

# Components of Organizational Learning From Events

A review of current organizational learning practice and experience of IOGP Learning From Events Workgroup members



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**Summary of Guiding Principles**

- For an organisation to learn something has to
- Learning is one of the ways we manage risk
- Sharing is not the same as learning
- Balance short term temporary mitigation with
- You will need to focus
- Learning is a distributed effort
- Don't restrict learning to individual incidents
- Promote collaboration between different par
- Leaders make learning work
- Close the loop

**Map of components**

	A) Recognise and report events	B) Investigate events	C) Systematically apply learning	D) Support self-motivated learning
<b>Intent</b>	Individuals recognise accidents and hazardous situations, act to mitigate, and have tools and processes to promptly report them	Capable investigators use appropriate tools to investigate events with the greatest potential for learning	A mechanism for gathering, evaluating, and acting on the business to deliver sustained change to plant and what people do	Systems that help ensure that it returns to their use it and report what
<b>Basic process</b>	1. Recognise event 2. Act to prevent or mitigate 3. Report	1. Gather information 2. Determine learning potential and assign investigation resources 3. Investigate and develop recommendations 4. Manage actions	1. Gather information you might learn from 2. Evaluate information 3. Agree what the right action is 4. Manage actions 5. Evaluate effectiveness	1. Find learning 2. Use learning in 3. Share learning
<b>People</b>	• Skills and knowledge to recognize event or emerging hazard • Skills and knowledge to take immediate action and mitigation • Culture of reporting and individual commitment to reporting • Consistent understanding of definitions	• Capability of investigators • Capability of assembled investigation team • Leadership behaviours that encourage inquiry	• Individuals accountable for systematic learning • Understanding difference between systematic learning and self-motivated learning	• Individuals learning from • Prompts for learning • People • Other • Leader • Learn
<b>Tools</b>	• Easy to use reporting system • Triggers for response and notifications	• Human factors tools and skills • Interview techniques that aid recall • Investigation analysis tools • Means of categorising findings	• System of alerts • Policies and work practices • Tools to use in analysis • Tools for applying learning to practices and procedures • Tools for objectively risk-basing learning	• Libe • Set • Top • M

**A) Recognise and report events**

**Intent**  
Individuals recognise incidents and hazardous situations, act to mitigate, and have tools and processes to promptly report them

**Basic process**

Recognize event → Act to prevent or mitigate → Report

**Process**

**Recognise**

**Have you considered?**

- Individuals recognise something that needs to be acted on and learned from, which may include:
  - A loss event
  - A near miss
  - The emergence of a risk or hazard
- Individuals and teams take action to control the risk, a) action to prevent and mitigate, notifying stakeholders, authorities, workforce and first responders to preserving the physical evidence at the scene and what happened.

**Act to prevent or mitigate**

- Individuals and teams report the event so that adequate resources can be assigned to learn from it.

**Report**

**People**

**Skills and knowledge to recognise event or emerging hazard**

**Have you considered?**

- When a workforce has a wide understanding of hazards, ways that barriers can fail and indicators of increased risk, they are better equipped to spot problems, take action and report them. You can support this with:
  - Proactive awareness raising and campaigns
  - Tool box talks
  - Safety moments and learning discussions

**Skills and knowledge to take immediate action and mitigation**

This will be a company's normal incident response practices

# Introduction

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## What this document is for

This document describes some of the components an organization might consider if it wants to improve how it learns from operating experience to reduce risk and prevent incidents.

For the purpose of this document, “learning” is defined as

*“The practice of drawing on the experience and foresight of ourselves and others, leading us to recognize the need and opportunity to reduce risk, by acting to change equipment, processes, team or individual behaviour.”*

It is not intended to be a standard and does not recommend a particular approach. The workgroup recognizes that there are many different opinions on what is required to successfully learn from events. It also recognizes that many companies are on a journey to improve learning from events, and may be currently focussing on particular areas. To aid this effort the team has surveyed the practice and experience in IOGP member companies. Member companies can use this to decide whether there are additional working practices that they might benefit from adopting.

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## The structure of this document

This document is divided into three parts:

- Part 1:** A set of [Guiding Principles](#). These are a set of assumptions that will help guide you as you build a strategy to improve learning
- Part 2:** A [Map of Components](#) that, taken together, describe the main areas of focus for IOGP member companies. The map describes both:
- The systematic approach that a company takes to learn from incidents (column A-C)
  - How a company supports individuals to seek out and act on learning (column D)
- Part 3:** [Detail of components](#). This describes processes, people aspects and tools you might want to consider when seeking to improve components of learning, based on IOGP member company experience.

## Part 1

# Guiding principles

### Summary of Guiding Principles

1. For an organization to learn something has to change
2. Learning is one of the ways we manage risk
3. Sharing is not the same as learning
4. Balance short term temporary mitigation with long term sustainable response
5. You will need to focus
6. Learning is a distributed effort
7. Don't restrict learning to individual incidents
8. Promote collaboration between different parts of your business
9. Leaders make learning work
10. Close the loop

The IOGP workgroup has identified some guiding principles which may help member companies to understand what organizational learning is and build a strategy to promote it.

#### 1. For an organization to learn, something has to change sustainably

For an organization to learn, something has to change; that can be either equipment, or what people do. Everything else, procedure updates, training, changes to maintenance or assurance, is in service of that. This change must be sustained. When a company takes action that cannot be sustained the chances are the learning will not endure.

#### 2. Learning is one of the ways we manage risk

Learning and risk management are closely related. When an organization learns it draws on information and intelligence about emerging risks, or risks that are higher than previously thought. The organization has learned when it has taken action to eliminate, control or mitigate the risks.

