Downer Mining Services

Underground & Exploration Drilling

DBS

OTRACO

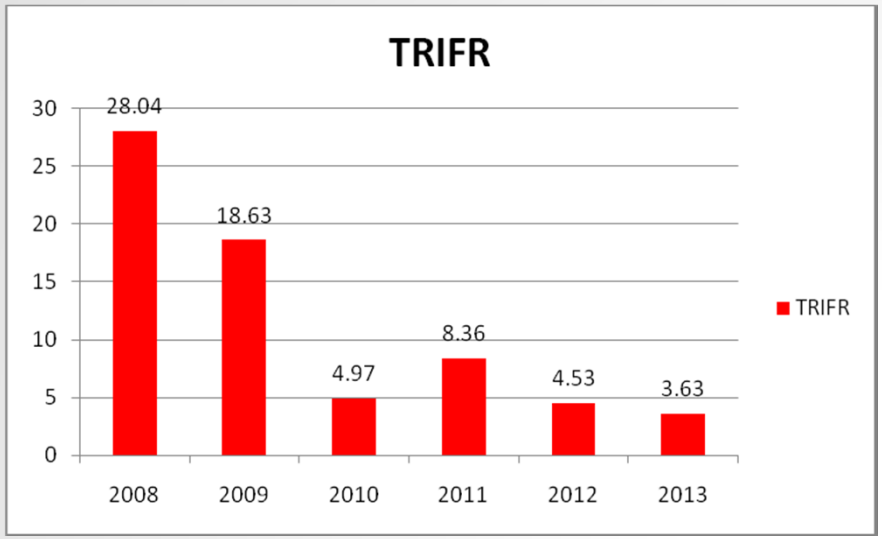
RIMTEC

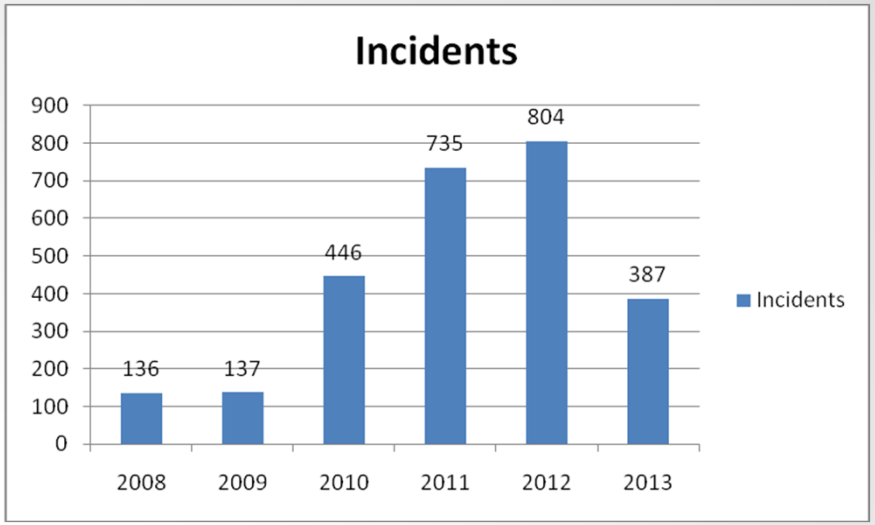
ReGen
A Downer Mining Enterprise

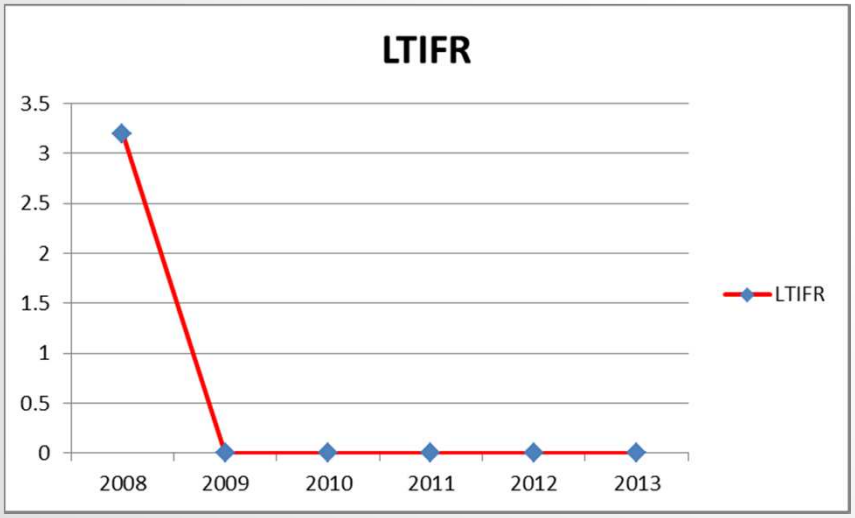
Focus Areas

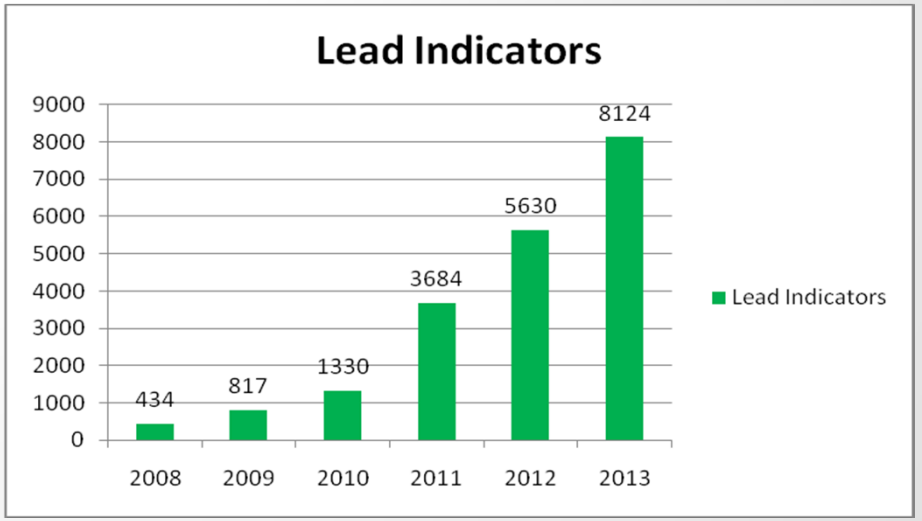
- Safety Management Systems
  - Is this practical?
  - Can we sustain this?
- Safety Leadership
  - Are we really leading?
  - Will they follow our lead?
- Critical Risk
  - Do we know what can kill us or seriously injure us?
  - Do we know how to prevent this?

Our Journey


TRIFR
30
25
20
15
10
5
0
28.04
18.63
4.97
8.36
4.53
3.63
2008
2009
2010
2011
2012
2013
TRIFR


Incidents
900
800
700
600
500
400
300
200
100
0
136
137
446
735
804
387
2008
2009
2010
2011
2012
2013
Incidents


LTIFR
3.5
3
2.5
2
1.5
1
0.5
0
2008
2009
2010
2011
2012
2013
LTIFR


Lead Indicators
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
434
817
1330
3684
5630
8124
2008
2009
2010
2011
2012
2013
Lead Indicators

