



HSSE COMMITTEE UPDATES & SAFETY INFORMATION DOCUMENT #2

Alexander Quelle, Gianni Allegretta

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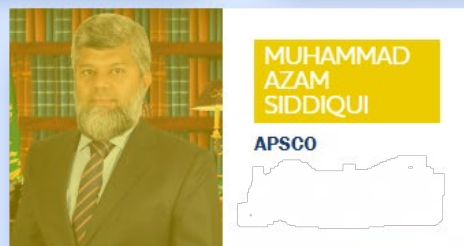


HSSE COMMITTEE – UPDATES

Alexander Quelle, Shell – Member of the JIG HSSE Committee



HSSE COM – Your Members





Committee Update

HSSE COM – Safety Information Documents

Target to publish one SID per year

Safety Information Document #2

- **Expected to be published in June/July 2026**
- **Developed to provide additional guidance on Process Safety Management for operators of aviation fuel handling facilities**

More details later



HSSE Category Definitions

To correspond with the launch of the new Dashboard, the Committee took the opportunity to:

- review and update the HSSE categories and definitions
- apply the new categories and definitions to the JIG Dashboard.



JOINT INSPECTION GROUP

UPDATED HSSE CATEGORY DEFINITIONS FOR THE NEW JIG DASHBOARD

As part of continuous improvement initiatives, JIG will shortly be launching the new JIG Dashboard. An important part of the Dashboard is the ability for JIG Members to upload and track key HSSE data.

To correspond with the launch of the new Dashboard, the JIG HSSE Committee has taken the opportunity to review the HSSE categories and update them as appropriate. These new definitions will be applied to the new Dashboard. Users of the existing Dashboard should continue to use the old criteria until launch of the new Dashboard.

The HSSE reporting function within the JIG Dashboard is an important part of the range of tools JIG provides to help members with their governance processes.

Upload of HSSE data to the JIG Dashboard is mandatory for any JIG Member location which participates in the JIG inspection programme that wishes to be considered for the inspection awards programme.

This Newsflash contains the new categories agreed upon by the HSSE Committee which can be seen below.

If you have any queries relating to this Newsflash, please email HSSE@jig.org

Health Impact (employee or contractor captured within reported hours)		Reporting Frequency
Illness with irreversible health effects ¹	A work-related irreversible illness or health impact, e.g. Loss of hearing.	Monthly
Illness with reversible health effects ²	A work-related reversible illness or health impact, e.g. Skin disorder such as Dermatitis	Monthly
Personal Injury (employee or contractor captured within reported hours)		
Fatality	A work-related incident resulting in a fatality.	Monthly
Permanent Disability ³	A work-related incident resulting in a lifetime disabling injury.	Monthly
Lost Workday Case (LWC)	A work-related incident resulting in a member of the workforce being unavailable for work the next calendar day, even if they were not due to work.	Monthly
Restricted Work Case (RWC)	A work-related incident resulting in a member of the workforce being unable to perform all normal duties when resuming work.	Monthly



Learning From Others (LFO) Publication

Three LFO packs were published in 2025/26, each including six anonymised occurrences: #37 (July 2025), #38 (November 2025) and #39 (April 2026).

LFO Packs now also include ‘Safety Interventions’

For each occurrence, the Committee suggested:

- Contributing Factors
- Toolbox Discussion Points



Safety Intervention - Worn Aircraft Tyre

SUMMARY

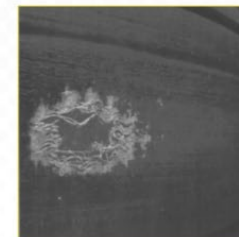
While refuelling an aircraft, the operator noticed that the inner tyre exhibited excessive wear, appearing almost like a hole. The defect was immediately reported to the aircraft captain. The worn tyre was replaced.

CONTRIBUTING FACTORS

- Situational awareness - the operator was vigilant, identifying issues beyond the scope of their own duties but understood their wider duty to be proactive in safety matters
- Assertiveness – the operator took a prompt, correct decision to notify the aircraft crew of the defect

TOOLBOX DISCUSSION POINTS

- Who would you report this type of observation to at your facility?
- When do you think this should be reported?
- How do you ensure you haven't missed any steps when returning to the fuelling process?
- Which other factors might influence your actions in this situation?





