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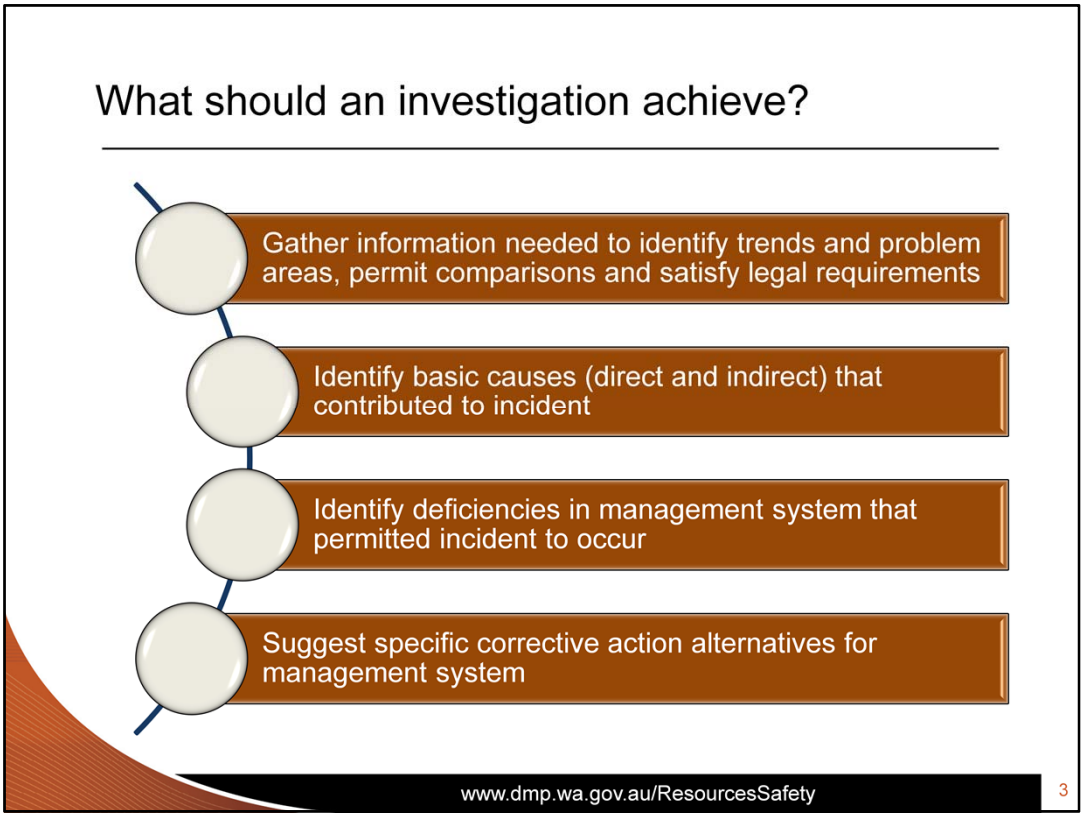
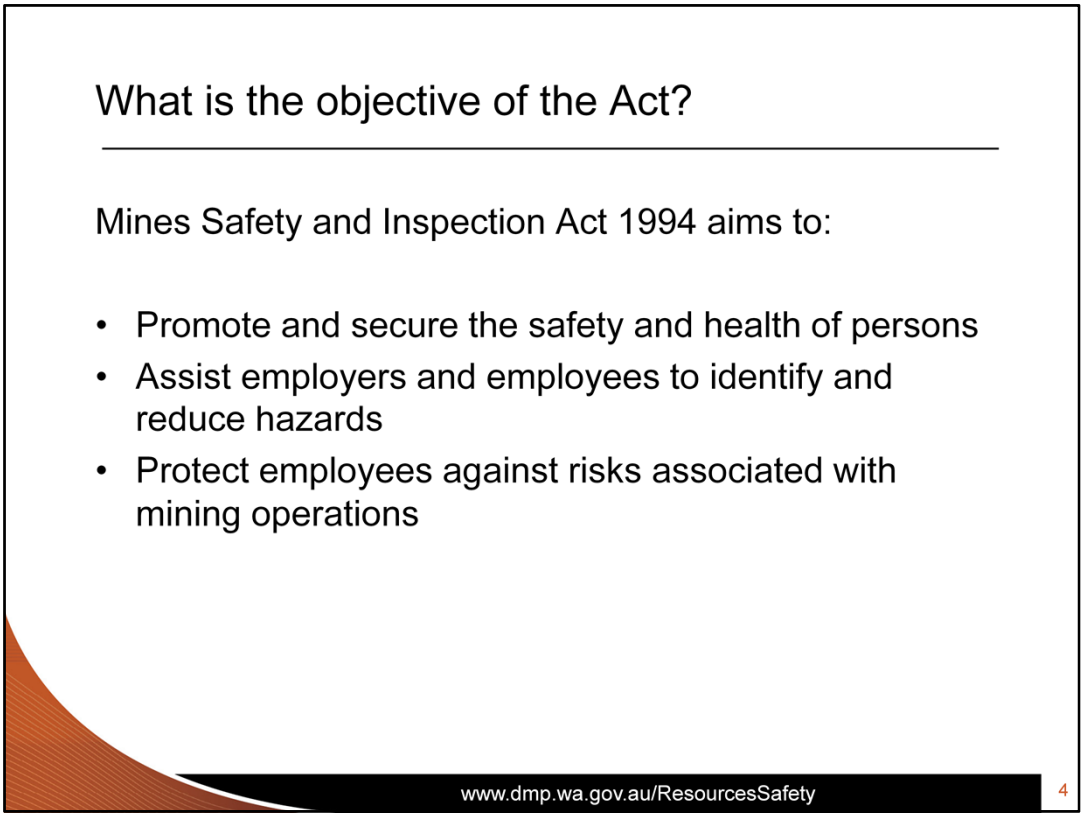
This workshop is based on a presentation by Dr Todd Conklin at the 2013 IFAP conference, “Safety on the Edge”.