When is enough to much

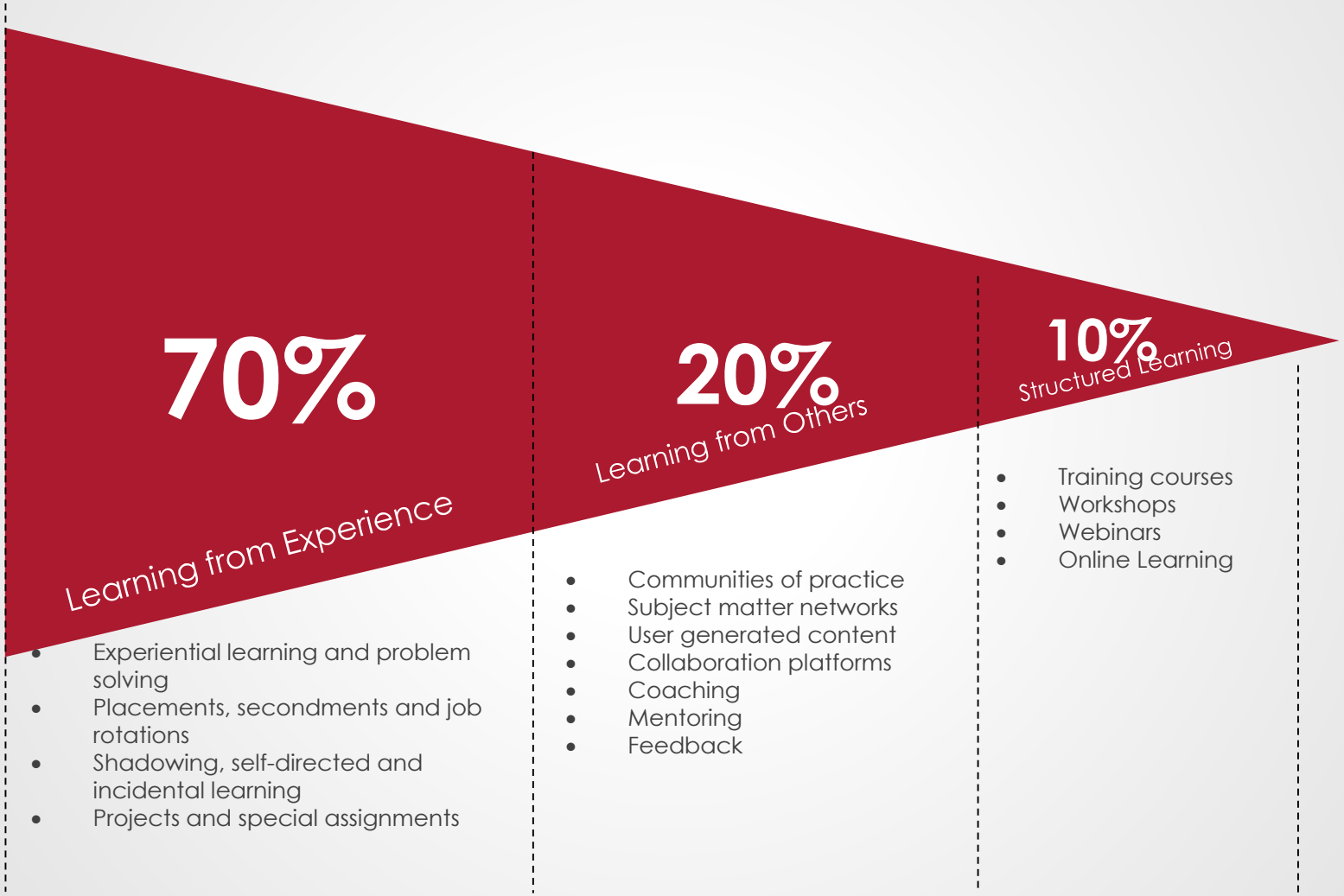
Ryan Bingham's

Empty Backpack Philosophy

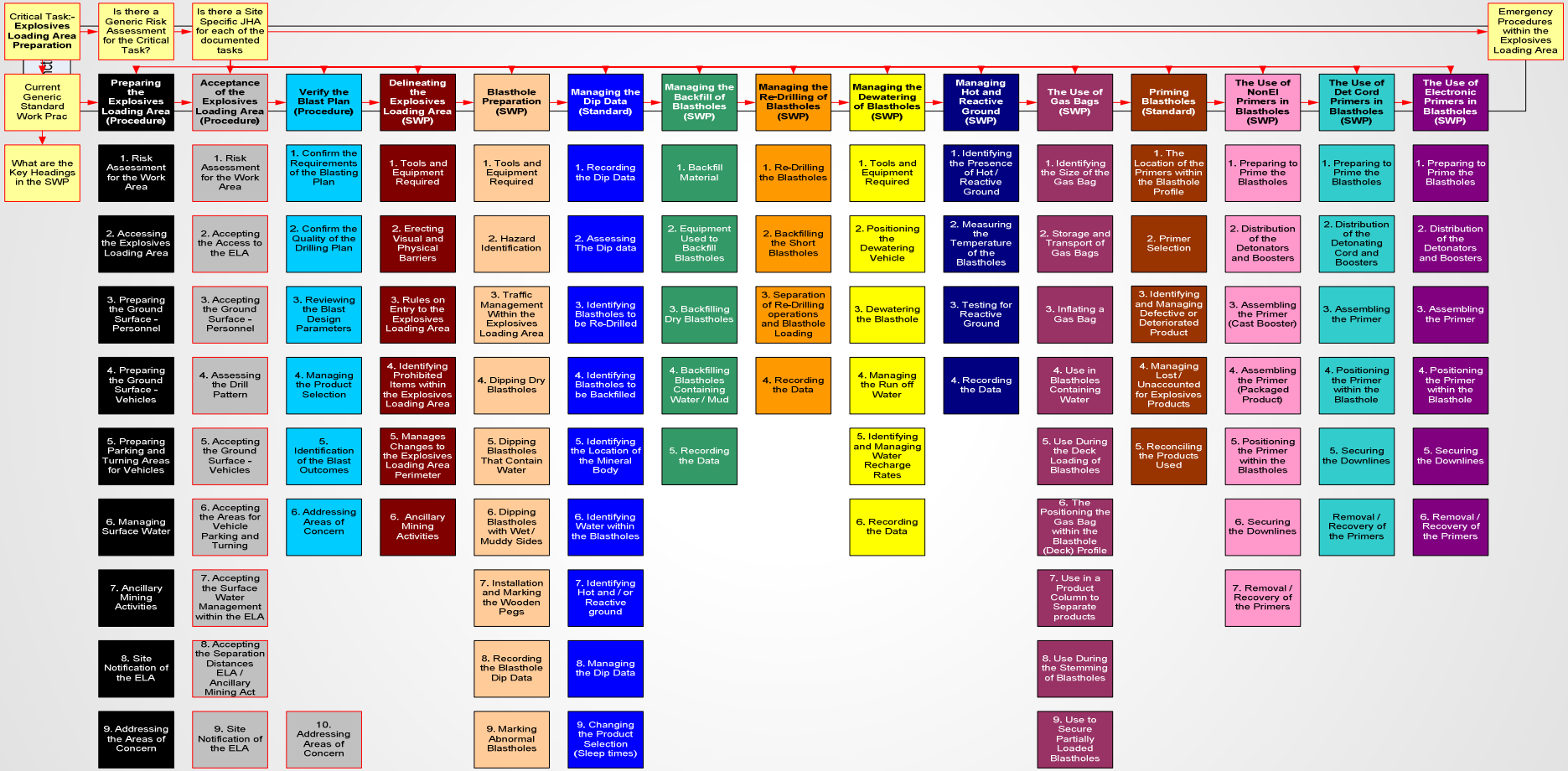
People are the common theme

- The review of our safety management system identified people were one of the primary contributing causal factors. The list below summarise the more frequent contributing factors .
    - Inadequate hazard identification or hazard controls
    - Inadequate supervision
    - Inadequate work procedures
    - Improper decision making
    - Unintentional violation
    - Inadequate training/competencies