2026 – Plans

JIG HSSE MS Standard Review

Aim

- Enhance auditability
- Clarify wording to facilitate consistent implementation
- Strengthen environmental management practices
- Ensure alignment with ICAO Annex 19

Final draft already developed

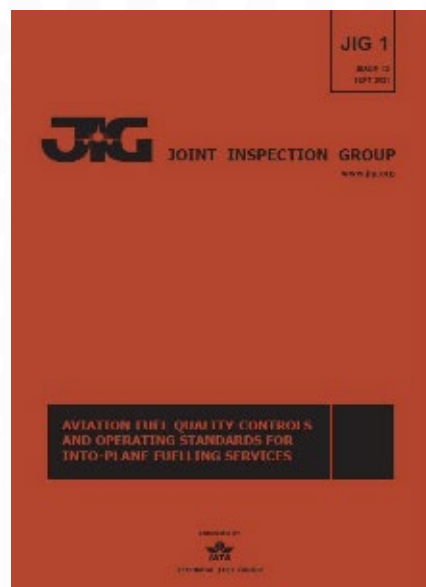
- Includes a review of the Element Aims
- Minor updates to Element titles, but Element structure remains unchanged
- Selected expectations have been consolidated or reallocated



Other Standard Reviews

Reviews conducted

- PPE minimum requirements for JIG 1, 2, 4
- JIG 4, Section 2



HSSE MS Audit ToR Review – No Changes to Auditor Requirements (1/2)

The Board or equivalent overseeing persons shall, when selecting the Auditor, ensure that the appointee is familiar with the content of the JIG HSSE MS Standard and has appropriate qualifications and competencies.

Considerations for the selection of an Auditor should include:

- **industry recognised HSSE certification,**
- **industry recognised auditing certification,**
- **HSSE auditing experience,**
- **Management System auditing experience,**
- **Aviation or fuel handling experience and**
- **personal and professional behaviours.**

HSSE MS Audit ToR Review – No Changes to Auditor Requirements (2/2)

The Auditor shall be either a contracted independent individual or provided by a Shareholder. In order to assure impartiality, they shall not be involved with the Facility's:

- **direct supervision or management,**
- **day-to-day operations or**
- **HSSE MS design, implementation and maintenance.**

The Board or equivalent overseeing persons shall discuss and agree on the suitability of the Auditor; this selection decision shall be recorded. Where possible, the following audit should not be conducted by the same Auditor.

To fulfil the requirements for undertaking a 3-yearly HSSE MS audit, the Auditor shall use the JIG HSSE MS audit report template.


LFO Packs

Please support us in continuing this work by sharing examples of your incidents with the Committee using the provided template.

All submissions are treated with full confidentiality and anonymity.

Link:


<https://www.jig.org/safety-hsse/learning-from-others/>



Learning From Others (LFO) - Template

This template is for JIG Members to submit details of incidents in the spirit of "Learning From Others".
Slide 2 should be completed with the incident details and discussion points, replacing the red guidance text.
Slide 3 is an example of a completed slide, for information
Please email your contributions to HSSE@jig.org

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1 02 April 2026 HSSE 

The text 'Q&A' rendered in large, 3D, blue, sans-serif letters. The letters are positioned on a white surface and cast soft shadows. The ampersand is a light blue color, while the 'Q' and 'A' are a darker blue.



HSSE COMMITTEE – SID #2

Gianni Allegretta, Enilive – Member of the JIG HSSE Committee



1

Introduction and Purpose

2

What is Process Safety Management

3

Process Safety Management Elements

4

Process Safety Fundamentals (PSFs)