There are many reasons why investigations are done. *Discuss the list.*

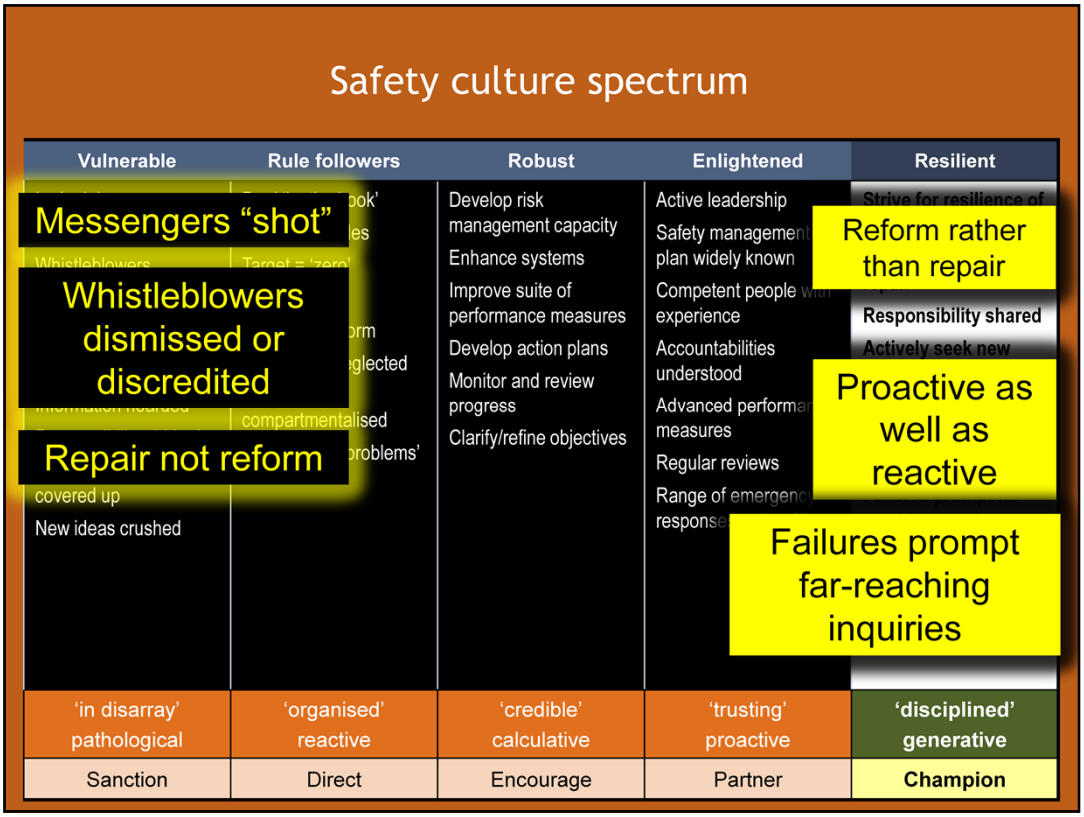
Mines inspectors undertake an investigation to determine if there have been breaches of the legislation. But also, just as importantly, to gather information for safety alerts (significant incident reports, safety bulletins) to share the learnings with industry and help prevent re-occurrences.