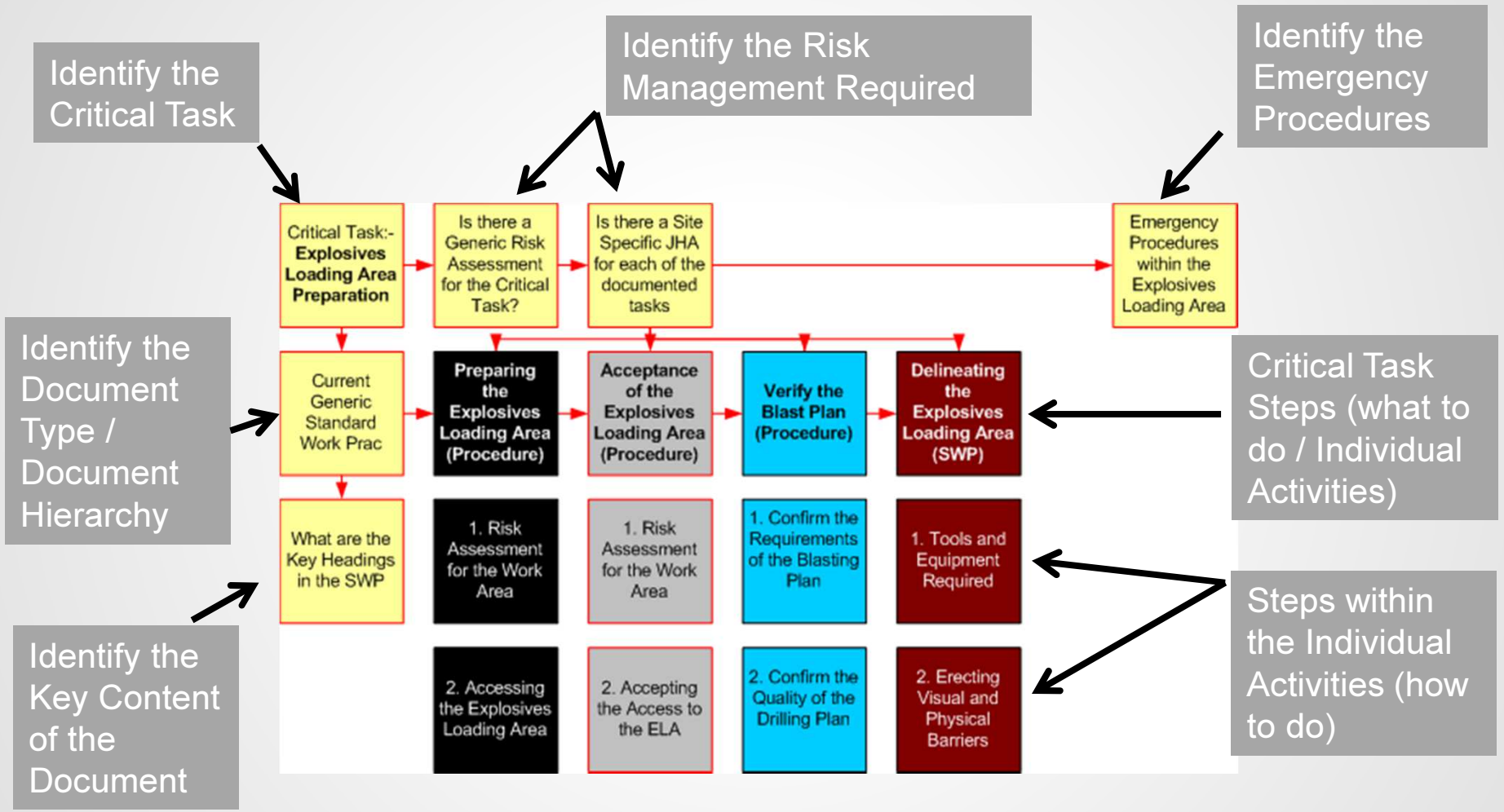
How we learn


70%
Learning from Experience
Experiential learning and problem solving
Placements, secondments and job rotations
Shadowing, self-directed and incidental learning
Projects and special assignments
20%
Learning from Others
Communities of practice
Subject matter networks
User generated content
Collaboration platforms
Coaching
Mentoring
Feedback
10%
