

## Good oilfield practice not followed, inquiry told

March 16, 2010

Reliance on a whiteboard and a lack of expert oversight contributed to the blowout of a well in the Timor Sea that caused Australia's worst offshore oil spill, an inquiry has heard. An oil drilling expert told the Montara Commission of Inquiry in Canberra today that a key pressure containing cap was not installed before the blowout at PTTEP Australasia's Montara oilfield. PTTEP's H1 started leaking oil on August 21, 2009. The rig caught fire and burned for two days before it was plugged on November 1.



David Gouldin, Asia-Pacific operations manager for Seadrill Ltd - drilling contractors on the rig - helped prepare a report on the blowout and gave evidence to the inquiry, headed by David Borthwick. Questioned by counsel assisting the inquiry Tom Howe QC, Mr Gouldin agreed that the H1 well did not have any properly tested mechanical barrier in place for 6 months before the blowout.

He agreed a pressure cap on the well had not been tested and a bigger pressure cap was not installed as it should have been Mr Howe told the court that a whiteboard in the drilling supervisor's office had the installation of the larger cap as an "outstanding job" but the supervisor said he had no recollection of whether the job had been ticked off as completed. Mr Gouldin agreed a whiteboard was an inadequate system to ensure verification of jobs done.

Adapted from

<http://www.watoday.com.au/wa-news/good-oilfield-practice-not-followed-inquiry-told-20100316-qcix.html#ixzz1nYab20wU>

## Lessons from the Montara well blowout

Tuesday 28 June, 2011

A prevailing attitude of "forging ahead regardless" combined with a poor understanding and management of hazards inherent in the drilling process were key contributors to the blowout of the Montara H1 well in the Timor Sea in 2009, a recent paper has found.

There were significant management and system deficiencies in understanding the need for multiple barriers, management and technical supervision, integrity assurance and the use of risk assessments in the drilling process, the paper said.

Dr Jan Hayes, [author of the report] said these deficiencies [existed in] those operating the well onsite as well as those in onshore technical and management positions. "Those responsible for technical integrity of hazardous work involved in drilling and completing the well [showed] a poor understanding of hazards inherent in the work"

While no-one was injured or killed as a result of the incident, [she] noted that this was more a case of good luck than good management. "If the blowout had ignited immediately, the result could have been similar to the Deepwater Horizon incident which resulted in 11 fatalities and many injuries."

Despite problems with cement being a common cause of blowouts, and blowouts being a well-known hazard of drilling operations, there was a lack of integrity in the way cementing operations were carried out on the H1 well. "There were indications available in the pressure and flow data collected that the integrity of the work was compromised, but those involved on the facility apparently did not understand the significance of what was occurring and the onshore technical staff (who were also managing the overall operation) did not pay attention to the information provided to them by way of standard reports," said the paper.

"Factors surrounding decisions made regarding cementing can be characterised as poor technical understanding of the task at hand, lack of supervision and disregard by all parties of the potential consequences of not completing the task in accordance with design."

Adapted from <http://ohs.anu.edu.au/publications/pdf/wp%2081%20-%20Hayes.Montara.5.11..final.pdf>

#### Analysis

This case study recounts experiences over a six month period, and indicates the existence of a longer pattern of inattention to key issues. Your task is to discuss this reading and develop comments and notes on the issues below.

Once you complete this task, you will join another group – so it is important that everyone has comprehensive notes to take with you. Write your own notes - don't rely on a note taker.

Once you have completed this task, you will be leaving this group to join other groups – so it is important that each member of the group has their own comprehensive notes to take with them.

#### The Actors and the Stage

There are always a lot of individuals involved in any event such as the one reported here. This is because they are about workplaces where there are many layers of responsibility with hierarchies of authority and decision-making, broad bands of similar roles and tasks, and differentiation along lines of roles and responsibility.

While all these are intended to reduce complexity and increase the likelihood of efficiently managing a complicated set of operations, they can also make it difficult for individuals to actually do their jobs well, as these reports show.

