

Leadership Matters

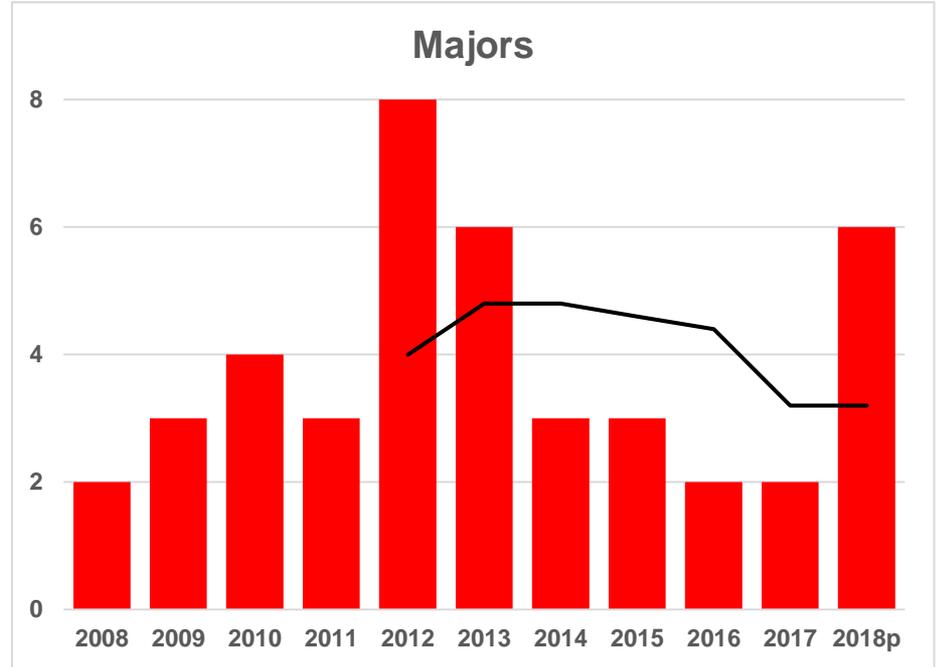
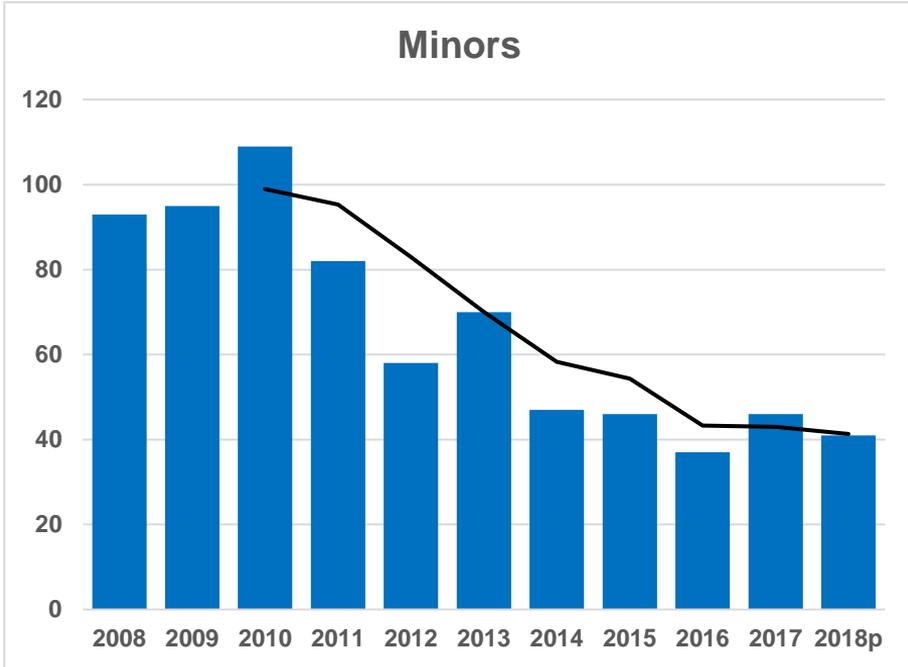
Prevention of Major Hydrocarbon Releases

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OGUK 2019 HSE Conference, 6 November 2019, P&J Live, Aberdeen

Minors HCRS are reducing. But majors keep happening...