For sites, undertaking effective investigations is important to meeting the aims of the Mines Safety and Inspection Act for both reactive and proactive reasons.

Reactive – What went wrong?

Proactive – How can we stop it happening again?

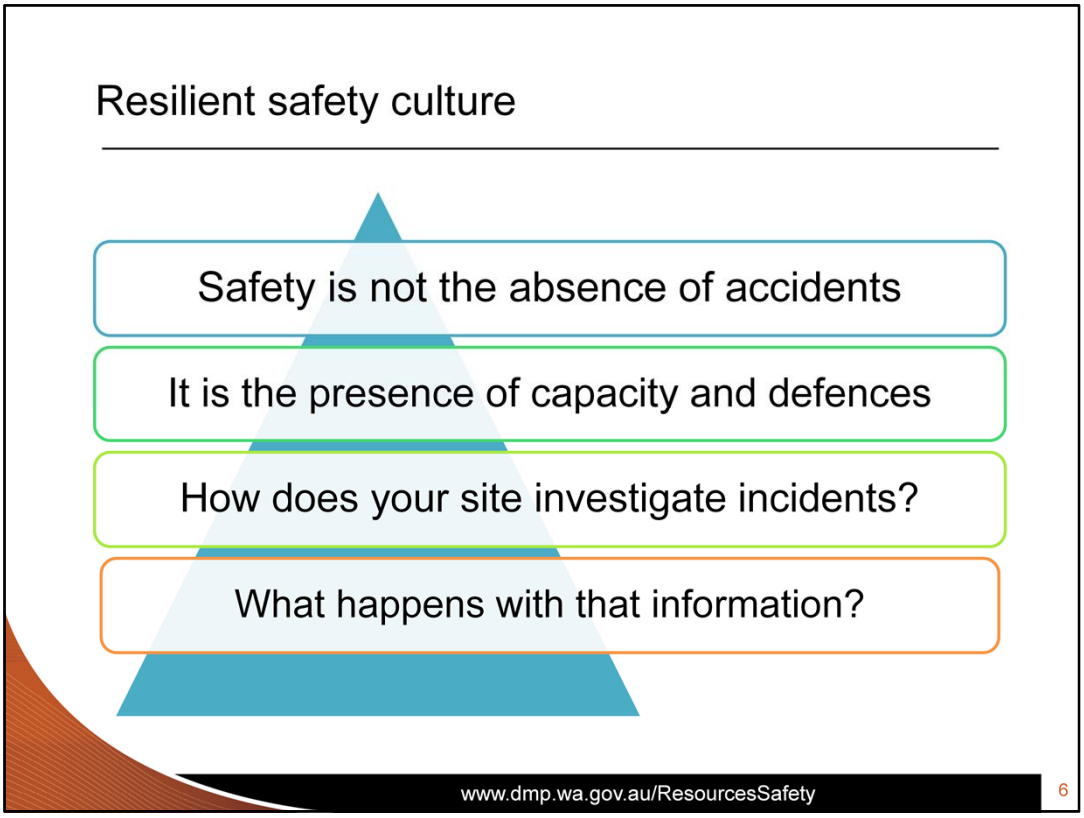


We want to get the most that we can from an investigation.

This means that we need as much information as possible – and people need to feel that they can provide it freely.

We also want to ensure that we have effective long-lasting solutions arising from those investigations – reform rather than repair.

Each click highlights an attribute on the safety culture spectrum – three for vulnerable and three for resilient.



Dr Todd Conklin says that workers are fallible and error is normal. His view is that safety is not the absence of accidents but how well equipped we are to mitigate or moderate the consequences.

