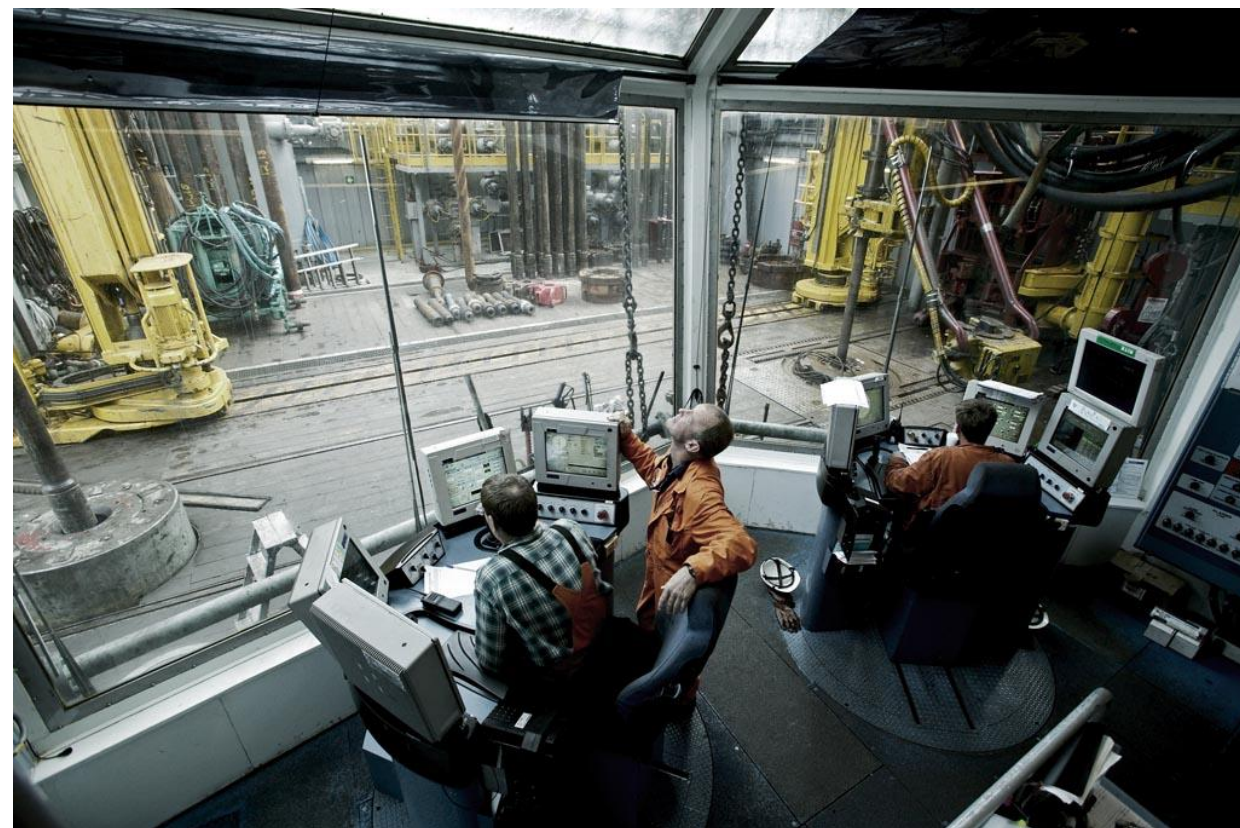




# Learning from Real Incidents

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This is an excellent story shared by our Head of Simulation, **Jan Tore Knutsen**, from a client's recent experience, showing how **training can identify (and fix) weaknesses** in both procedures and ways of operating.