Hydrocarbon releases 2008-2018p

Good Process Safety Management isn't demonstrated by the absence of hydrocarbon releases.....but by the presence of strong barriers

Terry Cooper, Total, Safety 30 Conference

The Importance of Asset Integrity



SAFETY

It is the key initial prevention barrier – keep the fluids contained inside the equipment

Left hand side of the bowtie - prevention

ECONOMICS

Vital for efficient production

Essential for Maximising Economic Recovery (MER) Agenda

Control measures for major accident risks

HSE expects dutyholders to understand that major hazard risks have to be managed in a multi-layered way and that the layers of protection or control measures will address technical, managerial and procedural arrangements.

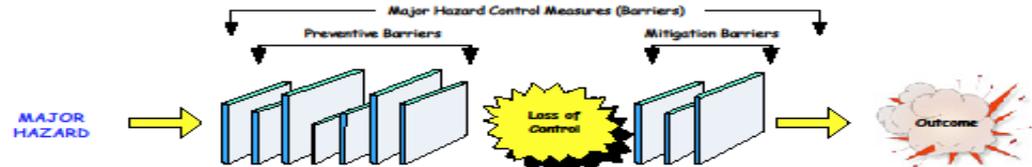


Figure 1 Layers of protection

Layers of protection can be depicted as a 'bow-tie' to emphasise the way barriers link in sequence in relation to each major hazard scenario.

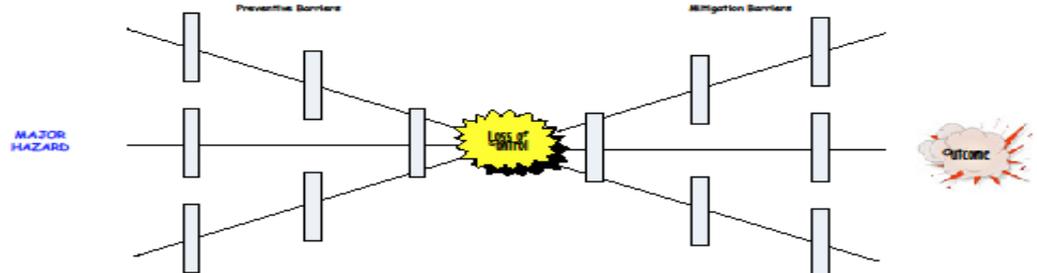
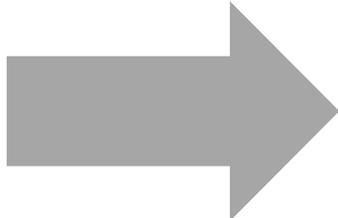


Figure 2 Bow-tie model of layers of protection

HSE Input to Asset Integrity Task Group



- Inspection findings
- Investigation outcomes
- Safety alerts
- Industry inputs
- Guidance



- HSE Topsides Asset Integrity Focus**
- Corrosion Under Insulation (incidents / challenges)
- Valve Integrity (increasing incidents)
- Risk Based Inspection (incidents indicating ineffective)
- Non - Intrusive Inspection (increased desire to utilise)
- Weldless Repair Methods (composites and connectors)
- Corrosion of trunnion supports and pipe supports (CUPS)
- Small bore tubing
- General External Corrosion

Major release due to Asset Integrity management failings

INCIDENT at BRAE ALPHA

26 Dec 2015

POB 100

QUANTITY

Gas

2148 kg

OVERVIEW

Release of gas from 8" HP compressor discharge line due to catastrophic failure.

Major structural damage to surrounding plant, pipework, and boundary panels within module

ENFORCEMENT

IN PFEER Failure to maintain pipework

Major Fine



Asset Integrity Management Challenges



Underlying Causes (OGUK /AITG)