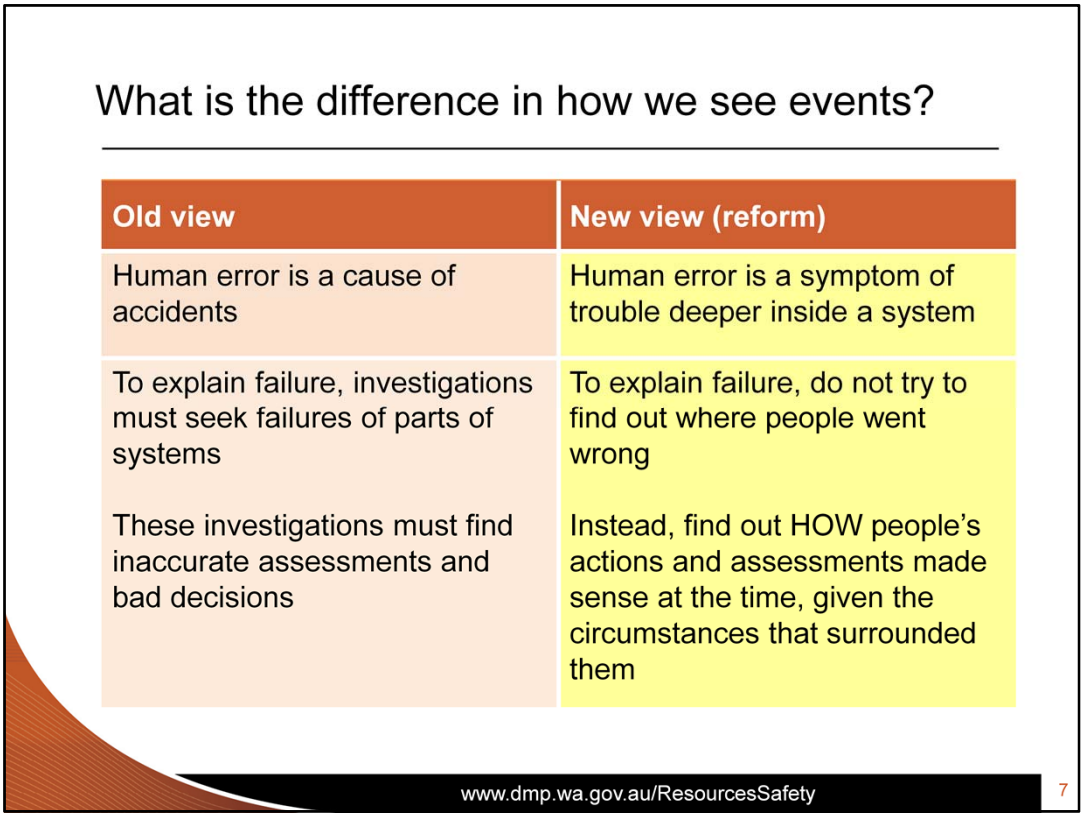
If we assume that workers don't cause failure but can trigger latent conditions then we need to view failures differently. We will also shift our focus to prevention and control.

What outcomes might we achieve from an investigation by shifting our thinking from "**why"** to **"how**", and from "**who"** to **"what"**?

Can we move from a blame and shame scenario to an understanding of "**what"** and "**how**" so we can better understand how those latent conditions came about – and what we can do about them?

We need to build capacity in our organisation so we can learn from events. But, as Dr Conklin says, safety should not be onerous to the point of being ridiculous.

How can a site get the best value out of its investigations?
Are near-misses investigated with the same vigour as those where people were hurt or equipment damaged?
Are safety and health representatives involved – and have they been appropriately training so they can make useful contributions to discussions?
Are the people affected in the workplace involved in developing the solutions?
Is the workforce advised of the outcome of investigations, especially the learnings?



Discuss slide content. Focus on new view, yellow box, as this sets the scene for workshop activity.

Click to activate animation while talking.

Don't focus on who and why, find out what happened and how it was able to happen. It can be easy to jump to conclusions and get a quick answer – but it may not be the full answer and some learnings may be missed.

An example is vehicle safety. The driver is the most important component for safety but can also be the most unreliable due to fatigue, inattention, lack of skill and so on.

If a driver misses a corner and runs off the road, it would be easy enough to say that the "who" was the driver, and the "why" was speed.

If we adopt the anagram approach, we would ask "what happened" and "how was it able to happen"?