5

Hazards, Barriers and Controls

6

Learning from Incidents & Continuous Improvement

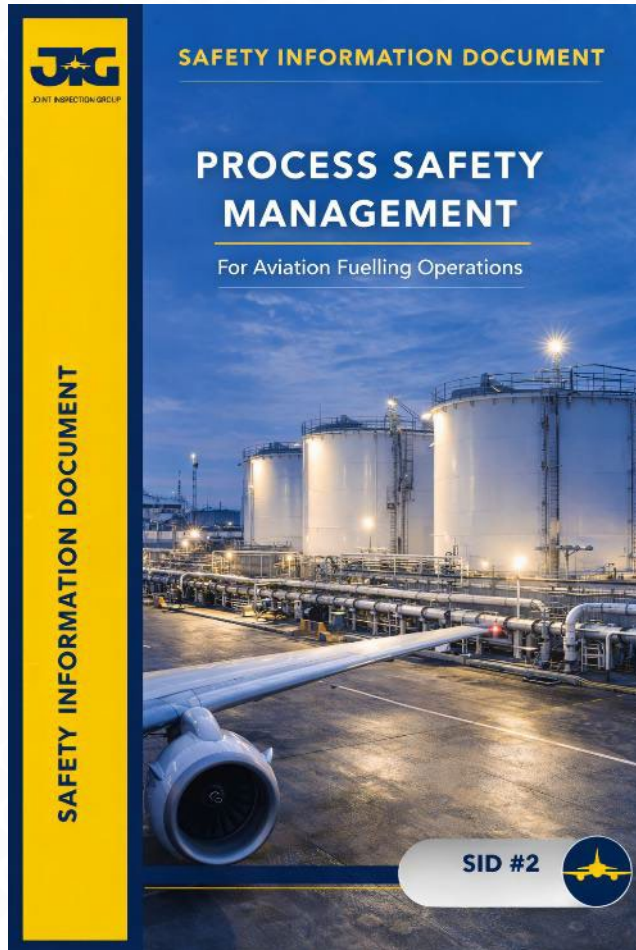
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Key Messages

Introduction and Purpose

Purpose of SID #2

- Promote consistent understanding of Process Safety Management across JIG Operations
- Support fuel depot and into-plane managers in maintaining safe systems
- Reinforce behaviours that protect barrier integrity
- Strengthen the effective use of existing JIG HSSE processes



*Process safety is about **preventing major incidents**, not replacing existing procedures.*

What is Process Safety Management (PMS)

Process Safety Management is the systematic management of systems, procedures and behaviours that ensure hazardous substances remain safely contained, preventing unplanned releases that could lead to major incidents.

Systems

Storage tanks, pipelines, hydrant systems, pumps and valves designed to safely contain and control fuel.

Procedures

Operating limits, maintenance, inspections and management of change that ensure systems are operated safely.

People

Competence, communication and operational discipline to recognise hazards and protect process safety barriers.

Process safety management is about maintaining control of fuel systems to prevent major incidents.

Occupational Safety vs Process Safety

Occupational Safety (Personal)

Focuses on incidents which may impact workers or those nearby and protecting the safety, health and welfare of people at work

 **Focus:**
The Individual


 **Hazards:**
Slips, Trips, Falls, Cuts

 **Frequency/Severity:**
High/Low

 **Key Metric:**
LTI/TRIR (injury Rates)

Process Safety (Asset)

Focuses on major accident hazards associated with releases of energy, chemicals and other hazardous substances.

 **Focus:**
The System/Asset

 **Hazards:**
Explosions, Fires, Leaks

 **Frequency/Severity:**
Low/High

 **Key Metric:**
LOPC / Maintenance backlog

The Baker Paradox: Having a low personal injury rate does NOT mean you are safe from a major process incident



Why Process Safety Matters in Aviation Fuelling

- Prevention of catastrophic incidents
- Managing high-risk fuel systems
- Supporting the safety management system
- Maintaining safe and reliable operations



Process safety protects people, assets and operations by preventing loss of containment.

Core Principles for Managing Process Safety



Leadership commitment

Set expectations and reinforce safe behaviours.



Communication and handover

Share clear and accurate information.



Roles and responsibilities

Understand responsibilities and escalate issues.



Competence and hazard awareness

Understand hazards and recognise deviations.



Operational discipline

Follow procedures and operating limits.



Speaking up

Question abnormal conditions and escalate concerns early.

Typical Process Safety Exposures areas

Equipment and Maintenance Failures

- Poor maintenance, incorrect installation or degraded equipment can lead to fuel leaks or system failure.

Fuel System Failures

- Failures in fuel transfer systems, pumps, valves or hydrant equipment can result in loss of containment.

Deficiencies in Procedures or Documentation

- Inaccurate or unclear procedures can lead to incorrect operations or maintenance activities.

Improper Management of Change

- Changes to equipment, procedures or operating conditions can introduce new hazards if risks are not assessed.

