This presentation contains forward looking statements that are subject to risk factors associated with oil and gas businesses. It is believed that the expectations reflected in these statements are reasonable but they may be affected by a variety of variables and changes in underlying assumptions which could cause actual results or trends to differ materially, including but not limited to: price fluctuations, actual demand, currency fluctuations, drilling and production results, reserve estimates, loss of market, industry competition, environmental risks, physical risks, legislative, fiscal and regulatory developments, economic and financial market conditions in various countries and regions, political risks, project delay or advancement, approvals and cost estimates.

All references to dollars, cents or $ in this presentation are to US currency, unless otherwise stated.

References to “Woodside” may be references to Woodside Petroleum Ltd. or its applicable subsidiaries.
Nimrod XV230 suffered a catastrophic mid-air fire shortly after air-to-air refuelling, on a routine mission.

Aviation fuel and an ignition source

Crew had no access to the fire; no fire suppression system
  - Loss of 14 service personnel
  - Loss of the aircraft XV230
  - Loss of the Nimrod fleet
An independent review into the broader issues surrounding the loss of the RAF Nimrod MR.2 Aircraft XV230 in Afghanistan in 2006

Charles Haddon-Cave QC
Organisational factors

+ Shuttle Columbia
+ Petrobras P36
+ Buncefield
+ Teneriffe
+ Piper Alpha
+ Titanic
+ Barings Bank
+ Texas City
+ Macondo
+ Morecambe Bay NHS
+ Kings Cross
+ Moura Mine
+ Ladbroke Grove
+ Herald of Free Enterprise
Human and organisational factors in investigations

Human causes
- Abandonment
- Failure to act: Individual

Organisational causes
- Failure to act: Team
- Failure to understand signs
- Failure of decision support
- Failure to learn from incidents
- Failure of audit and review
- Unrealistic emergency drills
- Failure of SMS
- Failure of MoC
- Lack of process safety leadership

Loss of well control

A belief that it could not happen
A culture of “good news only”
A FAILURE OF LEADERSHIP
Leadership 1: Safety cases

+ Based on ‘as designed’ not ‘as is’
+ Essentially a paperwork exercise
+ Design flaws dormant for decades not identified
+ Air-to-Air refuelling modification not assessed
+ Little operator input
+ Personnel involved were inexperienced, with little knowledge of the aircraft
+ Not revisited following major accident to XV227 in 2004
+ Poor oversight of contractors by the MoD

+ Review conclusion: An effective safety case would have prevented the disaster

“Unfortunately, the Nimrod Safety Case was a lamentable job from start to finish. It was riddled with errors. It missed the key dangers.

Its production is a story of incompetence, complacency, and cynicism.

The best opportunity to prevent the accident to XV230 was, tragically, lost”

(Nimrod Review, p.10)
Leadership 2: Warning signs

+ Previous significant incidents
  + Incidents were treated as ‘one-offs’
  + Patterns not spotted
  + Systemic issues not identified
  + No ‘read-across’ to other aircraft
  + No-one taking an overall view

+ Previous warnings about reducing resources and increasing demands

“Learning disabilities are tragic in children, but they are fatal in organizations”
(Robert L. Sumwalt, US National Transportation Safety Board)
A tsunami of cuts and change
  - 900 initiatives
  - Change assumed to be better

Huge organisational changes
  - ‘Purple’ tri-service organisations
  - Outsourcing

Sustained period of ‘organisational trauma’

“The MOD suffered a sustained period of deep organisational trauma between 1998 and 2006 due to the imposition of unending cuts and change”
Nimrod Review, p.355
What is the purpose of your safety cases?
How do you influence effective safety cases?
Do you understand and challenge the work of contractors and consultants?
What are the equivalent warning signs in your organisation?
Do you help to ‘join up the dots’ between previous incidents?
Do you create learning opportunities?
Are organisational changes (including cumulative impacts) creating unintended effects?

As a leader, you have a choice...
- You can negatively influence safety, or you can positively influence safety
Which influence do you provide? How? When?