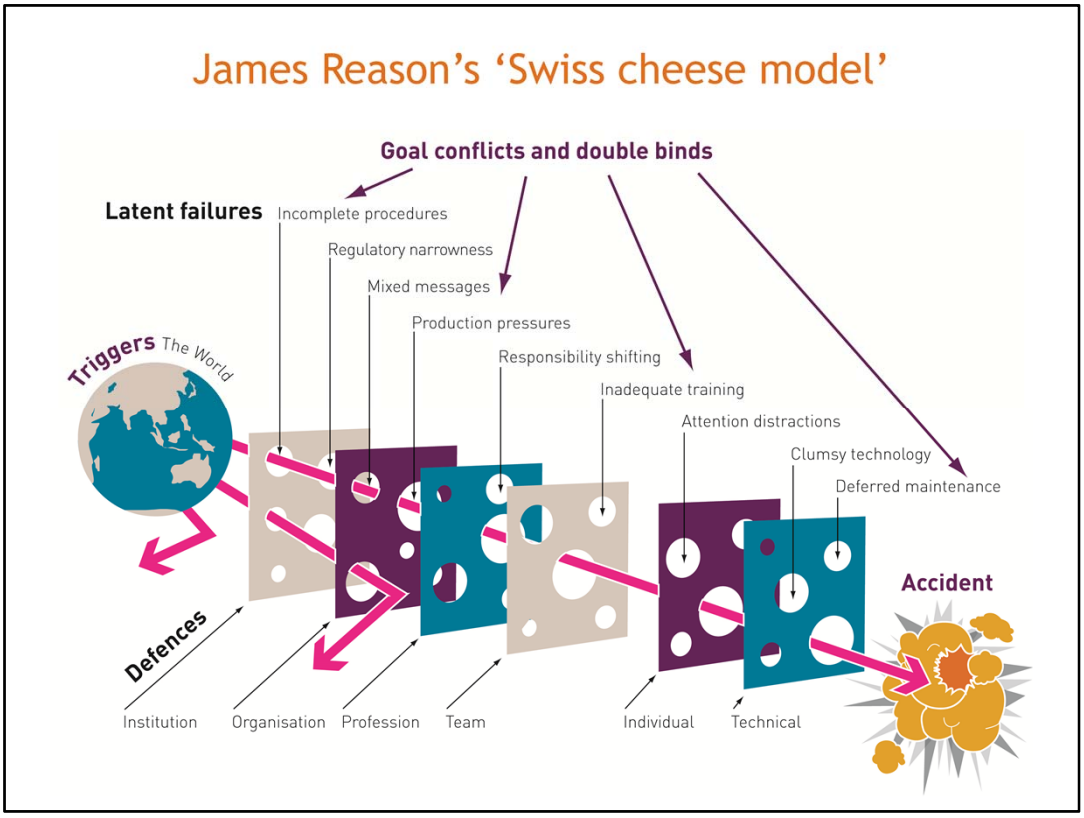
It may be that the corner was obscured, the camber was wrong, the tyres were worn, the driver was not experienced in the type of vehicle or the conditions (e.g. torrential rain). This gives us many more options for looking at how we might prevent a recurrence. We could clear vegetation, modify the road layout and provide training and opportunities to practise cornering under a variety of conditions.

Also, manufacturers design cars to be safer, with features such as airbags, ABS braking, better visibility, collision avoidance systems, reversing cameras and the list goes on. We also make intersections safer by their design and with greater visibility.

So the focus is not on the driver failure but addressing the contributory factors we have identified by asking “How?”. In road safety, this has led to improvements in:

- design of vehicles
- design of roads and intersections
- traffic management
- driver competency through more rigorous training regime.

A note of caution – sometimes driving is too easy and people forgot to look out for the dangers. So identifying and understanding the hazards is a critical skill, and a state of wariness must be maintained.