Equipment Reliability Issues

- Ageing equipment, corrosion or component failure can weaken barriers and increase the risk of fuel release.



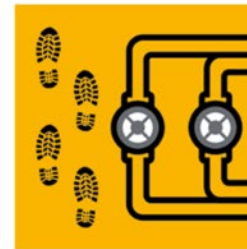
Process safety exposures arise when equipment, procedures or operational controls fail.

Process Safety Fundamentals (PSF)

- ❑ Based on lessons from serious industry incidents
- ❑ Ten fundamentals guiding everyday behaviours
- ❑ Complement Life Saving Rules
- ❑ Apply across storage, hydrant, transfer and into plane operations
- ❑ Build awareness of major hazards and abnormal conditions
- ❑ Encourage people to speak up early



Maintain safe isolation



Walk the line



Apply procedures



Sustain barriers



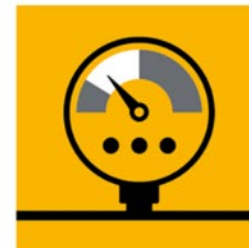
Control ignition sources



Recognize change



Respect hazards



Stay within operating limits



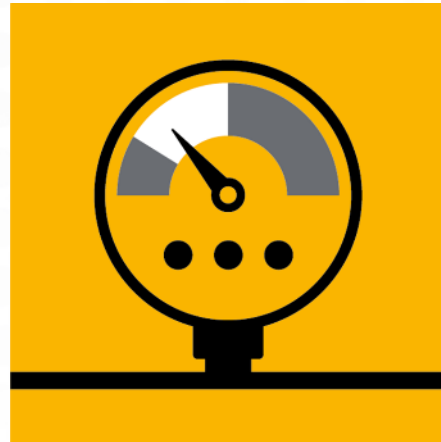
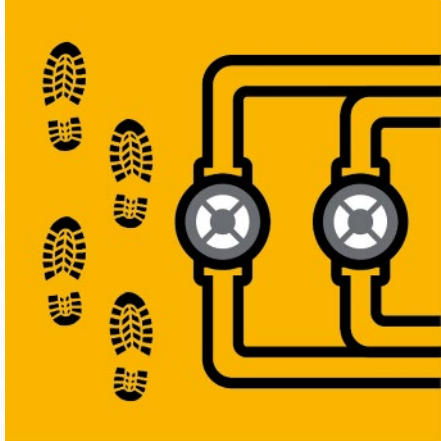
Stop if the unexpected occurs



Watch for weak signals

<https://www.iogp.org/bookstore/product/process-safety-fundamentals/>

The 10 Process Safety Fundamentals



<https://www.iogp.org/bookstore/product/process-safety-fundamentals/>



How to use the Process Safety Fundamentals



Toolbox talks & Safety meetings

Can we learn from incidents that involved a PSF not being followed?



Pre-job planning

- How are the PSF applicable to the work we are doing today?
- What needs to be in place?
- Is everything in place, and in good working condition?



Last minute risk assessment

- Have I done all the PSF actions relevant before the job?
- Are there any Line of Fire hazards or ignition sources we didn't identify?



Post-job reviews

- Did we take all the actions associated with the PSF?
- What went well? What didn't go well?



Observations & walkabouts

- Are they following it?
- Yes? Great, recognise it!
- No? Intervene!
- If someone brings up a PSF dilemma, thank them and show them you will take it seriously.



Intervention

- Intervene or stop the work if a PSF is not being followed

How hazards are identified

Hazard Identification Studies

- Structured hazard reviews examine how systems could deviate from intended operation
- Techniques such as HAZOP analyse fuel systems, storage and transfer operations
- Identify potential hazards, consequences and existing safeguards

Risk Assessment

- Operational risks reviewed using structured risk assessment processes
- JIG Business Risk Assessment helps identify hazards in storage, hydrant and into-plane activities
- Highlights where additional controls or attention may be required

Operational Experience and Learning

- Incidents, near misses and abnormal conditions highlight potential hazards
- Investigations help identify weaknesses in barriers, procedures or equipment
- Lessons learned help prevent recurrence across operations

Management of Change

- Changes to equipment, procedures or operating conditions can introduce new hazards
- The Management of Change process ensures risks are reviewed before implementation
- Helps prevent unintended consequences from operational changes

Hazards can be identified during design, day-to-day operations and when changes occur.

