

# Our Safety Journey

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Drilling & Completions

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# My Completion Team & Challenges (2009)

## Team

- 4 x Completion Engineers
- 5 x Offshore Supervisors
- 4 x Graduates Engineers
- 12 x Service Companies
- 2 x Semi-sub Rigs + Gravel Pack Boat

**Dynamic  
Resources**

## Challenges

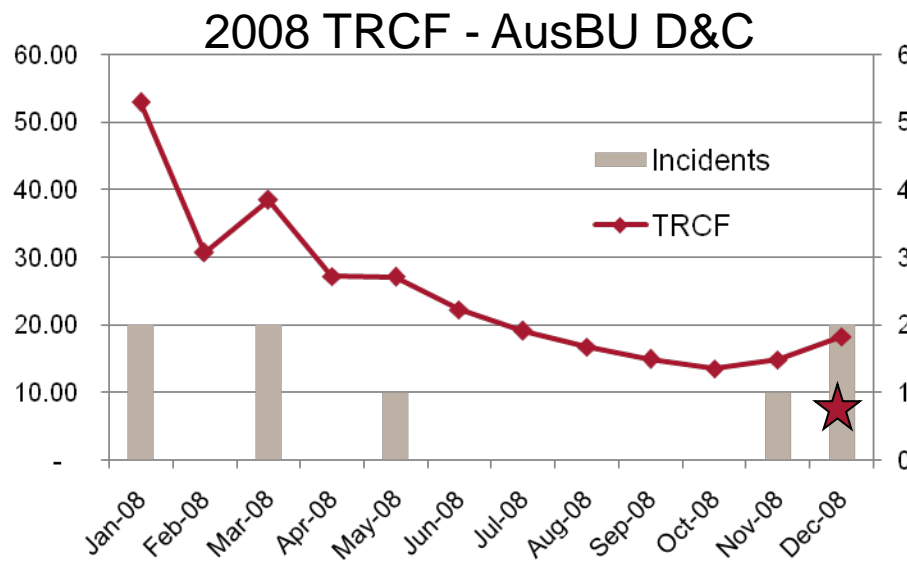
- Gravel Pack Producers via Boat
- High Rate ICD Water Injector
- C&P Water Injector (*Workover*)
- Multi Lateral CT Intervention
- Tri-Lateral Producers
- C&P Producer (*Workover*)

**Brownfield  
Projects**

# What was the catalyst for our HSE Journey?

Poor 2008 HSE results

...then a serious hand injury



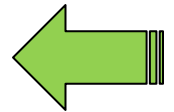
# Other serious TRCF incidents in 2008



# Completion engineers took a look in the mirror...

## Pathfinder

Sets the Safety Agenda across Industry.  
Highly reliable and trusted.



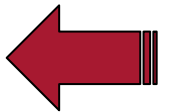
**Aspiration**

## Leader

Manages safety strategically.  
Goes beyond compliance. Fairly proactive.

## Follower

Manages safety tactically.  
Does not view HSE performance strategically.



**Our view**

## At Risk

Minimum to comply with laws and regulations.  
Uses a just-in-time approach.

## Apathetic

Avoids responsibilities

# How could onshore engineers influence rig HSE ?

Typical engineers...brainstorming → bunch of actions....

- Our forward plan at the start of 2009 included:
  - Aligned performance related objectives on audits & inspections
  - Consult WSM's on feedback for our engineers performance
  - Analyse incidents & understand 'behaviour' root cause (trending)
  - Obtain STOP cards from the rigs and provide vendor feedback
  - Training and awareness on "Our Safety Culture" (OSC)
  - **Safety moment required at start of every presentation**
- ★ **Review the team OSC behaviours at the end of each completion**

# The 'Our Safety Culture' framework

- It is a framework that allows people to **differentiate behaviours that are effective at managing HSE**, from those that are less effective
- It enables **everyone** to work towards effective safety behaviours
- It is a non-technical competency framework that allows individuals to be **aware** of their own individual behaviour

We believe this has made our engineering teams approach to safety – **more real and practical**