1. Who are the actors in this story? Do not stop at the people mentioned in the article. Think beyond the immediate events described. Who else might be directly involved in creating, maintaining and changing the environment described?
2. What is this environment?
  - a. What words can you use to describe the conditions and events described – include any thing you know that is not included in this story. Is it in a relaxed and carefree state? Or taut and criticised? Is it doing a simple job? Or a very complex one? Is it highly regulated or self-managing?
  - b. What would conditions be like at some of the contexts mentioned or implied – the rig itself, onshore offices, work/transition places in between, etc.?

#### Intention

One of the key issues in learning to understand and operate effectively within any workplace culture is the perception that no one intends to harm another person. Can you assume that everyone has a conscious intention to behave with due care for self and others.

3. List ways that intentions and behaviours are noted as aligned or at cross-purposes. What are the report writers' intentions? What are the intentions of managers and employees? Of senior decision makers not directly involved in daily activity?

#### Awareness

University of Wollongong Engineering Graduate Capability continuum lists these vital engineering capabilities

- *Be flexible, thorough, innovative and aim for high standards.*
- *Work collaboratively and engage with people in different settings.*
- *Recognise how culture can shape communication.*

**Engineers Australia** lists as a key **Attribute of Graduates from an Accredited Program**

- *Understanding of professional and ethical responsibilities and commitment to them*

These are neither simple nor easy to sustain. This unit of study is designed to help you consider your own present state of awareness.

1. While it may be 'easy' to blame all/any of those whose actions are described in the article, what factors might have inhibited their respective abilities to attend to these capabilities on that night?

#### Recommendations

1. The NSW Office of Transport Safety Investigation final report makes fifteen separate recommendations for the two **List at least six actions** that either/both organisations could take to improve attitudes and behaviours around safety in their workplace cultures.
2. **List three actions** you believe you would take if you found yourself in this context.

Use the following page to record your answers to each of these questions.

**Worksheet for Engineering Across Cultures 3 – Case Study 1**

*The Actors and the Stage*

1. Who are all the actors in this story?

2. What is the environment?

*Intention*

3. List ways in which good intentions were evident but insufficient on this occasion.

*Awareness*

4. What factors might have inhibited abilities to attend to the key safety factors on this occasion?

*Recommendations*

5. Regardless of your access to this report **list at least six actions** that – in your opinion - either/both organisations could take to improve attitudes and behaviours around safety in their workplace cultures.

*Work together to complete these tasks.*

Task	For your notes
<p><b>Report.</b> The teams are working on different Case Studies.</p> <p>First each group member introduces your case study and describes the discussion, summarising key elements you recorded on Part A of this worksheet. Use this space to make notes.</p>	<p>Use this column to make notes.</p>
<p><b>Identify.</b> There are similarities and differences among the case studies.</p> <p>Working together construct a comprehensive summary of all the factors you can find. Where new ideas emerge from this discussion list them also.</p>	
<p><b>Cues and Actions.</b> The information you have now compiled can be used to develop a list of cues and actions to help identify aspects of underlying workplace culture. You can also begin to construct a list of actions you might employ to ensure you enact good practice in regard to the organisational culture issues examined in each case study.</p>	
<p><b>Presentation.</b> Knowing <i>about</i> such things is not enough. By presenting this information in an attractive and memorable manner you demonstrate what you have learned and assist others to learn with and from you.</p> <p>The next page sets out options for collating and presenting the data. The choice of what to do is all yours.</p>	

*Presenting your agreed Cues and Actions in a visual mode.*

The graduate attributes addressed in this Unit include communication skills. In this final activity you will exercise your ability to develop a visual representation of your discussion. Signs, symbols, images, diagrams and words are all forms of communication.