#### 3. Sharing is not the same as learning

For the above reasons the workgroup believes that "sharing lessons" is not enough to achieve organizational learning. Sharing does serve a purpose in providing people and organizations information on which they can act. Raising awareness of hazard can provide some short term focus and protection. However, without actions that create sustainable change there is a risk of repeat once this temporary effect wears off.

#### 4. Balance short term temporary mitigation with long term sustainable response

Organizational learning depends on sustainable action. However, designing, agreeing and implementing long term actions can take time. Alongside these longer term actions you should consider what immediate action you can take that will mitigate the risk while the more sustainable action is determined. This may include alerting people to a hazard, barrier vulnerability or incident mechanism, so that they can assess what their own response should be.

5. **You will need to focus**

There is a huge pool of internal and external information from which a company can learn; incident information, data, trends, audits and alerts to name a few. A company must pick those things that are relevant to their operation, and focus learning resources on the learning that helps manage their most significant risks (for instance Process Safety). Learning can be challenging if you set out to learn everything but you can start making a difference by focussing on something that matters to you.

6. **Learning is a distributed effort**

Approaching learning as a single centralized resources can lead to a bottleneck, because of the large number of potential sources and actions necessary to learn. You may be more successful if you can involve many people, with many eyes and brains watching for potential learning and many hands acting on it. For this reason self-motivated learning is an important component.

7. **Don't restrict learning to individual incidents**

Look across your incidents for patterns and themes and draw on other information that you may have. Look at experiences from outside your company as well.

8. **Promote collaboration between different parts of your business**

Collaboration is important in delivering action across different parts of the organization. It allows you to connect parts of the business that have already recognized or have good practice to tackle an issue. It also allows you identify effective actions and prioritise them alongside existing planned risk reduction work.

9. **Leaders make learning work**

As with many important parts of operation, leadership in learning is essential. Leaders encourage open reporting and visibly champion deep enquiry and change in response to learning. Leaders own and participate in learning processes and encourage people to draw on learning information for their everyday roles. Leaders can also inhibit learning by reacting in the wrong way to reports, seeking to apportion blame and adopting "zero tolerance" stances.

10. **Close the loop**

Judging the effectiveness of learning is important. This means assessing how effective your actions have been in achieving change. If you can prove to yourself that action has been taken and it has had the effect you wanted, you are a long way towards the sustainable change that you need for learning.

# Part 2

## Map of components

### Using the map of components

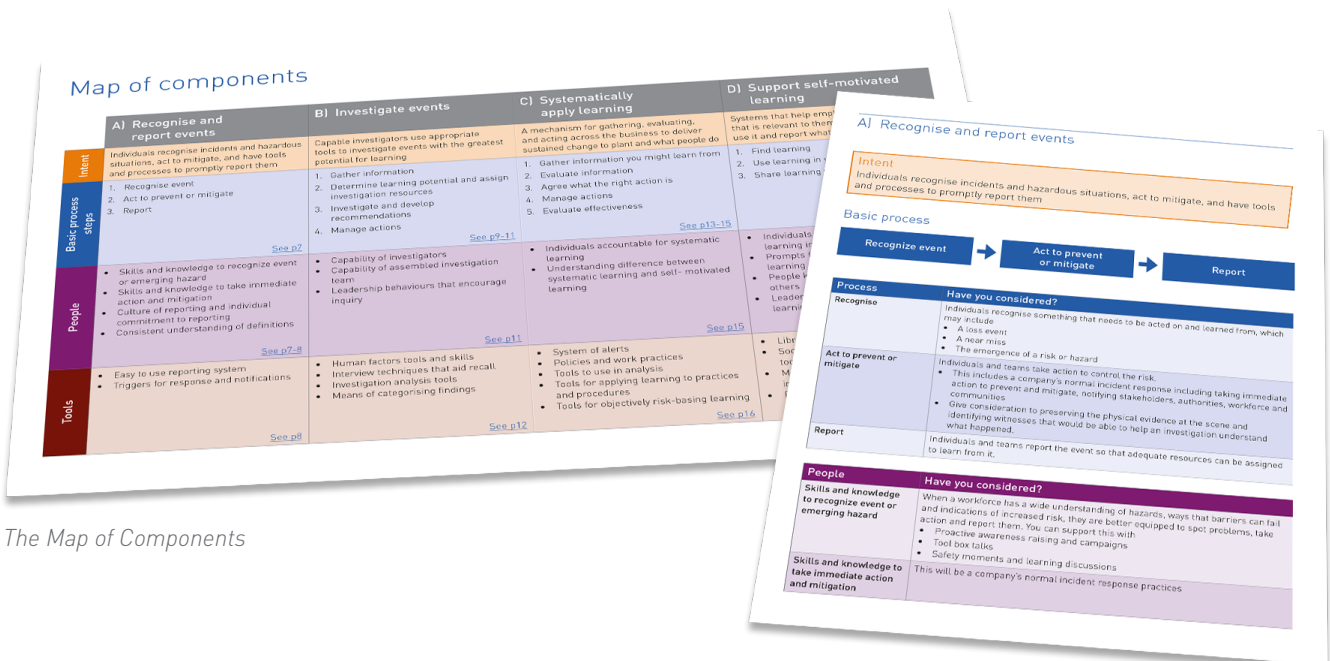
The map of components shows the workgroup’s view of the constituent parts that go to make up organizational learning. There are four main components:

- A. **Recognize and report:** Individuals recognize incidents and hazardous situations, act to mitigate, and have tools and processes to promptly report them
- B. **Investigate:** Capable investigators use appropriate tools to investigate events with the greatest potential for learning
- C. **Apply learning:** A systematic approach is used to gather, evaluate, and act across the business to deliver sustained change to plant and what people do
- D. **Support self-motivated learning:** Systems that help employees find learning that is relevant to them, use it, and to share what they have learned

For each of these, the map describes:

- The **intent** of this component
- The **basic process steps** involved
- Some **people** aspects, including skills, knowledge and training for that component
- Some **tools** that are useful in delivering that component

Each box on the map lists a page number reference, which links to more detailed information in part 3, “Details of Component”



The Map of Components

Example “Details of component” page

# Map of components

	A) Recognize and report events	B) Investigate events	C) Systematically apply learning	D) Support self-motivated learning
Intent	Individuals recognize incidents and hazardous situations, act to mitigate, and have tools and processes to promptly report them	Capable investigators use appropriate tools to investigate events with the greatest potential for learning	A mechanism for gathering, evaluating, and acting across the business to deliver sustained change to plant and what people do	Systems that help employees find learning that is relevant to them, and help them to use it and report what they have learned
Basic process steps	<ol style="list-style-type: none"> <li>1. Recognize event</li> <li>2. Act to prevent or mitigate</li> <li>3. Report</li> </ol> <p style="text-align: right;"><a href="#">See p7</a></p>	<ol style="list-style-type: none"> <li>1. Gather information</li> <li>2. Determine learning potential and assign investigation resources</li> <li>3. Investigate and develop recommendations</li> <li>4. Manage actions</li> </ol> <p style="text-align: right;"><a href="#">See p9-11</a></p>	<ol style="list-style-type: none"> <li>1. Gather information you might learn from</li> <li>2. Evaluate information</li> <li>3. Agree what the right action is</li> <li>4. Manage actions</li> <li>5. Evaluate effectiveness</li> </ol> <p style="text-align: right;"><a href="#">See p13-15</a></p>	<ol style="list-style-type: none"> <li>1. Find learning</li> <li>2. Use learning in your role</li> <li>3. Share learning with others</li> </ol> <p style="text-align: right;"><a href="#">See p17</a></p>
People	<ul style="list-style-type: none"> <li>• Skills and knowledge to recognize event or emerging hazard</li> <li>• Skills and knowledge to take immediate action and mitigation</li> <li>• Culture of reporting and individual commitment to reporting</li> <li>• Consistent understanding of definitions</li> </ul> <p style="text-align: right;"><a href="#">See p7-8</a></p>	<ul style="list-style-type: none"> <li>• Capability of investigators</li> <li>• Capability of assembled investigation team</li> <li>• Leadership behaviours that encourage inquiry</li> </ul> <p style="text-align: right;"><a href="#">See p11</a></p>	<ul style="list-style-type: none"> <li>• Individuals accountable for systematic learning</li> <li>• Understanding difference between systematic learning and self-motivated learning</li> </ul> <p style="text-align: right;"><a href="#">See p15</a></p>	<ul style="list-style-type: none"> <li>• Individuals know how to access and use learning information</li> <li>• Prompts for people to search for learning</li> <li>• People know how to share learning with others</li> <li>• Leaders knowledge and ability to hold learning conversations</li> </ul> <p style="text-align: right;"><a href="#">See p17-18</a></p>
Tools	<ul style="list-style-type: none"> <li>• Easy to use reporting system</li> <li>• Triggers for response and notifications</li> </ul> <p style="text-align: right;"><a href="#">See p8</a></p>	<ul style="list-style-type: none"> <li>• Human factors tools and skills</li> <li>• Interview techniques that aid recall</li> <li>• Investigation analysis tools</li> <li>• Means of categorising findings</li> </ul> <p style="text-align: right;"><a href="#">See p12</a></p>	<ul style="list-style-type: none"> <li>• System of alerts</li> <li>• Policies and work practices</li> <li>• Tools to use in analysis</li> <li>• Tools for applying learning to practices and procedures</li> <li>• Tools for objectively risk-basing learning</li> </ul> <p style="text-align: right;"><a href="#">See p16</a></p>	<ul style="list-style-type: none"> <li>• Library for learnings</li> <li>• Social networking / information sharing tools</li> <li>• Methods of having discussions / using info to help people learn</li> <li>• Performance management</li> </ul> <p style="text-align: right;"><a href="#">See p18-19</a></p>

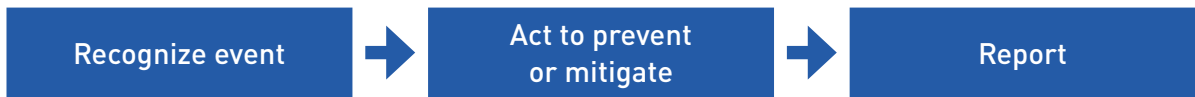
# Part 3

## Detail of components

### A) Recognize and report events

**Intent**  
 Individuals recognize incidents and hazardous situations, act to mitigate, and have tools and processes to promptly report them

#### Basic process



Process	Have you considered?
<b>Recognize</b>	Individuals recognize something that needs to be acted on and learned from, which may include <ul style="list-style-type: none"> <li>• A loss event</li> <li>• A near miss</li> <li>• The emergence of a risk or hazard</li> </ul>
<b>Act to prevent or mitigate</b>	Individuals and teams take action to control the risk. <ul style="list-style-type: none"> <li>• This includes a company's normal incident response including taking immediate action to prevent and mitigate, notifying stakeholders, authorities, workforce and communities</li> <li>• Give consideration to preserving the physical evidence at the scene and identifying witnesses that would be able to help an investigation understand what happened.</li> </ul>
<b>Report</b>	Individuals and teams report the event so that adequate resources can be assigned to learn from it.