Structured Learning
Training courses
Workshops
Webinars
Online Learning

Process Mapping



Key Aspects of Process Mapping



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Leadership

Before you're a leader, success is about growing yourself. When you're a leader, success is about growing others

Jack Welch

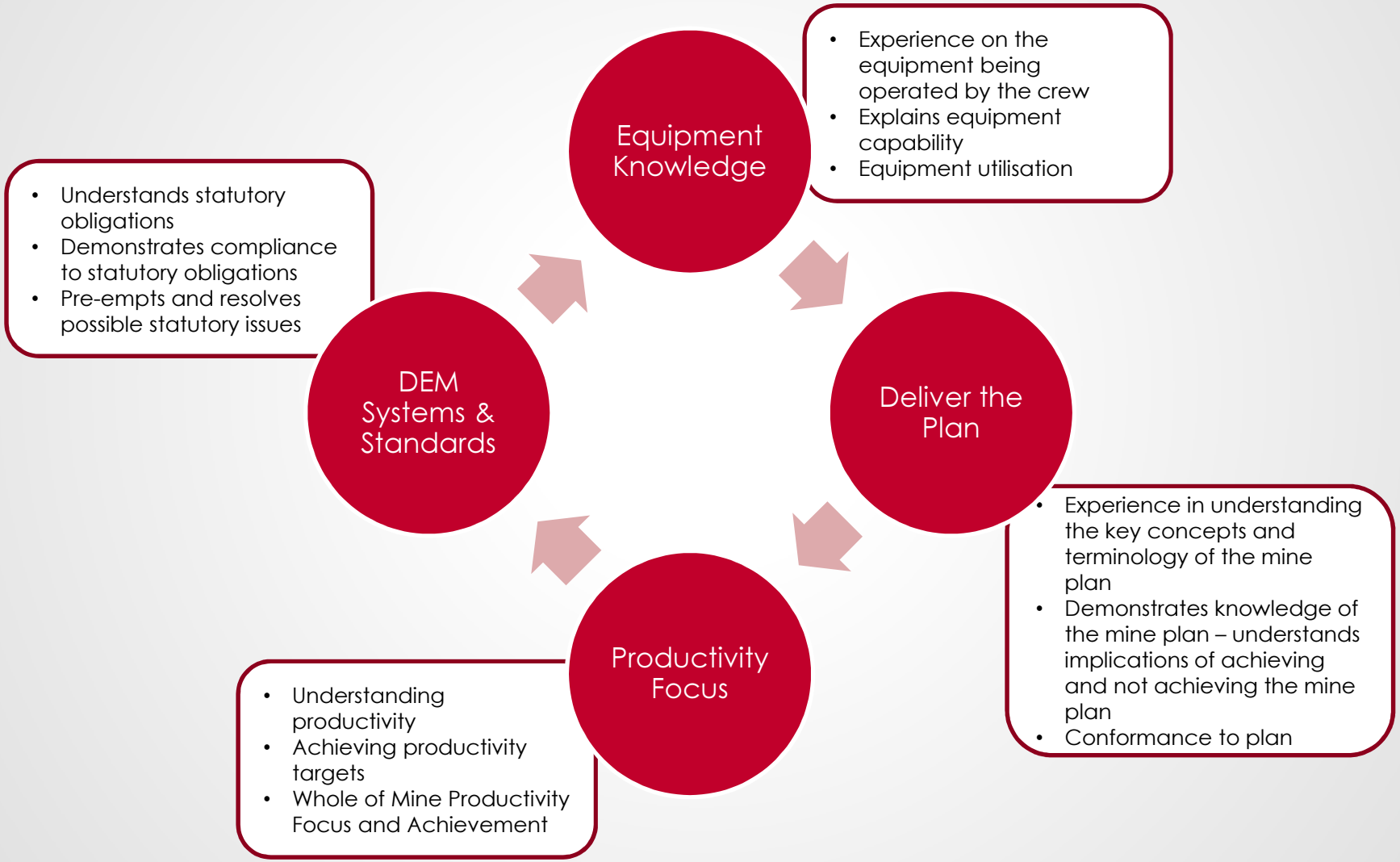
Leadership Engagement

How often should you talk to workers?