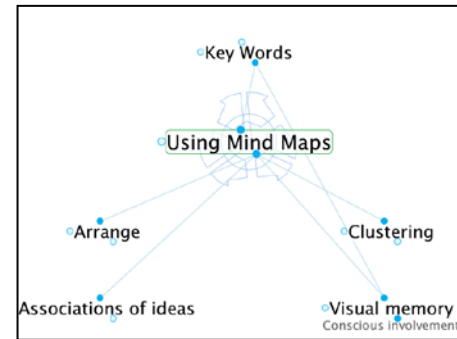
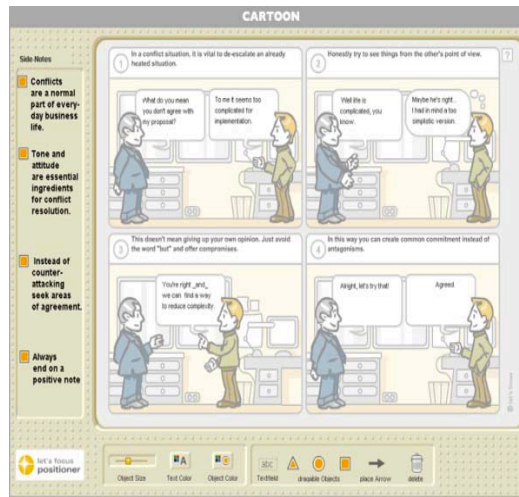
On the following page are four ways in which you could so. However if you know of other ways, or someone in the group is proficient in any form of visual representing of information you may prefer to use that.

You have 20 minutes to use one or more of the A3 sheets of paper to prepare your summary for display to the whole class.

Comic/cartoons

This works likes this–

1. First – decide a ‘story’ to share.
2. On the left hand side list key messages you want to convey. As this example says keep it simple. Have only 4 to 6 steps or items.
3. Draw a 4 to 6 stage process using cartoon figures. There are no prizes for drawing – everyone is interested in the content not how the figures look.
4. Engage the actors in a conversation - each adding new ideas to the story.



Mind map

A Mind Map is a picture showing connections and relationships among ideas. Begin with a key, organising idea in the centre of the page. Then draw lines out ending in circles where you write the ideas and connections you want to illustrate.

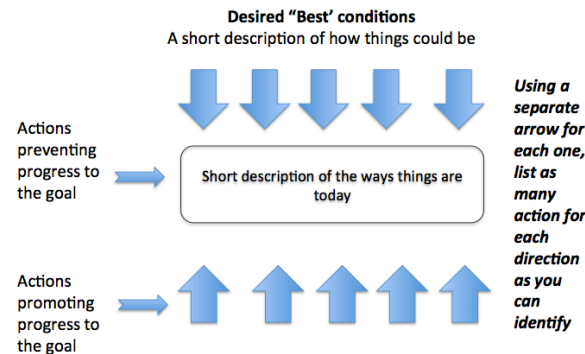
A Mind Map can have several layers when each idea has related ideas connected to it moving further out from the centre. The main ideas to remember are listed in this Mind Map – use Key words, Arrange new items to allow you to show relationships, Cluster like ideas, use any means you like to show Associations among ideas, and draw images to help with recall of the concepts.

Force Field Analysis

This image tells the viewer about four important variables in a situation:

- Where things are now
- Where it is hoped to be
- What is stopping/slowing progress
- What is creating/causing forward momentum

To help your audience list as many factors on both sides of the equation. What are all the possible factors causing the movement towards change? What are all the possible factors holding things 'is stasis' at this moment, and therefore causing a lack of progress towards change?



An 'iceberg diagram' shows the visible factors that can be seen by everyone, and 'below the water line' factors that create and support the 'above the water line' barrier. As in maritime disasters, it is often the hidden factors that create the most damage.

Iceberg diagram

This kind of image is intended to illustrate the relative size of elements in a complex situation.

In developing a "Tips and Actions" visual image, using an Iceberg, you could list the visible and hidden elements, which your Tips And Actions are designed to help you respond to. Then you can – for example - include a boat carrying the cargo of your ideas [remember to list them in some way] navigating safely past the iceberg.

The key factor in such an image is forcefully reminding your viewers of how much may be hidden from view and therefore even more dangerous.