People	Have you considered?
<b>Skills and knowledge to recognize event or emerging hazard</b>	When a workforce has a wide understanding of hazards, ways that barriers can fail and indications of increased risk, they are better equipped to spot problems, take action and report them. You can support this with <ul style="list-style-type: none"> <li>• Proactive awareness raising and campaigns</li> <li>• Tool box talks</li> <li>• Safety moments and learning discussions</li> </ul>
<b>Skills and knowledge to take immediate action and mitigation</b>	This will be a company's normal incident response practices

People	Have you considered?
<p><b>Culture of reporting and individual commitment to reporting</b></p>	<p>Management response to events can be important including:</p> <ul style="list-style-type: none"> <li>• Positive reinforcement, including thanking for report,</li> <li>• Taking visible action as a result of reports, and feedback action resulting from the report</li> <li>• Stated intention to seeking to understand causes and behaviours, not to apportion blame.</li> </ul> <p>Encourage all workforce to be individually committed to recognizing and safety, by reinforcing messages of:</p> <ul style="list-style-type: none"> <li>• Not walking by</li> <li>• Recognizing importance of reporting to prevent future events</li> <li>• Accountability to report</li> </ul> <p>Reinforce clear messaging to report all events</p> <ul style="list-style-type: none"> <li>• Set clear expectations to report all events.</li> <li>• Get confidence that events are being reported</li> <li>• Coaching by leaders / managers to improve reporting</li> </ul>
<p><b>Consistent understanding of the definitions</b></p>	<p>Reinforce the importance of reporting regardless of whether you know what type of report it would be, as well as need for any intervention at the time</p> <p>Go beyond the reporting of incidents alone. Encourage reporting of:</p> <ul style="list-style-type: none"> <li>• Incidents</li> <li>• Near misses</li> <li>• Emerging risk</li> <li>• Unsafe conditions and actions</li> <li>• "Near-errors" - mistakes that almost happened</li> <li>• Excursions or near-excursions outside safe operating limits of your plant</li> </ul> <p>Check-in on understanding of definitions for reporting these. For example:</p> <ul style="list-style-type: none"> <li>• Incidents "Something happened and there was a consequence"</li> <li>• Near misses "Something happened but there were no consequences" / "Something was about to happen"</li> <li>• Emerging risks "We recognized the possibility that something could happen in the future, in the right circumstances"</li> <li>• Reporting criteria for behavioural / safety observation</li> </ul>

Tools	Have you considered?
<p><b>Easy to use reporting system</b></p>	<p>A reporting system that makes it easy for people to report</p> <ul style="list-style-type: none"> <li>• Accessible and intuitive</li> <li>• Asks first reporters only for basic information</li> <li>• Doesn't encourage the first reporter to speculate or guess (e.g. potential / quantity of gas released etc.)</li> </ul>
<p><b>Triggers for response and notifications</b></p>	<p>This is the normal company emergency response, crisis management and business continuity plans, including notifying leaders and stakeholders</p>



## B) Investigate events

### Intent

Capable investigators use appropriate tools to investigate events with the greatest potential for learning

### Basic process



Process	Have you considered?
<b>Gather information</b>	<p>Gather sufficient information to be allow you to:</p> <ul style="list-style-type: none"> <li>• Make initial notification to stakeholders</li> <li>• Judge the learning value of event, and</li> <li>• Assign appropriate investigation resources.</li> </ul>
<b>Determine learning potential and assign investigation resources</b>	<p>Judge which events have the most valuable learning, setting Terms of Reference and assigning investigation resources. Criteria for selecting events with higher learning value may include:</p> <ul style="list-style-type: none"> <li>• Those events which would yield most information about significant and major accident risks</li> <li>• Low-probability / high consequence events (e.g. major accident hazards)</li> <li>• Events which could expose systematic factors as well as direct causes</li> <li>• Events which are repetitive, either a type of event or location</li> <li>• Events governed by regulatory requirements or where there is stakeholder interest</li> <li>• Consultation with appropriate expertise e.g. Process engineer for leak calculations</li> <li>• A sample of "other" incidents, in case you "don't know what you don't know"</li> <li>• A deep dive into themes or clusters of incidents</li> </ul> <p>When asking people to make a judgement remember what people are good and bad at doing.</p> <ul style="list-style-type: none"> <li>• People are generally better at judging the consequences of an event, but probability is difficult for people to judge</li> <li>• Purely basing on severity may not reveal the factors in less severe incidents that eventually lead to serious events</li> </ul>

Process	Have you considered?
<p><b>Determine learning potential and assign investigation resources</b> <i>(continued)</i></p>	<p>You may also have objective criteria, including:</p> <ul style="list-style-type: none"> <li>• Lists of specific incident types which will receive detailed investigation (e.g. process safety events)</li> <li>• Calculators (e.g. dropped object calculators for judging potential of an object)</li> <li>• Criteria that can be objectively calculated and avoid guesswork or speculation (e.g. criteria for loss of containment based on quantity regardless of likelihood of ignition)</li> <li>• Focus on critical barriers failed</li> </ul> <p>Take care that tools don't drive the organization to focus disproportionately on some types of events at the cost of others. Your selection criteria will drive the types of event that you focus on. A dropped object calculator may improve reporting of this type of event significantly, and the resulting increase in dropped object reports may lead you to believe that this category of event is the most important priority for the business. However, this may take your focus away from less commonly reported but more significant process safety issues.</p>
<p><b>Investigate and develop recommendations</b></p>	<p>Activity in investigation includes</p> <ul style="list-style-type: none"> <li>• Preserving the scene and evidence</li> <li>• Selecting and mobilising your investigation team</li> <li>• Gathering evidence</li> <li>• Interviewing</li> <li>• Analysis of evidence and gathering further evidence</li> <li>• Making recommendations</li> <li>• Reporting</li> </ul> <p>Analysis by investigation team should aim to be</p> <ul style="list-style-type: none"> <li>• Deep - searching for causal and contributing factors based in management systems, leadership and culture as well as physical and human causes</li> <li>• Broad - searching for factors that contributed to the event, and missed opportunities to prevent the event, as well as those things that directly caused it.</li> <li>• Spend sufficient time to understand the causes of the incident</li> </ul> <p>When making recommendations</p> <ul style="list-style-type: none"> <li>• Address root causes and contributing factors</li> <li>• Make resulting actions SMART (Specific Measurable, Achievable, Realistic, Timely)</li> <li>• Consider both Site level and Company level actions to prevent reoccurrence</li> </ul> <p>An investigation team may need to recommend actions based on the known facts before the investigation analysis is complete. This may include:</p> <ul style="list-style-type: none"> <li>• Drawing attention to an urgent risk</li> <li>• Requesting sites to survey for hazards recognized by the team</li> <li>• Requesting immediate corrective action to control a risk</li> </ul>