# How did we use OSC in practice?

Our Safety Culture - Self Assessment											
Supervisors' Behaviour											
Well		ENCO1 and ENCO5		Self Assessment Scoring System		Good for 'I will', bad for 'I will not'					
Activity		Abandon/Recompletion & Intervention		1 did it		0 Neutral / no examples / not applicable					
Person		Tom McCarthy		-1 did not do it							
STANDARDS	Ensure compliance	Ensure compliance1	SP1.1	Visit the worksite regularly to check compliance to standards, procedures and	0	No opportunity - POB constrained	SN1.5	Set a poor example by breaking safety standards or rules	-1		
		Ensure compliance2	SP1.2	Explain to the team that full compliance is expected at all times	0		SN1.6	Hesitate to intervene, or turn a blind eye to unsafe behaviour	0		
		Ensure compliance3	SP1.3	Help the team ensure production does not override safety	-1	Rushed preparation for acid jobs	SN1.7	Fail to fully consider the implications of not following procedures or systems	-1		stressed importance of change control and not taking on decision making single handed
		Ensure compliance4	SP1.4	Ensure team members have adequate skills, experience and training for the task in hand	-1	Tried to ensure team always included 1 x experienced hand (e.g. Roy, Benni). Worked with new personnel up front (eg Andrew) to ensure confidence	SN1.8	Imply by my words or behaviours that production is more important than safety	-1		Rushed preparation for acid jobs
COMMUNICATION	Encourage the team	Encourage team1	SP2.1	Identify the strengths and limitations of each team member	1	Worked closely with Andrew where required	SN2.6	Fail to consider my team's views and opinions	-1		Discussed 3" colfoxip rig up suggestion from Roy with Drilling Supt at length
		Encourage team2	SP2.2	Seek and listen to my team's safety suggestions, concerns and ideas	-1	Discussed 3" colfoxip rig up suggestion from Roy with Drilling Supt at length	SN2.7	Tend to always tell instead of ask	-1		Discussed 3" colfoxip rig up suggestion from Roy with Drilling Supt at length
		Encourage team3	SP2.3	Recognise and reward good individual and team safety performance	0	trying to implement for ENCO1	SN2.8	Neglect to address poor safety performance and avoid tough or unpopular decisions	0		
		Encourage team4	SP2.4	Deal firmly and fairly with poor safety performance	0	No opportunity - POB constrained	SN2.9	Discipline some team members, whilst tolerating non-compliance in others	0		
		Encourage team5	SP2.5	Act on safety concerns promptly, seeking management support where necessary	1	Discussed 3" colfoxip rig up suggestion from Roy with Drilling Supt at length			0		
RISK MANAGEMENT	Promote risk awareness	Risk Awareness1	SP3.1	Take time to plan work with the team	1	Review/assist prep for SIDS where change control raised	SN3.6	Rush into an activity without first recognising hazards and implementing controls	-1		Rushed preparation for acid jobs
		Risk Awareness2	SP3.2	Challenge assumptions and any complacency about routine work	0		SN3.7	Fail to reassess risks when a change occurs	-1		Prepared CCR when changes made
		Risk Awareness3	SP3.3	Ensure the team identifies hazards and assesses risks	-1	Tech talks prior to upcoming operations	SN3.8	Consider safety activities (e.g. risk assessment) as optional	-1		
		Risk Awareness4	SP3.4	Remind the team to be cautious and to stop the job if they have safety concerns	0		SN3.9	Focus only on safety, with less appreciation of occupational health	0		
		Risk Awareness5	SP3.5	Reassess hazards and risks when changes occur	-1	Prepared CCR when changes made			0		
INVOLVEMENT	Involve the team	Involve the team1	SP4.1	Work with the team to ensure they understand our safety responsibilities	0		SN4.5	Ignore my team and their proposals for change	0		
		Involve the team2	SP4.2	Initiate team discussions about safety performance	-1	Usually discussed ops status progress	SN4.6	Fail to act when safety concerns are raised and fail to follow through to address such concerns	0		
		Involve the team3	SP4.3	Share lessons learned with the team	0		SN4.7	Give insufficient support to safety initiatives, preventing the message getting through to the team	-1		Needed to push harder with card tracking
		Involve the team4	SP4.4	Support, coach and involve team members in implementing safety improvements	0		SN4.8	Overload the team and fail to recognise excessive work pressure	-1		Worked closely with offshore team to try and share work load