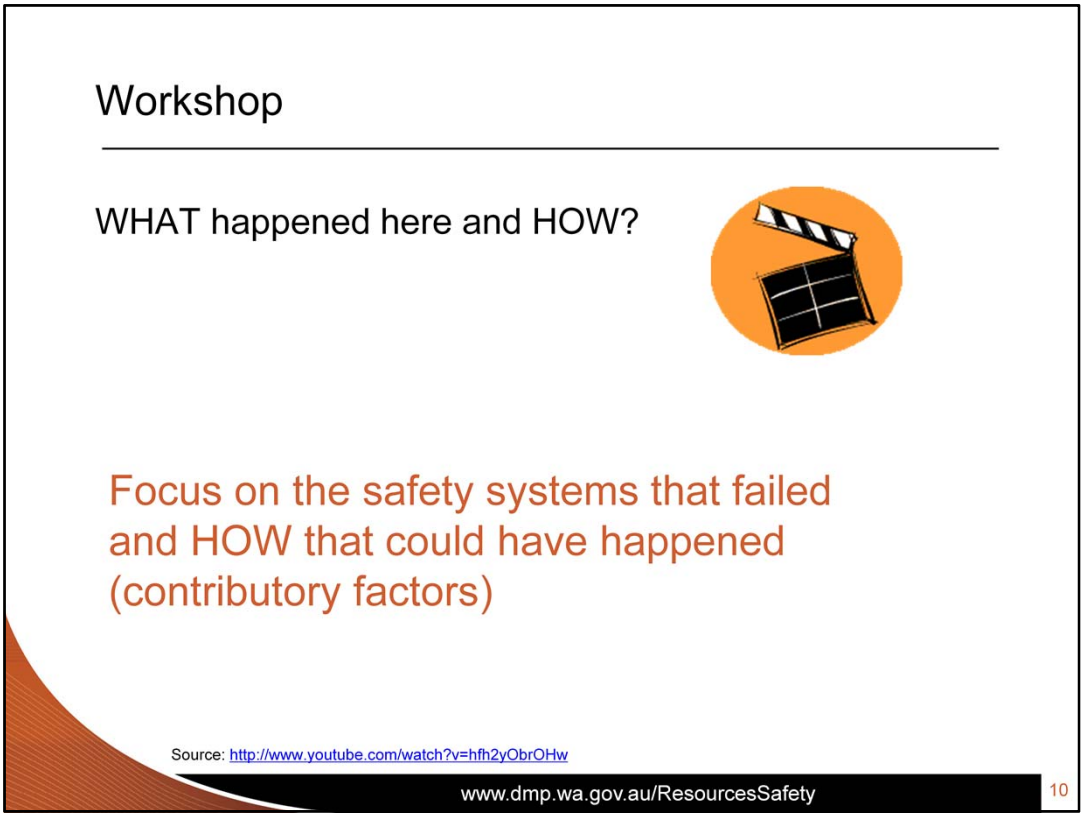


Many years ago (1990), Professor Jim Reason identified several types of human error. You may know his "Swiss cheese model", which he used for explaining how unintended weaknesses or errors can lead to medical mishaps. There are a series of barriers (or cheese slices) between a hazard and the patient. When the "holes" in these barriers line up, an accident can occur.

These error types were defined as slips and lapses, mistakes and violations.

Slips have been defined as "actions not carried out as intended or planned".
Lapses have been defined as "missed actions and omissions, somebody has failed to do something due to lapses of memory and/or attention or because they have forgotten something".
Mistakes are defined as "somebody did something, firmly believing the action to be correct, when it was, in fact, wrong".
Violations sometimes appear to be human errors, but they differ from slips, lapses and mistakes **because they are deliberate actions**. Somebody did something knowing it to be against the rules; like deliberately failing to follow the procedures that they clearly knew and understood.

People are fallible, they have slips and lapses, they make mistakes. If there is an incident, the systems in place did not provide enough controls to stop these "errors".



Discussion topic - Why do some organisations, or people, appear to be focused solely on punishing **slips**, **lapses** and **mistakes**? Maybe it is more appropriate to the limit punishments to people who actually create **violations**? Think about it.

Do you see any of these types of errors in this film clip?

Watch clip.

Breakout session – Rather than discuss who did what and why something failed (e.g. chain not strong enough), encourage participants to explore what happened and what allowed it to happen.
For example, a person walked under the truck just before it fell – how was it that no fall or exclusion zone had been delineated? No policy or procedure? Lack of training or awareness about this hazard? Inadequate risk assessment and management? Inadequate supervision?

Take-away messages

- Look beyond formal investigations and adopt this approach in the workplace setting when planning jobs
- Ask WHO is doing what task and WHY before starting the job
- Near-miss events are opportunities to maximise the benefits from asking WHAT and HOW during an investigation