Failure to Identify the Risk

Failure to act on inspection findings

Lack of process / procedure

Failure to comply with the procedure

Barriers to achieving effective Asset Integrity

Resistance to shutting down

Late in field life, partner approvals required

Conflicting Priorities eg drilling, project work

Avoidance of hot work

Insufficient time to analyse inspection findings

It's expensive, resource consuming

Difficult to organise and execute

No immediate return on investment

Asset Integrity – HSE Maintaining Safe Operations Findings

Importance of Technical Authority and Senior Leadership Roles

Presence and involvement offshore essential

Improve awareness/culture on asset integrity

Effective culture is central to improving and maintaining standards

Several DHs recognise the importance and are working hard to improve

Asset Integrity Field Engineers on the offshore installation

Improve decision making and focus on asset integrity

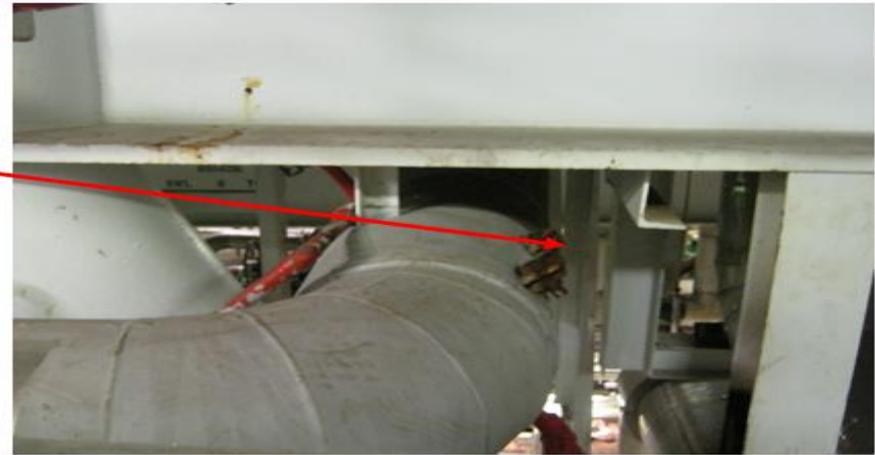
Failure to undertake effective monitoring, audit and review of key risk control systems

Relating to hardware or procedures, and including maintenance and verification

An Alternative View of CUI and Asset Integrity



*The perception may be that millions of dollars were ‘wasted’ on a CUI program because there weren’t many findings...
The reality is that you’ve gained a lot of certainty because you’ve stripped insulation, inspected and recoated the piping*



Major release due to control of work failings

INCIDENT at LOGGS

30 November 2012
POB 66

QUANTITY

Gas
ca. 603 kg

OVERVIEW

Gas release into turbine hall from open end on 4" connection to HP vent header during blowdown event. Failure to control isolations during a task, involving removal of PSV and flexihose connected to the header. Blank not fitted and valve left open.

ENFORCEMENT

Letter
PN
Major Fine



HSE continues to find weaknesses in arrangements for *safe isolation & re-instatement of plant (SIRP)*



Common areas of non-compliance

Integrity of long term isolations not monitored

Hydrocarbon systems not vented to safe location during DFPV

Critical isolations no longer tight shut-off due to lack of maintenance

Non-compliant isolations not risk assessed or additionally controlled

Reliance on service testing of hydrocarbon systems

Failure to prove integrity of both valves in DBB arrangement

Disturbed joints not under flange management control

Hydrocarbon systems not purged oxygen free before reinstatement

Failure to line walk systems or check completion of MoC actions

Full lifecycle of SIRP controls not subject to audit programme



Weak leadership is the common thread



Leaders show the way

Leaders can only make good decisions with good data

Not knowing what is going on at the frontline

Not listening or being visible to staff

Not asking the right questions

Not understanding the risks

Not setting the right standards and expectations

Prioritising production over asset integrity work

Not providing sufficient resources or priority to tackle risks

Inadequate assurance and investigation



Good practice examples of leadership and assurance

LEADERSHIP VISITS

Visit protocols and guidance in place

1st line audits of procedures

Small group discussions

Review of current risk threats

Reinforce company standards

Attend key meetings

Contact with safety reps

Check safety system health

BEHAVIOURS FRAMEWORK

Answers the question

‘What does good safety behaviour look like?’