Follow rules

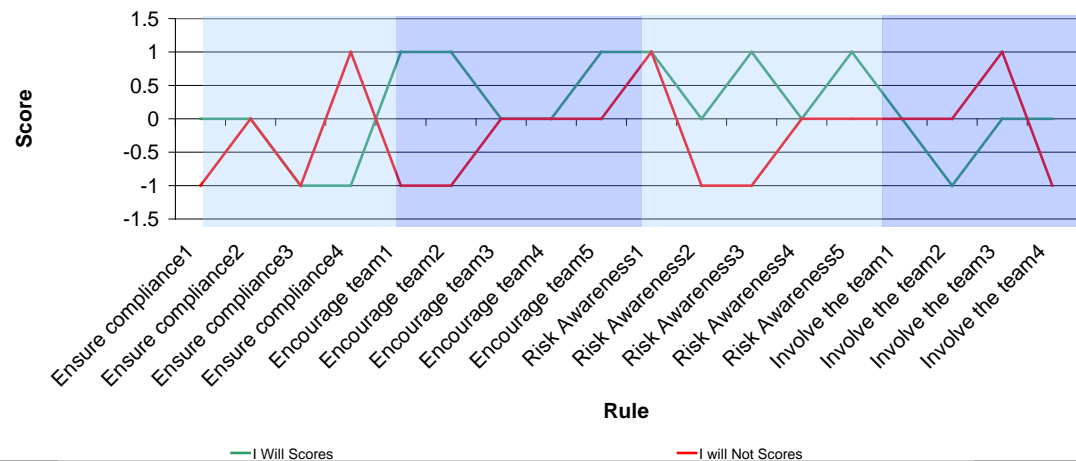
STANDARDS

Focus area became Risk

Good Performance =

Green Line above Red Line

OSC - Behaviour Self Assessment "Supervisor" Role

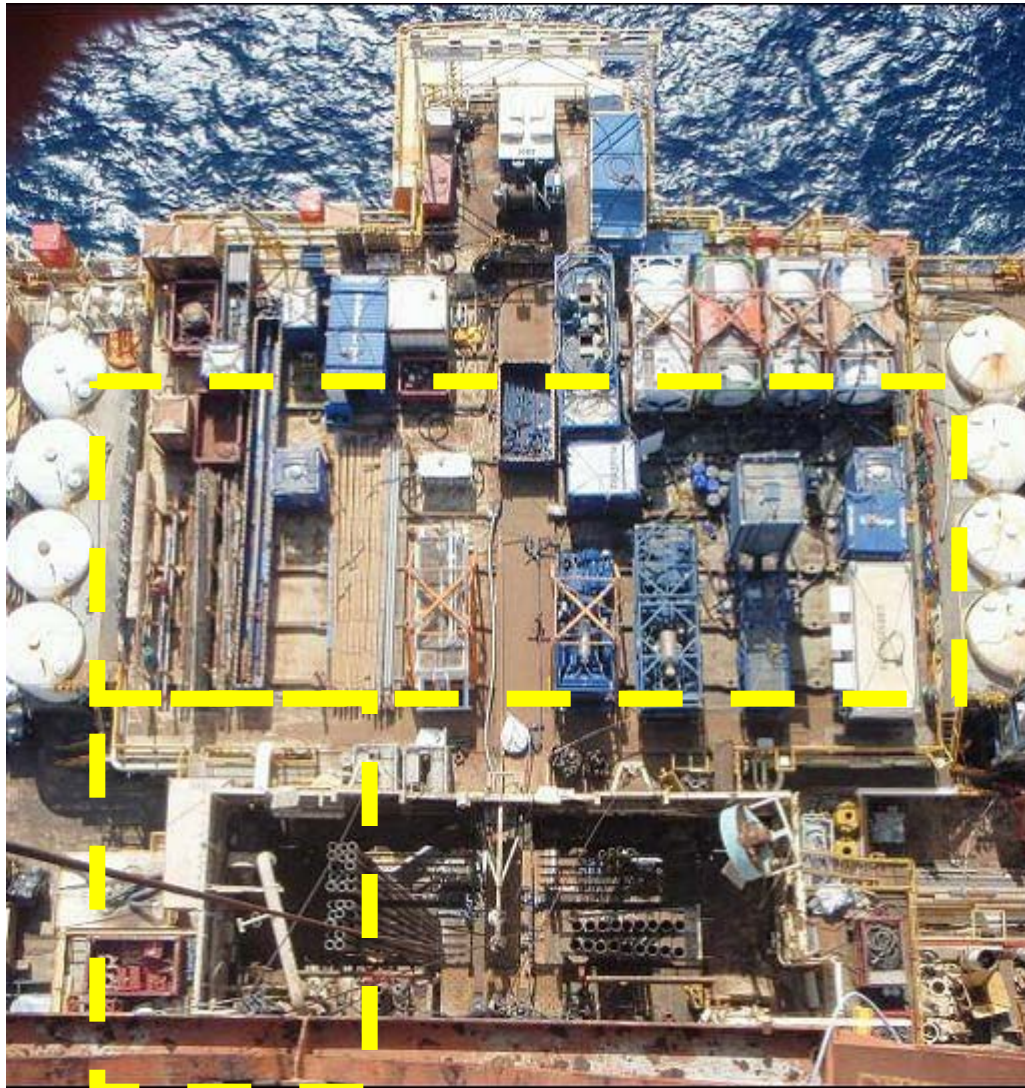


Our team has seen tangible results of focus on our own safety culture.

We have had an increase in **proactive elimination** of HSE risk through stronger engineering.

Here are some examples...

# Gravel Packing operations from a *small* rig...



- All available deck space
- 500T equipment
- VDL above maximum
- 10,000bbls of fluids
- Additional ~22 POB

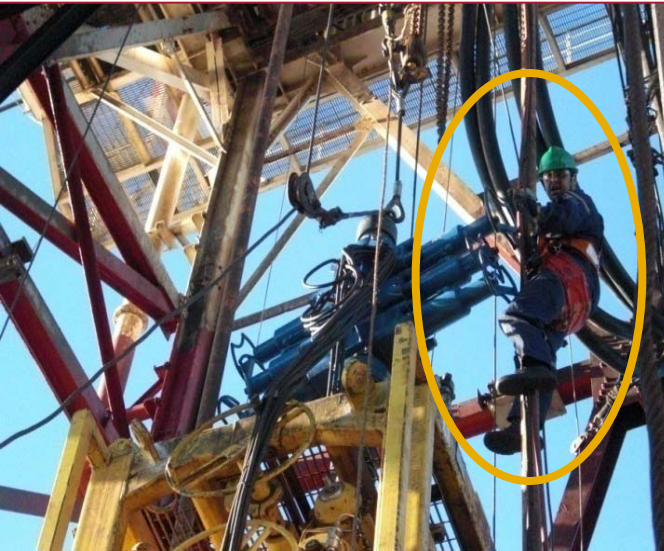
# ...to Gravel Packing from a *spacious* boat !

- Clear access and work areas
- Heavy lifts wharf side (controlled)
- Rig down off critical path (no VDL)
- Heavy weight fluids on boat & rig
- Reduced rig POB by 13 (→ boat)



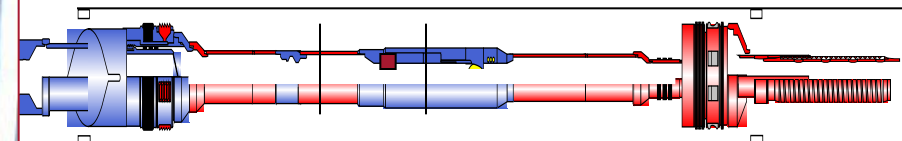
# Coil Tubing operations on a *small* rig...

- Increase pressure on VDL and Deck space with large equipment
- People intense rig up
- Working at heights
- Rig floor space

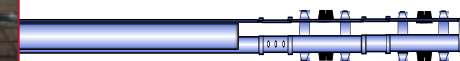


# ...to elimination of Coil Tubing entirely !

- Replaced CT with drill pipe operations (dual shifting tool)
- Eliminated additional VDL and logistics pressure (run XT)
- Eliminated working at heights
- Eliminated people intensive rig up operations on deck and rig floor



**Isolation Valve**



**Dual shifting tool**

## And this is the latest example ...



- Be mindful and ask “***what could go wrong with this operation***”?
- The engineers have proactively presented a new idea
- Prototype modified & trialled in May



# A summary of our HSE journey...

- Successful teams focus on Safety as a behaviour
  - This requires leadership & tools to gain buy in
- Engineers can influence rig Safety
  - Risk elimination has the largest impact

**My engineers are now teaching me...**



Any Questions?