Process	Have you considered?
<b>Manage actions</b>	<p>This includes</p> <ul style="list-style-type: none"> <li>• Agreement of actions by recipients</li> <li>• Management of actions to completion</li> <li>• Verification of action completion with information going back to a senior person owning action</li> <li>• Reviewing whether actions have achieved the desired learning (which may require you to give time for actions to embed)</li> </ul> <p>Consider time period and prioritisation of actions in response to recommendations</p> <ul style="list-style-type: none"> <li>• Immediate before recommencing operations</li> <li>• Short term actions that will guard against repetition while longer term actions take affect</li> <li>• Long term actions that are sustainable</li> </ul>

People	Have you considered?
<b>Capability of investigators</b>	<p>Building investigator capability includes:</p> <ul style="list-style-type: none"> <li>• Teaching "how to investigate" investigations of a certain level of complexity / learning potential</li> <li>• Assessment of competence and coaching to close gaps</li> <li>• Regular practice of skills</li> <li>• Ongoing development through training and regular investigation community events</li> </ul> <p>Investigators may benefit from having these characteristics</p> <ul style="list-style-type: none"> <li>• Capable of developing the skills</li> <li>• Enquiring mind</li> <li>• Logical in using evidence to support findings</li> <li>• Resourceful</li> <li>• Able to explain and communicate</li> <li>• Able to lead a team</li> <li>• Independence, for more significant events</li> </ul>
<b>Capability of assembled investigation team</b>	<p>Build the team according to skills you need, including</p> <ul style="list-style-type: none"> <li>• Investigation skills</li> <li>• Human Factor capability</li> <li>• Technical knowledge/subject matter experts relevant to area</li> <li>• Workforce representation where appropriate</li> <li>• Leadership where interface with the community, external companies or widespread company action may be required.</li> </ul>
<b>Behaviours of leaders</b>	<p>Certain leadership behaviours can promote good investigation:</p> <ul style="list-style-type: none"> <li>• Asking for deep-seated systemic causes to be explored</li> <li>• Asking for direct causes, missed opportunities and factors that make the incident more likely to be explored</li> <li>• Allocating sufficient time and resources to investigate sufficiently</li> <li>• Focussing on understanding and improvement, not blame</li> </ul>

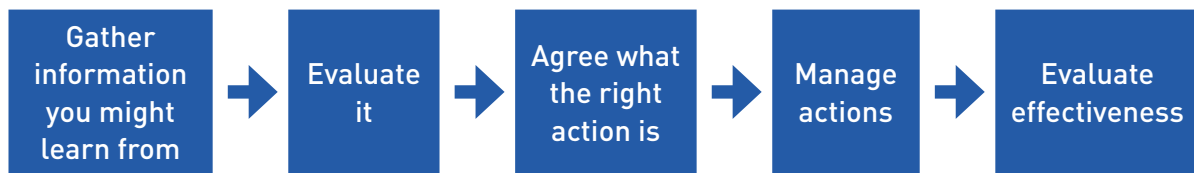
Tools	Have you considered?
<b>Human factors tools and skills</b>	<p>Human factor tools and skills help investigators to understand</p> <ul style="list-style-type: none"> <li>• Factors that motivate intentional behaviours (E.g. Antecedent Behaviour Consequence based tools)</li> <li>• Factors that cause or make errors more likely (E.g. Human Error Analysis, Error Provoking conditions, Fatigue calculator)</li> <li>• How to design recommendations that can encourage the right behaviours in the future</li> </ul>
<b>Interview techniques that aid recall</b>	<p>Structured approaches to interviewing that</p> <ul style="list-style-type: none"> <li>• Help interviewees to recall the situation leading up to event, and the event itself, as accurately as possible.</li> <li>• Allow investigators to access all the evidence that an interviewee can offer, rather than focussing in on any preconceived causes</li> </ul>
<b>Investigation analysis tools</b>	<p>Analysis tools help to analyse evidence and identify root causes (direct cause-effect relationship) and contributing factors (that make the incident more likely to happen) at multiple levels including:</p> <ul style="list-style-type: none"> <li>• Physical causes - failure of equipment, materials etc</li> <li>• Human - action and inaction of people, including leaders</li> <li>• Management System - the practices, procedures and mechanisms used in running a company</li> <li>• Organizational - including how a company organizes, makes accountable and directs activity</li> <li>• Cultural - the collected set of behaviours of an organization, which itself may be caused by other factors.</li> </ul> <p>Use tools and investigators with level of capability that suits the potential for learning</p> <ul style="list-style-type: none"> <li>• For Higher potential learning may be investigated using more challenging but effective tools in the hands of very experienced investigators</li> <li>• Lower potential-for-learning events may be investigated using simpler / fit for purpose tools in the hands of less experienced investigators</li> <li>• Ideally, experience in the simpler tools should allow investigators to develop skills that will help them to use more challenging tools in advanced investigations</li> <li>• The most experienced investigators should be assigned to the most valuable learning</li> </ul> <p>Analysis tools may identify failing barriers (planned measures that prevent occurrence or escalation)</p>
<b>Means of categorising findings</b>	<p>This allows an organization to look across multiple incidents, recognize patterns and make systemic changes. Categories may include</p> <ul style="list-style-type: none"> <li>• Event type</li> <li>• Affected Barriers</li> <li>• Human Factors</li> <li>• Management System categories</li> <li>• Equipment type</li> <li>• Task type</li> <li>• Discipline</li> </ul>