For all staff, all levels all functions

Tailored/specific for each with examples of expected tasks, behaviours, performance

Addresses Process and Personal Safety

AUDITING

Long term audit schedule agreed at highest level

Frequency/depth of audits related to risk

Common audit templates

Audit training for all staff

Audits and actions visible to all

Major Accident Prevention Barrier Model



PLANT

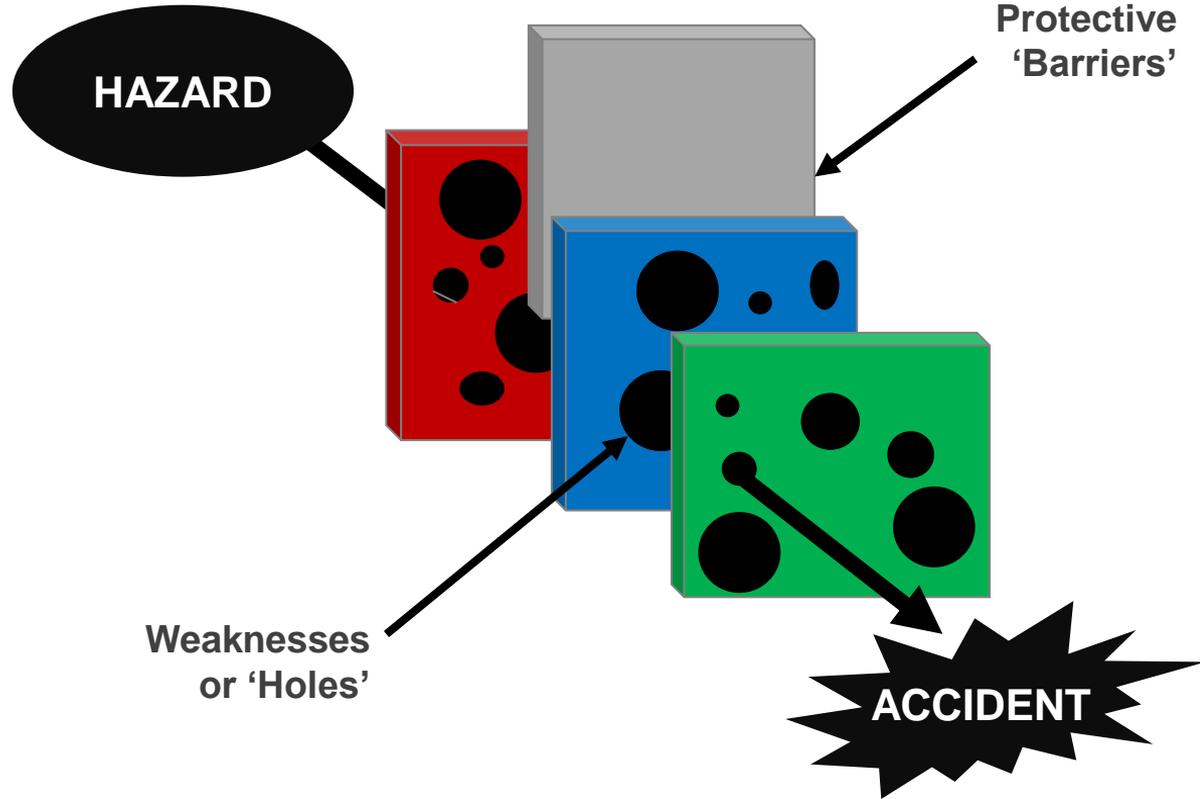
Engineering hardware, control systems, physical layouts

PROCESSES

Management systems to identify, control and mitigate risks, and drive continuous operational improvement

PEOPLE

Capability in terms of leadership skills, relevant knowledge and experience, and the organisational culture



Offshore Process Safety Leadership Principles



- **Clear and positive process safety leadership** is at the core of managing a major hazard business and is vital to ensure that risks are effectively managed;



- Process safety leadership requires **senior leadership team involvement**, understanding and competence;



- Good process safety management requires constant **active engagement and vigilance**;



- Senior leadership team visibility and **promotion of process safety leadership** is essential to set a positive safety culture throughout the organisation;



- **Engagement of the workforce** is needed in the promotion and achievement of good process safety management;



- **Robust and regular auditing** of the safety management system and associated major accident hazard barriers, is essential to ensure that system weaknesses are identified and process safety risks are being effectively managed;



- **Publication** of process safety performance information provides important assurance about the management of risks by an organisation;



- **Sharing good practice** across industry sectors in order to learn and implement lessons from relevant incidents occurring internally and externally to the organisation, is important to maintain the currency of corporate knowledge and competence.



The day the soldiers stop bringing you their problems, is the day you stopped leading them. They have either lost confidence that you can help them, or concluded that you do not care. Either case is a failure of leadership.

Colin Powell, Former US Secretary of State