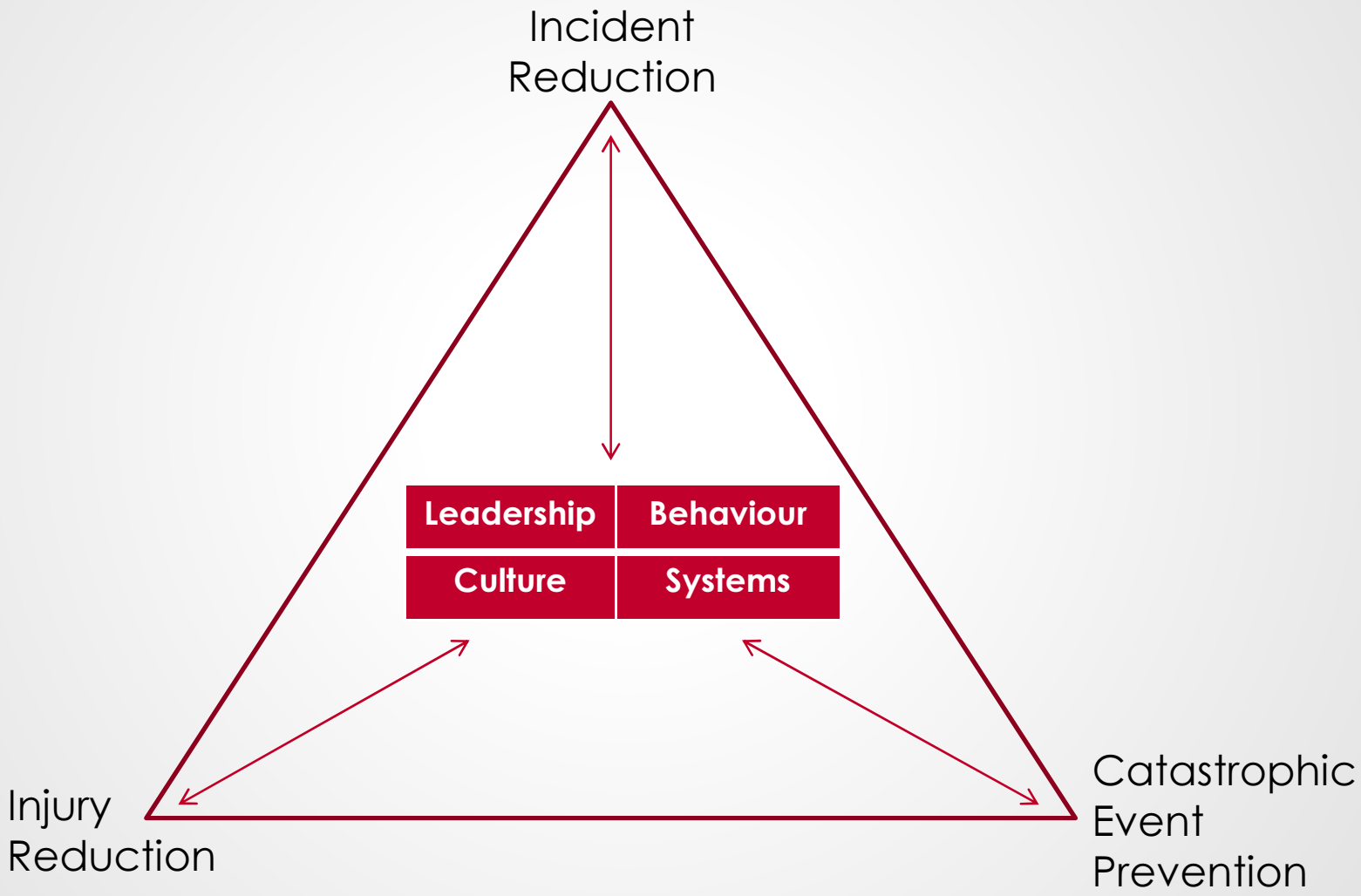
Senior executives	1 hour per week
Middle managers	1 hour per day
Front line supervisors	30% of time