## C) Systematically apply learning

### Intent

A mechanism for gathering, evaluating, and acting across the business to deliver sustained change to plant and what people do

### Basic process



Process	Have you considered?
<b>Gather information you might learn from</b>	<p>Sources may include</p> <ul style="list-style-type: none"> <li>• Internal and external events</li> <li>• Data analysis</li> <li>• Assurance and Audits</li> <li>• Collections of different or similar events</li> <li>• Regulator alerts and reports</li> <li>• Benchmarking data</li> </ul>
<b>Evaluate it</b>	<p>Be clear on the specific “learning point” that you think this information gives you, e.g.</p> <ul style="list-style-type: none"> <li>• An unforeseen event mechanism</li> <li>• The Impact / likelihood greater than anticipated</li> <li>• Weakness in management system or barrier</li> <li>• Similarity between incidents, which may inform systemic factors</li> </ul> <p>If you struggle to identify a learning point:</p> <ul style="list-style-type: none"> <li>• You may need more information for the learning point to become clear. You may get news about an external incident, but it will be unclear how it effects your operations until the investigation is complete.</li> <li>• It may be that some information doesn’t reveal any of the above, but it would make a good case study to help educate people in a hazard.</li> </ul> <p>Consider which parts of your business have risks or barriers related to the learning, and who in those businesses may benefit from it.</p> <p>It may be useful to have some criteria to select learning by</p> <ul style="list-style-type: none"> <li>• Relevance (Similar risks at site / Same errors possible / Same equipment, materials or tasks)</li> <li>• Risk (Risk criteria / Significance of impact / barriers of particular significance)</li> </ul>

Process	Have you considered?
<p><b>Evaluate it</b> <i>(continued)</i></p>	<ul style="list-style-type: none"> <li>• What it tells you about controls (Adequacy to control level of risk / effectiveness)</li> <li>• Balancing process and personal safety focus</li> <li>• Potential benefit of the learning (Multiple businesses at risk / Systematic issue revealed / Industry issue)</li> <li>• Tells you something about a priority area (E.g. loss of containment / process safety)</li> <li>• Good practice that comes from successful management of risks</li> </ul> <p>Have people you can consult on which learning is relevant and what the learning point is. You may have agreed triggers for routing to different advisors. Sources may include:</p> <ul style="list-style-type: none"> <li>• Individuals accountable for learning</li> <li>• People in the field who know the job / unit</li> <li>• Subject Matter Experts</li> <li>• Committees (HSSE / Tech / Ops), learning forums or multidiscipline groups</li> <li>• Industry bodies, regulators and stakeholders</li> </ul>
<p><b>Agree what the right action is</b></p>	<p>Agree the right things to do, and that they are the priority actions to manage risk. This may include:</p> <ul style="list-style-type: none"> <li>• Short term actions including “heads-ups”, awareness communication and actions that get operating sites to assess their level of risk and adopt short term mitigations</li> <li>• Longer term actions that systematically eliminate or manage the risk</li> </ul> <p>Get recommendations on what the good practice, actions, scope and limitations should be, from those that understand the subject</p> <ul style="list-style-type: none"> <li>• Subject matter experts and Workforce</li> <li>• Contractors</li> <li>• Suppliers, Designers and Manufacturers</li> <li>• Regulators</li> </ul> <p>Use right combination of actions to embed the learning sustainably</p> <ul style="list-style-type: none"> <li>• Take action to manage risk in operating activities (assess risk / make changes to plant or working practices)</li> <li>• Embed in the management system (policies / procedures / work practices / design standards / assurance protocols / risk criteria)</li> <li>• Educate (Campaign / Making material available / Training &amp; assessment / Competence programmes / On-boarding / Leadership development)</li> </ul> <p>Consider actions that you can use to prove that your learning has been effectively embedded.</p> <ul style="list-style-type: none"> <li>• Specific success criteria - what would you expect to be different?</li> <li>• Performance metrics and leading indicators</li> <li>• Checking understanding and retention of education</li> <li>• Observing behavioural change</li> </ul> <p>Assign action to the appropriate people</p> <ul style="list-style-type: none"> <li>• Specifically identify those operations that have the risk</li> <li>• Target those people who have the authority to deliver the action</li> </ul> <p>Get authority to take action from those managing the risk in operations</p> <ul style="list-style-type: none"> <li>• Prioritise alongside other risk controlling activity</li> <li>• Allocate resources to the activity</li> <li>• Instruct their organization to act</li> </ul>

Process	Have you considered?
<b>Manage actions</b>	<p>These are the normal action management processes that most organizations operate</p> <ul style="list-style-type: none"> <li>• Assign action suitable deadlines / right people / SMART actions)</li> <li>• Assign adequate resources</li> <li>• Monitor progress</li> <li>• Manage deferral or delay</li> <li>• Verify actions have been completed as intended</li> </ul>
<b>Evaluate effectiveness</b>	<p>This closes the learning loop, by helping you to decide whether the actions you have taken have embedded the learning, managed the risk and whether it will be sustained in the future.</p> <ul style="list-style-type: none"> <li>• When designing actions include actions which will provide evidence for reviewing effectiveness</li> <li>• Make a judgement on whether the evidence suggests immediate risk is reduced and is sustainable</li> <li>• Add additional action if the risk is not reduced or reductions aren't sustainable</li> <li>• Watch for any unintended additional risks created by the actions</li> </ul>

