

# The Well from Hell: Learning from the infamous Deepwater Horizon disaster

## HROs and balancing Production and Prevention

High Reliability Organisations (HROs) possess traits that enable them to balance production and prevention pressures in an effective, mindful way.

From studies by Wieck and Sutcliffe – Managing the unexpected, these traits include:

- Preoccupation with Failure
- Reluctance to simplify interpretations
- Sensitivity to operations – situational awareness
- Commitment to resilience (brittle or robust)
- Deference to expertise
- Learning from experience

The history books are littered with examples of how organisations fail to balance the corporate objectives of safety and profit effectively, often with disastrous consequences.

Take for example the comparison of two organisations from the world of Oil and Gas. In the constant search for ever more oil and gas deposits the industry is pushing the envelope continuously.

In 2007 ExxonMobil, after over 500 days of drilling, decided to stop operations on the Ultra deep Blackbeard West Well over concerns with high pressure gas explosions - they were less than 2,000ft away from drilling the deepest well in history at 32,000 ft.

The decision to pull out, cost Exxon an estimated \$180m and the potential loss of billions of barrels of oil revenues. Rex Tillerson\*, the then CEO of Exxon Mobil was lambasted by the financial markets and accused as being risk averse and “not having the guts”.

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Three years later BP began drilling an ultra-deep well in the nearby Macondo Prospect area, despite the warning signals experienced by Exxon in 2007 and strong concerns voiced by the Deepwater Horizon crew (Transocean) to stop drilling, the BP executive insisted that operations should continue.

The now infamous disaster cost BP 11 lives and created the largest oil spill in US history. The total loss to BP was estimated at \$40bn, almost half of BPs company value at that time.

It is interesting to note that the Oil and gas reserves in Macondo Prospect were estimated at a fraction of the size in comparison to the Blackbeard West area.

So, what drove Exxon to stop drilling and BP to continue under apparently similar circumstances?

## The final report of the Deepwater Horizon study group (DHSG) states

“Analysis of currently available information pertaining to the Macondo well failures in the context of HRO theory clearly indicates that the primary organizations involved directly in the well drilling and completion operations, did not perform as HROs. Rather, they performed in the context of LROs.

The organizations were not preoccupied with failure; they were preoccupied with success and seemingly lost their ability to manage risk, i.e., they forgot to be afraid. The organizations were not reluctant to simplify interpretations such as those associated with results from the critical negative pressure tests. The organizations lost situational awareness; did not make proper sense of the situations, and did not act thoughtfully (“thinkingly”). The organizations were brittle rather than robust.

\*Rex Tillerson was appointed US Secretary of state in Feb 2017

Proper selection, training, and support systems for the operating teams were not present. Effective damage and defect tolerance in the organizations and in the system, they created was defeated by the organizations themselves. All of this is even more telling when one considers that a key organization like BP insisted it was instilling a safety culture with high reliability attributes.

In contrast, the earlier example from 2007 suggested that Exxon exhibited traits that were more aligned to an HRO culture. Learning from the Exxon Valdez disaster in 1989, Exxon had developed a safety culture regarded as second to none in the industry. Exxon listened to their front-line staff on the Blackbeard West platform where information was gathered to create and continually update a shared understanding (with head office) of the developing situation on the oil platform.

Conversely, the BP Texas City disaster in 2005 bears striking similarities with Deepwater Horizon in terms of organisational factors

Ironically BP presented a safety award to Transocean only days before the disaster for outstanding safety performance on the Deepwater Horizon platform.

August 15th 2017 marked the official start of the inquiry into the Grenfell tower disaster. I am sure recommendations from the inquiry citing organisational factors will contain lessons for us all in managing safety over profit.

In my next article, I will explore the HRO traits in more detail



John Merrell  
(Associate Consultant)  
September 2017

John, is a Bourton Group Associate Consultant and ex Westinghouse senior manager with over 15 years' experience in Human Factors in Nuclear environments.