From Prof. Andrew Hopkins

Leadership Capability Framework



Leading the Change



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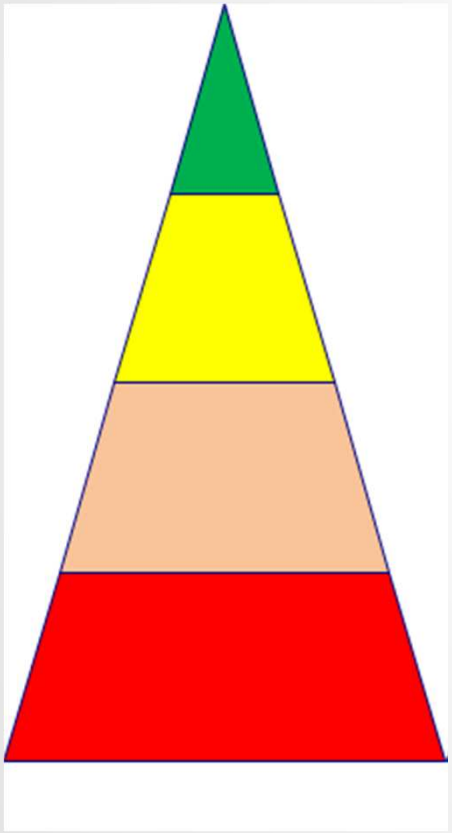
Exposure verse Control

Critical Risk Exposure



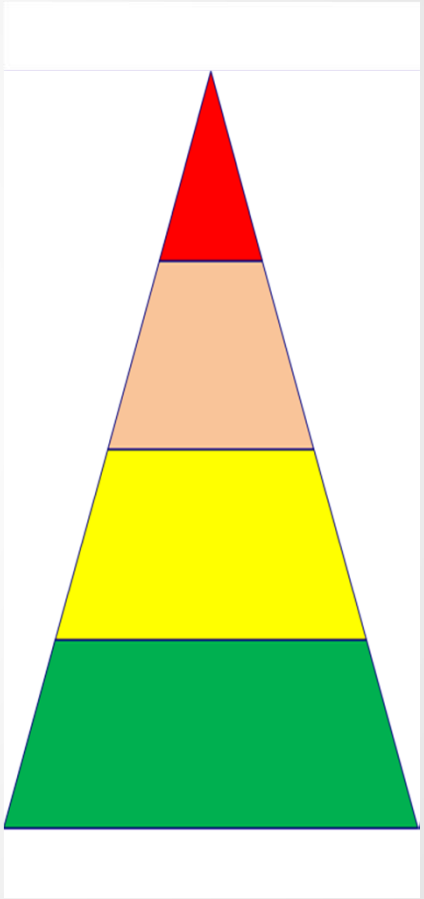
Senior Management

Operational Managers

Operational Supervisors

Workers

Decision Making Roles



DownerEDi Mining

HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

CRITICAL RISK 12

How We Expect to Operate

All hazardous chemicals and dangerous goods shall be approved by the project with their storage, handling, use and disposal undertaken consistent with the Manufacturer Safety Data Sheet & risk assessment requirements.

Critical Risk Factors

- Incompatible storage of hazardous chemicals/dangerous goods
- Unmarked hazardous chemicals/dangerous goods
- Handling and use requirements not followed in accordance with Safety Data Sheet/risk assessment
- Inappropriate disposal of hazardous chemicals/dangerous goods

Key Critical Risk Controls

1. Hazardous chemicals/dangerous goods on site are approved by the appointed Chemical Coordinator, labelled, and the Safety Data Sheet (SDS) readily available.
2. Personnel storing, handling, using or disposing of hazardous chemicals/ dangerous goods follow the relevant SDS/procedural requirements, including the selection and use of appropriate PPE.
3. Chemicals and gasses that can react violently with each other are separated.
4. Buildings or cabinets used for flammable material or dangerous goods storage are free from defects and have adequate ventilation.

Non-compliance with Critical Risk Controls may lead to disciplinary action which may include termination of employment.

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EXPLOSIVES MANAGEMENT

CRITICAL RISK 03

How We Expect to Operate

Explosives and explosive products are only handled by authorised personnel and are stored, used and managed securely to prevent unauthorised access and unintended detonation.