People	Have you considered?
<b>Individuals accountable for systematic learning</b>	<p>Managers understand their accountabilities in</p> <ul style="list-style-type: none"> <li>• Deciding how an event changes their view of the level of risk and quality of barriers / controls</li> <li>• Taking action to make changes in plant and management systems that embed learning sustainably</li> <li>• Providing information to their workforce</li> <li>• Provide information to their organization that will help the organization identify risks and appropriate response to manage the risk</li> </ul> <p>Networks have an important role</p> <ul style="list-style-type: none"> <li>• In identifying potential learning</li> <li>• Improving knowledge of hazards amongst a community</li> <li>• Using a community to take action to embed a learning</li> </ul> <p>Some networks are specifically focussed on learning, including</p> <ul style="list-style-type: none"> <li>• Local learning committees or forums tasked with looking at events and data, identifying potential learning and agreeing action to embed</li> <li>• Discipline Networks</li> <li>• Knowledge management people</li> <li>• Analyst networks</li> </ul>
<b>Understanding difference between systematic learning and self-motivated learning</b>	<p>It is helpful for the organization to understand the difference between these two</p> <ul style="list-style-type: none"> <li>• Systematic learning is co-ordinated by the company, and includes analysing data, looking across events, drawing on external information and then taking systematic action to embed change in plant, management systems and behaviours</li> <li>• Self-motivated learning is about individuals drawing on available learning and using it in their role or task. The company role here is to make learning information available to people (see <a href="#">section D</a> for detailed discussion)</li> </ul>

Tools	Have you considered?
<b>System of alerts</b>	<p>Types of alert vary from “heads-up” notification to specific instructions for action on operating sites. They may include:</p> <ul style="list-style-type: none"> <li>• Early notification that an incident has happened, with minimal details available at the time</li> <li>• Information on a hazard, that can be used to raise awareness / educate and encourage front-line personnel to take short-term action or change behaviour</li> <li>• Information that an operating site can use to judge the level of risk presented by a hazard, and to decide on appropriate action</li> <li>• Instructions to operating sites to determine level of risk and take action to manage risk</li> </ul> <p>Any of these may be issued as soon as learning from an event becomes clear, including,</p> <ul style="list-style-type: none"> <li>• During an investigation as facts emerge</li> <li>• After an investigation when analysis shows underlying causes</li> <li>• When investigations and other data are reviewed for patterns or themes</li> </ul>
<b>Policies and work practices</b>	<p>Management system documents for learning from events describing</p> <ul style="list-style-type: none"> <li>• Accountabilities</li> <li>• Processes</li> <li>• Tools</li> </ul>
<b>Tools to use in analysis</b>	<p>Qualitative techniques including</p> <ul style="list-style-type: none"> <li>• Developing insights</li> <li>• Thematic analysis</li> <li>• Group reviews</li> <li>• Subject matter expert reviews</li> </ul> <p>Quantitative techniques</p> <ul style="list-style-type: none"> <li>• Data mining</li> <li>• Charting and statistics</li> <li>• Metrics</li> </ul> <p>Try and triangulate information, by drawing on a variety of information and data to identify and support weaker signals. Consider:</p> <ul style="list-style-type: none"> <li>• Incidents</li> <li>• Audits</li> <li>• Assurance</li> <li>• Observations</li> </ul>
<b>Tools for applying learning to practices and procedures</b>	<p>Systems for updating procedures and practices</p> <ul style="list-style-type: none"> <li>• Ways of recording comments and potential updates</li> <li>• People accountable for reviewing and accepting suggestions</li> <li>• Process for publishing and informing users of new updates</li> <li>• Way of retrofitting updated practices to existing operations</li> </ul>
<b>Tools for objectively risk- basing learning</b>	<ul style="list-style-type: none"> <li>• Taxonomy of risk events and barriers</li> <li>• Methods of mapping information on barrier weaknesses to barriers</li> <li>• Criteria that trigger learning for the most significant risk categories</li> </ul>

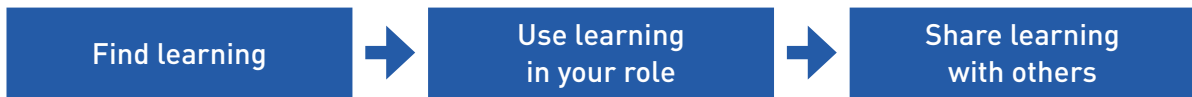


## D) Support self-motivated learning

### Intent

Systems that help employees find learning that is relevant to them, and help them to use it and report what they have learned

### Basic process



Process	Have you considered?
Find learning	This is about encouraging behaviours of searching for learning that is relevant to people's role, discipline or the task they are undertaking
Use learning in your role	This is about encouraging behaviours of applying the learning in people's activities
Share learning with others	This is about encouraging the behaviours to share learning that people have discovered in their activities

People	Have you considered?
Individuals know how to access and use learning information	<p>Don't rely solely on your system of alerts for encouraging self-motivated learning. Consider also:</p> <ul style="list-style-type: none"> <li>• Training</li> <li>• Workshops</li> <li>• Discussions</li> <li>• Libraries</li> <li>• Practices and procedures updates</li> </ul> <p>This can include pushing information</p> <ul style="list-style-type: none"> <li>• To right people</li> <li>• At right time</li> <li>• In right format</li> </ul> <p>When pushing information, be clear about what you expect people to do with it, e.g.:</p> <ul style="list-style-type: none"> <li>• "If you do #### you may be interested in knowing..."</li> <li>• "You should assess how this affects your role"</li> <li>• "You should lead a discussion with your team and assess..."</li> </ul>