How Process Safety Hazards Escalate



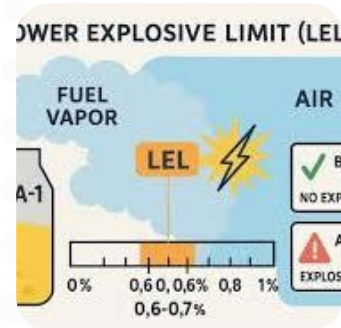
Hazard

A deviation from normal conditions occurs, such as incorrect valve position, equipment failure, operational error.



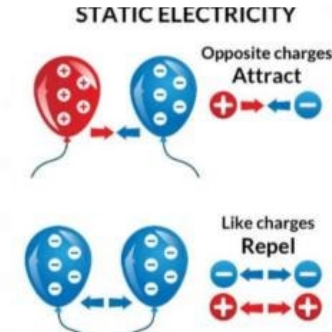
Loss of Containment

Fuel escapes from tanks, pipelines, hydrant systems, hoses or vehicles.



Vapour Formation

Released fuel can form flammable vapors, particularly in confined or poorly ventilated areas



Ignition Source

Static electricity, vehicles, electrical equipment or hot surfaces can ignite fuel vapours



Major Incident

Escalation may lead to fire, explosion, environmental damage or operational disruption

Major incidents usually occur when hazards escalate and barriers fail.



Process Safety Barrier and controls

Engineering Barriers

- Physical systems designed to prevent loss of containment or detect abnormal conditions
- Examples include tank overfill protection, pressure relief systems, alarms and shutdown systems

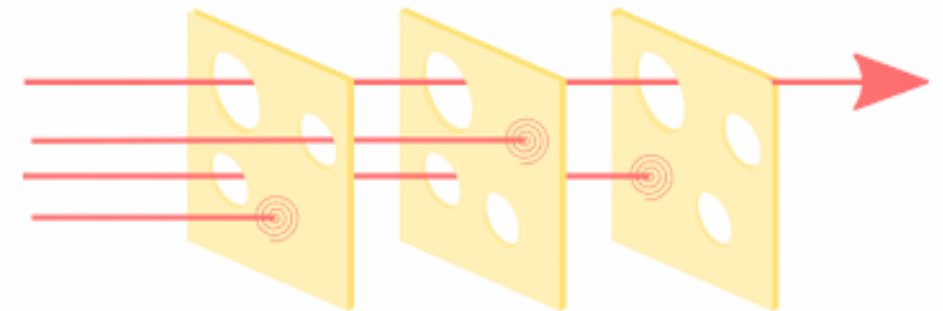
Procedural Barriers

- Operating procedures and work processes that help ensure systems are operated safely
- Includes operating limits, inspection routines, permits and maintenance activities

Human and Behavioural Barriers

- Competence, communication and operational discipline help ensure hazards are recognised and addressed
- Includes effective shift handover, reporting abnormal conditions and stopping work when safety is uncertain

Process safety relies on multiple layers of protection that prevent hazards from escalating



When these barriers work together effectively, hazards are controlled

Multiple barriers are required to prevent hazards from escalating into major incidents.

Management of Change (MoC)

The What

- A systematic process in assessing risk before changes are implemented
- To ensure changes do not occur without proper considerations

The Why

- Uncontrolled change is a common cause of major incidents.

The Change

- Equipment
- Operating conditions
- Procedures



JIG HSSE MS Element 8 : Management of change

In aviation fuelling operations this could include modifications to tanks, hydrant systems, equipment configuration or maintenance activities

Uncontrolled or poorly managed change is a common factor in major incidents.

Operating Safety Day to Day



Stay Within Operating Limits

- This includes monitoring differential pressure (DP) and flow rates to ensure the system isn't overstressed.

Effective Communication and Handover

- Accurate shift handovers ensure important information is shared
- Communicate abnormal conditions, maintenance activities or system changes

Manage Interfaces Safely

- Coordinate activities with contractors, maintenance teams and third parties
- Ensure everyone understands the hazards and operating conditions

Recognise and Respond to Abnormal Conditions

- Leaks, alarm activations or unexpected readings require attention
- Use **Stop Work Authority** if conditions are unsafe or uncertain and escalate concerns

Strong operational discipline and clear communication help maintain the barriers that prevent major incidents.