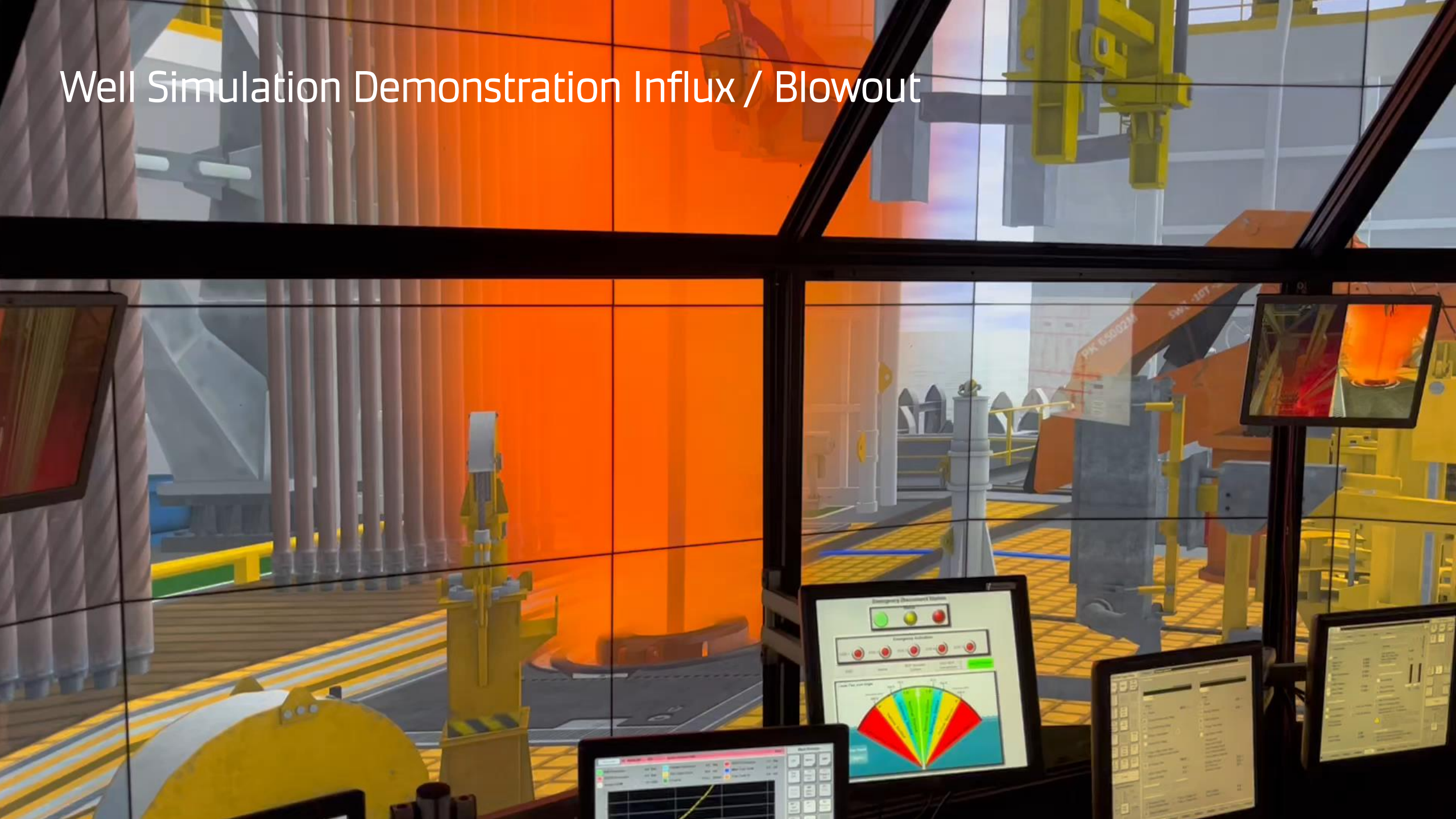


Disclaimer: Installation and well names have been changed, at the request of our client.

# Learning from Real Incidents



# Well Simulation Demonstration Influx / Blowout



# Background

What if you were placed in a  
real well control situation?  
How would you react?

- Our client started drilling with MPD operations on their platform in 2015 and have only had one well control incident while in MPD mode.
- The well was drilled underbalanced in formation and even if the pressure was known to be high, the chance of permeability was considered low. Experience from two previous wells in the area was that the FORMATION was not flowing even if the gas levels were high.
- However, in this case, the FORMATION was permeable and drilling the well underbalanced resulted in an influx - that was circulated out in a controlled manner. The investigation after the incident concluded that incident was caused by "human error" and that the well could have been shut in earlier than it was.

# Purpose

Have we learned from the incident?

Could the well have been shut in earlier?

- Our client decided to test this out in the Maersk Training drilling simulator.
- The next MPD well on the platform was very challenging and located in the same area as the well that kicked, with the potential of flow in the same formation.
- The client therefore programmed the well in Maersk Training's drilling simulator and induced the same sequence of events as in the incident for the drilling crews.
- The MPD procedures were essentially the same as at the time of the event.

## Outcomes / Results

"They say to never judge anybody until you have walked a mile in their shoes."

- Running the scenario in the simulator revealed that five out of six crews acted the same way as on the live well and shut in the well too late to avoid an influx.
- This proved that it could happen to anybody and that the real cause of the incident was weaknesses in the MPD procedures and with the MPD system.

# Conclusion and Feedback



This is how we learn from experience and why **training to be prepared** is so important.



The MPD procedures have now been revised and will be implemented for the next MPD operation.



All crews have been given good information about the well incident and are prepared for drilling the next MPD well. Hopefully without well control events.

*"This would never have been detected without playing the scenario in the simulator. Even if the cost of simulator training is high, avoiding one well control incident makes it worth it!"*