People	Have you considered?
<p><b>What prompts people to search for a learning</b></p>	<p>Help people with examples of when they might draw on learning information as part of their normal role, for instance:</p> <ul style="list-style-type: none"> <li>• Preparing a safety moment or a safety meeting topic</li> <li>• Designing or modifying equipment</li> <li>• Planning a risk assessment or tool box talk</li> <li>• Investigating an incident and looking for similar issues</li> <li>• Carrying out an improvement project</li> <li>• Implementing or refreshing practices &amp; standards</li> <li>• As part of controlling work, projects, hazard review or HAZOP</li> <li>• As part of Management of change</li> </ul> <p>Where possible, embed triggers to look for and use learning in relevant systems (e.g. including a trigger to search for relevant learning in a Management of Change system)</p> <p>Consider making it an expectation or accountability of the job to find, and apply learning.</p>
<p><b>People know how to share their learning with others</b></p>	<p>Help people understand how they can share what they have learned.</p> <ul style="list-style-type: none"> <li>• Through a library or sharing system</li> <li>• Through internal networks or meetings</li> <li>• Individually / on the job / coaching / mentoring</li> <li>• Coffee shop / Anecdotal</li> <li>• Building into inductions, operational training or competence systems</li> </ul>
<p><b>Leaders know how to hold learning conversations</b></p>	<p>Give leaders the skills to have good quality conversations that help people to reflect on what an event or learning means to the team and how they work.</p>

Tools	Have you considered?
<p><b>Library for learnings</b></p>	<p>Online libraries can help people find relevant information. If relying on on-line libraries, make sure they are accessible by your workforce.</p> <ul style="list-style-type: none"> <li>• Information on hazards</li> <li>• Investigation reports</li> <li>• Guidance and advice</li> <li>• Educational material</li> <li>• Subject Matter Experts and people who have an interest in particular topics</li> </ul> <p>You can help people to find what they are looking for by allowing searches by</p> <ul style="list-style-type: none"> <li>• Incident type</li> <li>• Their task</li> <li>• Their role or discipline</li> <li>• Their problem</li> <li>• Specific issues such as types of human factor issue</li> </ul>
<p><b>Social networking / information sharing tools</b></p>	<p>In-house social networking tools can be used to:</p> <ul style="list-style-type: none"> <li>• Raise questions to other people who have a similar interest</li> <li>• Share safety moments and safety videos</li> </ul>

<b>Tools</b>	<b>Have you considered?</b>
<p><b>Methods of having discussions / using info to help people learn</b></p>	<p>Think about aspects that help people to learn</p> <ul style="list-style-type: none"> <li>• Be clear about what you want people to learn - what should they take away?</li> <li>• Focus on characteristics that tell people learning is relevant (hazard / task / discipline)</li> <li>• Focus on things which make this a common experience / issue for people (e.g. hazards / operational issue rather than location of the incident)</li> <li>• Consider what type of audience you have (adults / experienced)</li> <li>• Consider how different geographical cultures may respond to learning</li> </ul> <p>Some types of learning are more effective than others</p> <ul style="list-style-type: none"> <li>• Direct learning - where people experience something for themselves.</li> <li>• Reflective learning - where people think through how something applies to their own situation</li> </ul> <p>You can have a good quality reflective learning discussion with very little information. Lay out a simple scenario and ask questions to encourage discussion and reflection).</p> <ul style="list-style-type: none"> <li>• Lay out a simple scenario based on a hazard or event (“imagine you are cutting a process line”)</li> <li>• Ask about a team’s own standards or approach (“what would you check?”)</li> <li>• Reveal what happened on this occasion (“ in this case the line was live and there was a release”)</li> <li>• Get the team to reflect on whether their own approach protects them, &amp; what else they need to do. (“what can we do to protect ourselves against this”)</li> </ul>
<p><b>Performance management</b></p>	<p>This can include</p> <ul style="list-style-type: none"> <li>• Setting expectations for using and sharing learning</li> <li>• Reinforcing learning behaviours that you observe</li> <li>• Leading by example - find and use learning / ask for learning to be used</li> </ul>

# Glossary

For the purpose of this document the following definitions apply. For further definitions see IOGP 510 Operating Management System Framework.

<b>Barrier</b>	A risk control that seeks to prevent unintended events from occurring, or prevent escalation of events into incidents with harmful consequences.
<b>Causal factors / causes</b>	The combination of circumstances which are believed to have led to the outcome.
<b>Contributory factors</b>	The combination of circumstances that are believed to have made the outcome more likely to happen.
<b>Emerging risk</b>	Recognition of a possible risk that could happen in the future, in the right circumstances.
<b>Event</b>	An unintended or uncontrolled outcome of an operating activity that has, or could have, contributed to harmful consequences to people, property or the environment.
<b>Incident</b>	An event or chain of events that has resulted in harmful consequences such as injuries, illnesses, property damage or environmental impact.
<b>Learning</b>	The practice of drawing on the experience and foresight of ourselves or others, leading us to recognize the need and opportunity to reduce risk, by acting to change equipment, processes, team or individual behaviour.
<b>Learning Organization</b>	An organization that is able to detect opportunities and warning signals about its risks and risk controls and adapt accordingly.
<b>Near miss</b>	An event which could have resulted in as consequence but didn't on this occasion. An event which was about to happen but didn't.
<b>Operations</b>	A general term for any activities or assets where operating occur.
<b>Repeat incident</b>	An event which is recognized as having similar characteristics to previous events. Those characteristics may include similar incident mechanism, or similar causal or contributory factors.
<b>Risk</b>	The product of chance that a specific adverse event will occur and the severity of the consequences of that event.
<b>SMART</b>	An abbreviation for "Specific Measurable Achievable Realistic and Timely" which helps users to design quality recommendations and actions.
<b>Unsafe condition / act</b>	Physical conditions or actions of people that have potential to combine with other circumstances to lead to a safety incident.

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