“It is the thought, word and deed of leaders that most influence the attitudes, behaviours and priorities of employees”
(Nimrod Review, p.576)
A FAILURE OF CULTURE
Culture 1: Nimrod is ‘safe anyway’

+ 30 year operational history
+ Assumption that it was ‘safe’
+ The ‘apparent safety’ lulled many into a false sense of security
+ This undermined the safety case process

“The non-occurrence of system accidents or incidents is no guarantee of a safe system”
(Nimrod Review, p.181)
+ A culture of paper safety rather than real safety
+ Audits address processes not practices
+ Failed to acknowledge the gap between ‘work as imagined’ and ‘work as done’
+ Reliance on comforting PowerPoint presentations rather than reading reports

“There has been a yawning gap between the appearance and reality of safety” (Nimrod Review, p.579)
Culture 3: Procurement

+ “Capacity to waste money is legendary”
+ Delays and extortion
  + Over-run 80% on average
  + Over-spend 40% on average
  + Creates bow-waves of deferred financial problems
+ Convoluted procurement chain
  + Non-conforming parts on aircraft
  + Procurement had no specialist aviation knowledge

+ Nimrod involvement in Afghanistan and Iraq due to unsuitable drones purchased

But for the delays in the Nimrod MRA4 replacement programme, XV230 would probably have no longer have been flying in September 2006, because it would have reached its Out-of-Service Date and already been scrapped or stripped for conversion (Nimrod Review, p.12)
A failure of culture: Reflections

+ Do you think that all is well because of historical experience?
+ What assumptions are you making in key decisions – are these still valid?
+ How do you know that what you think is happening, IS actually happening?
+ How do you encourage the reporting of bad news, errors or near-misses?
+ Do you actively create the culture, or just let it happen?
+ When things are going well, do you ask more questions (rather than fewer)?

“… it is worth pointing out that if you are convinced that your organisation has a good safety culture, you are almost certainly mistaken”
(James Reason 1997)

“NASA’s blind spot is it believes it has a strong safety culture”
(Columbia Accident Investigation Board CAIB, 2003, p.203)
A FAILURE OF PRIORITIES
Priorities 1: Shift from airworthiness

+ Financial pressures

+ Led to
  + a move from safety and airworthiness to business and financial targets
  + a dilution of the airworthiness regime

+ Delivering changes distracted from safety and airworthiness issues

“There was no doubt that the culture at the time had switched. In the days of Sir Colin Terry you had to be on top of airworthiness. By 2004, you had to be on top of your budget, if you wanted to get ahead”
(Nimrod Review, p.355)
Priorities 2: Demands

+ Increased operational demands (Iraq and Afghanistan)
+ Assumptions behind changes not revisited as demands increased
+ Insufficient checks and balances
+ Less oversight of key activities such as the safety case

“UK Armed Forces were required to play a major role in two major conflicts: Iraq and Afghanistan... at the same time as coping with major change and re-structuring and delivering major financial savings” (Nimrod Review, p.365)
Need more care, resources and vigilance

Serial delays in Nimrod replacement
  + Out-of-service date extended
  + Uncertainty
  + Lack of investment in Nimrod
  + Planning and sourcing spares
  + Parts-swapping between aircraft
How might budget cuts, challenges, strategic targets, initiatives etc. have unintended consequences?

What are your key messages to your teams and to the business?

What targets do you set?

How can project or production pressures live comfortably with safety?

Are you managing aging facilities?

Do you accept conditions or behaviours that you wouldn’t have a few years ago?

“If reliability and safety are preached as ‘organizational bumper stickers’, but leaders constantly emphasize keeping on schedule and saving money, workers will soon realize what is deemed important and change accordingly. Such was the case with shuttle program”

Summary

+ “The fundamental failure was a failure of Leadership. As preceding Chapters have shown, lack of Leadership manifested itself in relation to the way in which the Nimrod Safety Case was handled, in the way in which warning signs and trends were not spotted, and in relation to inexorable weakening of the Airworthiness system and pervading Safety Culture generally”

(Nimrod Review, p. 491)

+ “Many of these lessons and truths may be unwelcome, uncomfortable and painful; but they are all the more important, and valuable, for being so. It is better that the hard lessons are learned now, and not following some future catastrophic accident”

(Nimrod Review, p. 580)
You now have a choice. It’s up to you

+ Not my problem
+ I’m too busy
+ It wouldn’t happen here
+ MoD, BAE & QinetiQ are bad companies
+ We’re top quartile

or,

+ Question and challenge:
  + Leadership
  + Culture
  + Priorities
  + Embed learnings

Leaders create the time and space for good people to do great things