Learning from Buncefield: When Weak Signals are Missed

1. Operating Limits (The "Stuck" Gauge)

The Signal: The Automatic Tank Gauge (ATG) stopped updating for hours.

Operational Lesson: Any static or "frozen" reading is an abnormal condition that must be investigated immediately.

2. Communication (The Shift Handover)

The Signal: Personnel were unaware of the total volume pumped from the pipeline during the night shift.

Operational Lesson: Handovers must be formal and based on **hard data** (litres pumped vs. tank capacity).

3. Interface Management (Pipeline & Depot)

The Signal: Inadequate coordination on pumping rates and stop-times between the pipeline operator and the depot.

Operational Lesson: Safety is a shared responsibility across the **entire interface**; confirm work scope and emergency contacts before every transfer.

4. Abnormal Conditions (The Vapour Cloud)

The Signal: A heavy, white vapour cloud formed 250m around the tank before ignition.

Operational Lesson: Use your Stop Work Authority at the first sign of an unusual smell, noise, or sight.



Learning from an Aviation Fuelling Incident: Hydrant Pit Fuel Fountain

1. Operating Limits (Hydrant System Integrity)

The Signal: The hydrant coupler was struck, causing damage to a pressurised fuel system.
Operational Lesson: Damage to hydrant equipment can result in immediate loss of containment.

2. Emergency Shutdown (Hydrant Isolation)

The Signal: The hydrant pit lanyard valve could not be operated to stop the fuel release.
Operational Lesson: Operators must know the location of the nearest hydrant Emergency Shut Down (ESD).

3. Recognising Abnormal Conditions

The Signal: A fuel fountain approximately 6 metres high formed within seconds.
Operational Lesson: Any unexpected fuel release must trigger immediate shutdown and escalation.

4. Maintaining Barriers

The Signal: Damage to the hydrant coupler removed a key containment barrier.
Operational Lesson: Protecting fuel system equipment is critical to preventing loss of containment



LFO170-2020

Pressurised hydrant systems can release large volumes of fuel rapidly. Immediate recognition and shutdown are critical to preventing escalation.

Learning from Events

Learning from an Aviation Fuelling Incident: Underground Pipeline Leak

Asset Integrity (Underground Pipeline)

The Signal: Fuel levels in the underground pipeline dropped rapidly during a pressure test.

Operational Lesson: Unexpected product loss during testing may indicate loss of containment and must be investigated immediately.

Loss of Containment

The Signal: Approximately 10,000 litres of Jet A-1 leaked from an underground pipeline.

Operational Lesson: Pipeline failures can release large volumes of fuel and create environmental and fire hazards.

Inspection and Maintenance

The Signal: The underground pipeline had been in service for over 30 years with evidence of corrosion.

Operational Lesson: Ageing infrastructure requires effective inspection, corrosion monitoring and maintenance programmes.

Monitoring and Detection

The Signal: Fuel was detected in the interceptor following the pressure test.

Operational Lesson: Stock control, monitoring systems and drainage inspections help identify leaks before escalation

Maintaining Barriers

The Signal: The pipeline had no secondary containment or cathodic protection system.

Operational Lesson: Protective systems and regular inspection are essential barriers against corrosion and pipeline failure.



LFO53-2015

Continuous Improvement

Organisations regularly check that safety barriers are functioning as intended



Performance indicators help identify potential issues before incidents occur

Learning from incidents, near misses and operational feedback helps organisations strengthen controls and improve procedures

Applying the plan, do, check and act cycle helps ensure improvements are implemented and sustained



A black-outlined speech bubble with a white background, containing the text 'Key Messages' in a bold, blue, sans-serif font.

Key Messages

1. Process safety is about preventing major incidents, not reacting to them
2. Loss of containment is the primary risk in fuel operations
3. Major incidents occur when hazards escalate and barriers fail
4. Strong barriers depend on equipment, procedures and people working together
5. Abnormal conditions must always be recognised, challenged and escalated
6. Weak signals are early warnings and must never be ignored
7. Operational discipline and communication are critical to maintaining control
8. Learning from incidents and near misses strengthens future performance

Q&A