Critical Risk Factors

- Unauthorised handling, use or theft of explosives or explosive products
- Unauthorised access to explosive loading or explosion exclusion zones
- Unplanned firing of explosives
- Contact with, or incident involving explosive material

Key Critical Risk Controls

1. Explosives and explosive product are stored securely with facility keys secured from unauthorised access, and all stock are accounted for at all times.
2. Only authorised personnel handle or use explosives.
3. Explosive barricades placed in all areas where explosive are being loaded, preventing unauthorised entry into explosive loading areas.
4. Blast exclusion zones are effectively established and maintained (Cardinal Rule #5).
5. Explosives, blasting agents or detonators are transported in securely covered cases, bags or other containers that provide adequate safety, with clear signage that they are explosive, and they are lockable and securely fastened to the vehicle.
6. A pre-blast report is undertaken by the Shotfirer identifying compliance to the blast plan, and any required actions implemented necessary to avoid any unplanned events that may affect the blast.

Non-compliance with Critical Risk Controls may lead to disciplinary action which may include termination of employment.

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CRITICAL RISK 03
EXPLOSIVES MANAGEMENT

CRITICAL RISK TASK OBSERVATION

INX Ref:		Others involved:
Project:		
Location:		
Observer:		
Date:	/ /	

Critical risk conformance		
Section	Number of compliances	Number of non-compliances
1.		
2.		
3.		
4.		
5.		
6.		
TOTAL		

How we expect to operate

Explosives and explosive products are only handled by authorised personnel and are stored, used and managed securely to prevent unauthorised access and unintended detonation.

Critical risk factors

- Unauthorised handling, use or theft of explosives or explosive products
- Unauthorised access to explosive loading or explosion exclusion zones
- Unplanned firing of explosives
- Contact with, or incident involving explosive material

Checklist

Critical risk control		Compliant		Findings
1.	**Explosives and explosive product are stored securely, and are compliant with DEDIM and regulatory requirements.**	YES	NO	Total compliant this section: YES____ NO____
	Facility keys are secured from unauthorised access.	☐	☐	
	Safety Data Sheets are available for all Dangerous Goods.	☐	☐	
	Explosives/detonators are stored separately with their UN classification clearly labelled.	☐	☐	
	Explosive accessories are in their correct boxes & original packaging.	☐	☐	
	The air space between the top of stacked packages and the ceiling of the magazine is not less than 300 mm.	☐	☐	
	Out of date products are clearly identified and separated.	☐	☐	
	Vents are not Blocked and have timber spacers on vents.	☐	☐	

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CRITICAL RISK 03
EXPLOSIVES MANAGEMENT

CRITICAL RISK TASK OBSERVATION

Critical risk control		Compliant		Findings
	All stock is accounted for at all times using the magazine record books by an authorised Magazine Keeper.	☐	☐	
	Fencing, gates and signage are in good condition and the facility is secure when left unattended, with persons unable to walk into the facility undetected.	☐	☐	
2.	**Only authorised personnel handle or use explosives.**	YES	NO	Total compliant this section: YES____ NO____
	All persons handling, or using explosive material are can be identified as authorised by the project.	☐	☐	
3.	**Explosive barricades placed in all areas where explosive are being loaded, preventing unauthorised entry into explosive loading areas.**	YES	NO	Total compliant this section: YES____ NO____
	All boundary protection is in place prior to the commencement of delivery of any explosives or accessories.	☐	☐	
	Signage is a minimum distance of 10 metres away from any hole on the shot that will be loaded.	☐	☐	
	Windrows are placed where physical barriers are required and are flagged / coned, and adequate lighting is provided in hours of darkness.	☐	☐	
	Blast Cones that are yellow with a reflective sleeve are placed around the shot at a maximum of 10 metres intervals.	☐	☐	
	Flagging is used where additional visibility is required, e.g. delineation of boundary adjacent to working equipment.	☐	☐	
	Red Flashing Lights are used where shots are sleeping overnight, placed at all accesses and around the shot perimeter at a maximum of 50 metre intervals.	☐	☐	
	Areas containing misfired holes are treated as an Explosives Loading Area and have boundary protection established until rectified including red flashing lights where left overnight.	☐	☐	
	Only persons authorised under the security enter the shot, and contact is made with the Shotfirer prior to entering the Explosives Loading Area.	☐	☐	
4.	**Blast exclusion zones are effectively established and maintained (Cardinal Rule #5).**	YES	NO	Total compliant this section: YES____ NO____
	All means of access to Blast exclusion zones are guarded to prevent entry.	☐	☐	
	An audible signal/communication process is undertaken before and during the firing activity.	☐	☐	
	Crest limits are delineated to prevent over digging into a loaded shot.	☐	☐	

Conclusion

- 5 Years LTI Free is a commendable achievement
- The next step in our journey is to focus on:
  - **Critical Risk Task Observations**
  - **Simple effective Safety Management Systems**
  - **Effective Training Systems**
  - **Leadership**

QUESTIONS