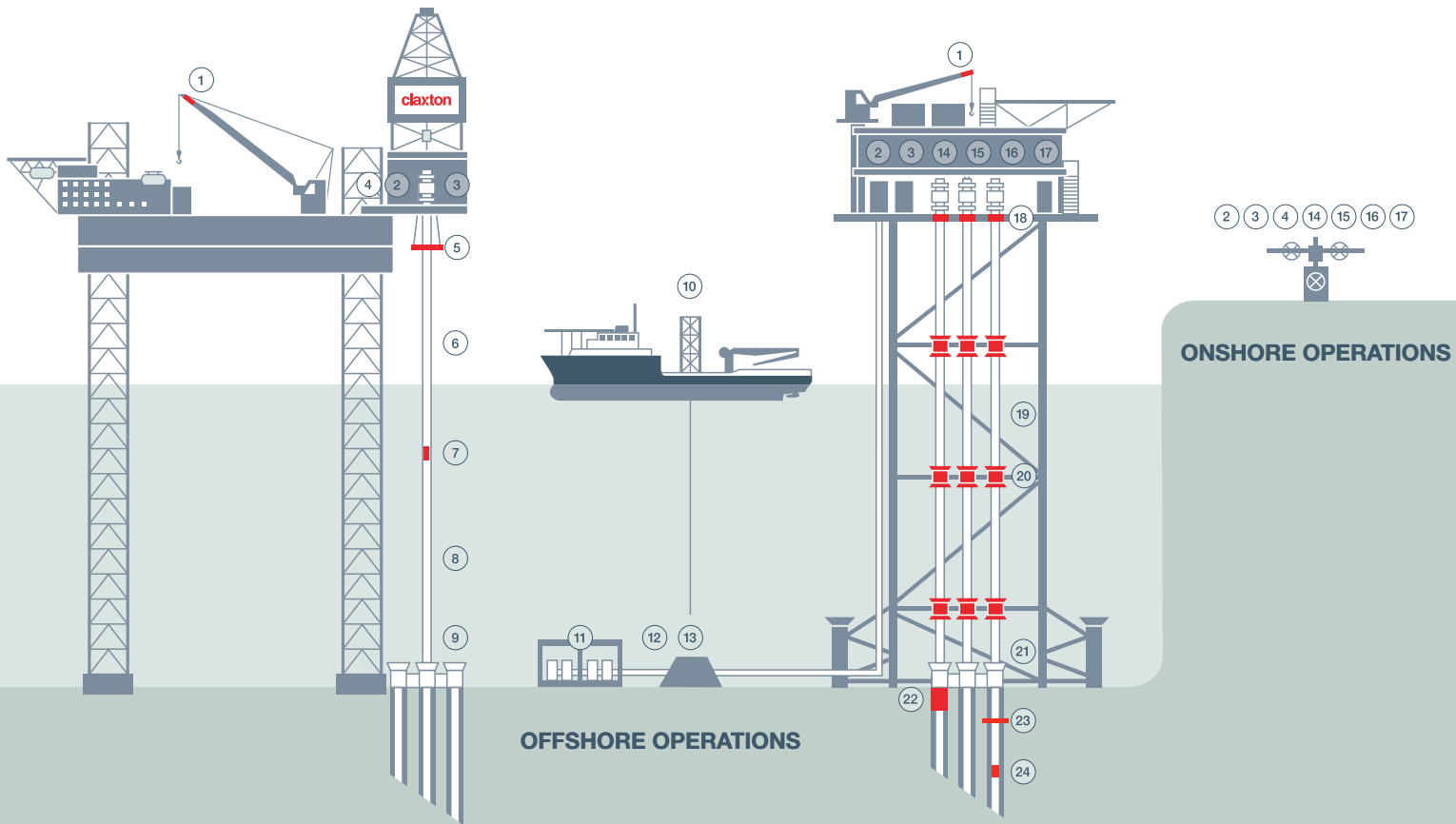
### CAMELOT – START TO FINISH

Gas production from the Camelot Central South and North fields commenced in 1989 through five wells (later six) on the Camelot Alpha platform. The fields lie in Block 53/1a in the Southern North Sea, 80 km from Great Yarmouth, UK. The water depth is about 11 m. Originally developed and operated by Mobil North Sea, the fields and the platform were taken over in 2006 by Energy Resource Technology, part of the Helix Energy Solutions Group. Production ceased in 2009.

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