

DMP's top 11 Human and organisational factors topics

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Agenda

1. Context

- Background to this project

2. Understanding DMP and industry requirements

- Safety culture vs human and organisational factors

3. Analysing existing DMP data

- Validating UK HSE human and organisational factors “top-ten, resulting in DMP “top-eleven”

4. Stakeholder Consultation

- Q4 2016 safety roadshows

My background in hazardous industries



UK and WA mining



Have you ever done the following....?

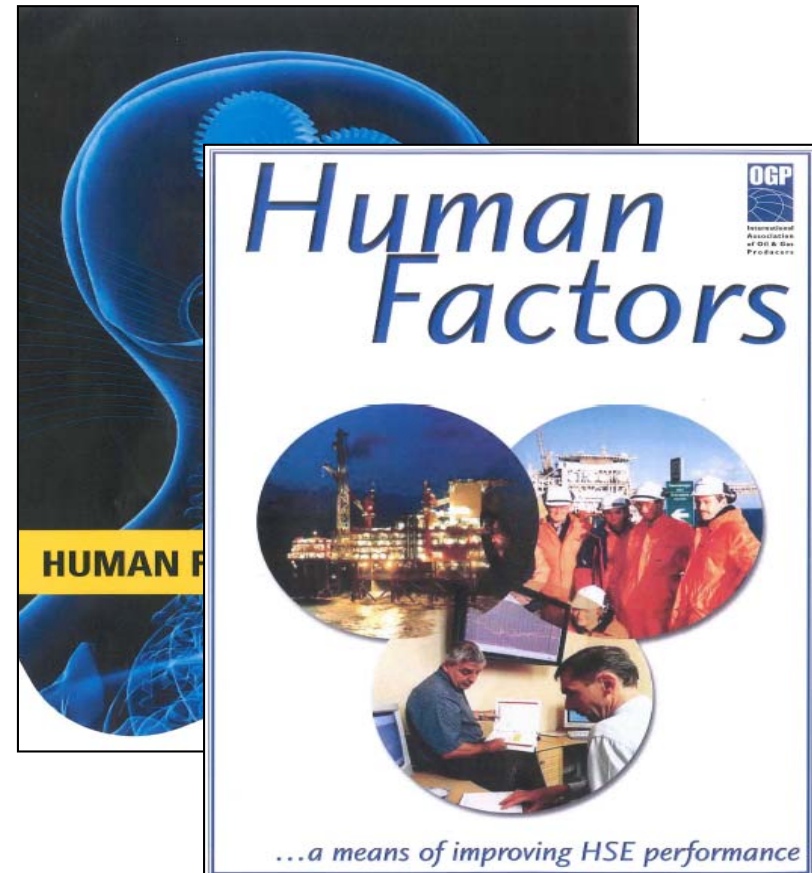
- Knowingly broken the speed limit
- Gone into a room, and forgotten why you went there?
- Stolen something
- Not seen something you want in the supermarket, even though its right in front of you
- Done home improvement work, without full PPE
- Daydreamed when you should be paying attention
- Failed to pay your train fare
- Bumped into things or people?
- Told a “white lie”
- Put the right thing in the wrong place (e.g. milk into oven)

Which work behaviours are a problem....?

- Driving over speed limit on company business
- Forgetting an important step in a procedure
- Deliberately taking banned items onto site
- Mis-reading a manual or drawing
- Not using the PPE provided
- Confusing two similar pieces of equipment, or products
- Not wearing seatbelts on fork-lift truck
- Misunderstanding a work instruction
- Using a mobile phone whilst driving
- Opening the wrong valve by mistake

Human Factors – a quick introduction

- All those things that could affect human performance in a task
- Understanding how human behaviour at all levels of an organisation can cause accidents
- Recognises people can and will make mistakes
- A framework for driving health and safety improvement



Five Golden Principles of Human Performance

Principle	
1	People are fallible, and even the best people make mistakes
2	Error-likely situations are predictable, manageable and preventable
3	Individual behaviour is influenced by organisational processes and values
4	People achieve high level of performance because of the encouragement and reinforcement received from leaders, peers and subordinates
5	Events can be avoided through an understanding of the reasons mistakes occur, and the application of the lessons learned from past events

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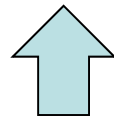
What do we mean by 'human factors' in hazardous industries?

10 Key UK HSE human and organisational factors topics

- 
- Managing human failure
 - Procedures
 - Training and competence
 - Staffing (including supervision)
 - Organisational change
 - Safety-critical communication
 - Human factors in design
 - Fatigue and shiftwork
 - Organisational (safety) culture
 - Maintenance, inspection and testing

Objective: To provide focus and structure to a very broad subject, and educate / influence industry, continually updated

GOAL: Managing human reliability & failure



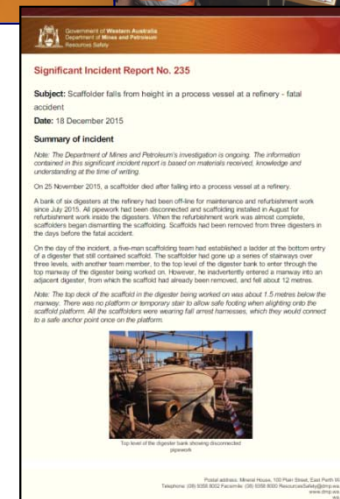
Influences on human reliability and performance

Organisational (safety) culture

Usable procedures	Safety-critical communication
Training and competence	Human factors in design
Staffing levels, including supervision	Fatigue and shiftwork
Organisational change	Maintenance, inspection and testing

...but are the UK HSE Human Factors relevant to the WA Mining industry? To answer this...

- DMP Mine Safety Branch initiated a project
- Important not to re-invent the wheel
- Engaged a human factors expert
- Analysed data from:
 - Industry literature
 - DMP publications
 - DMP incident and inspection data



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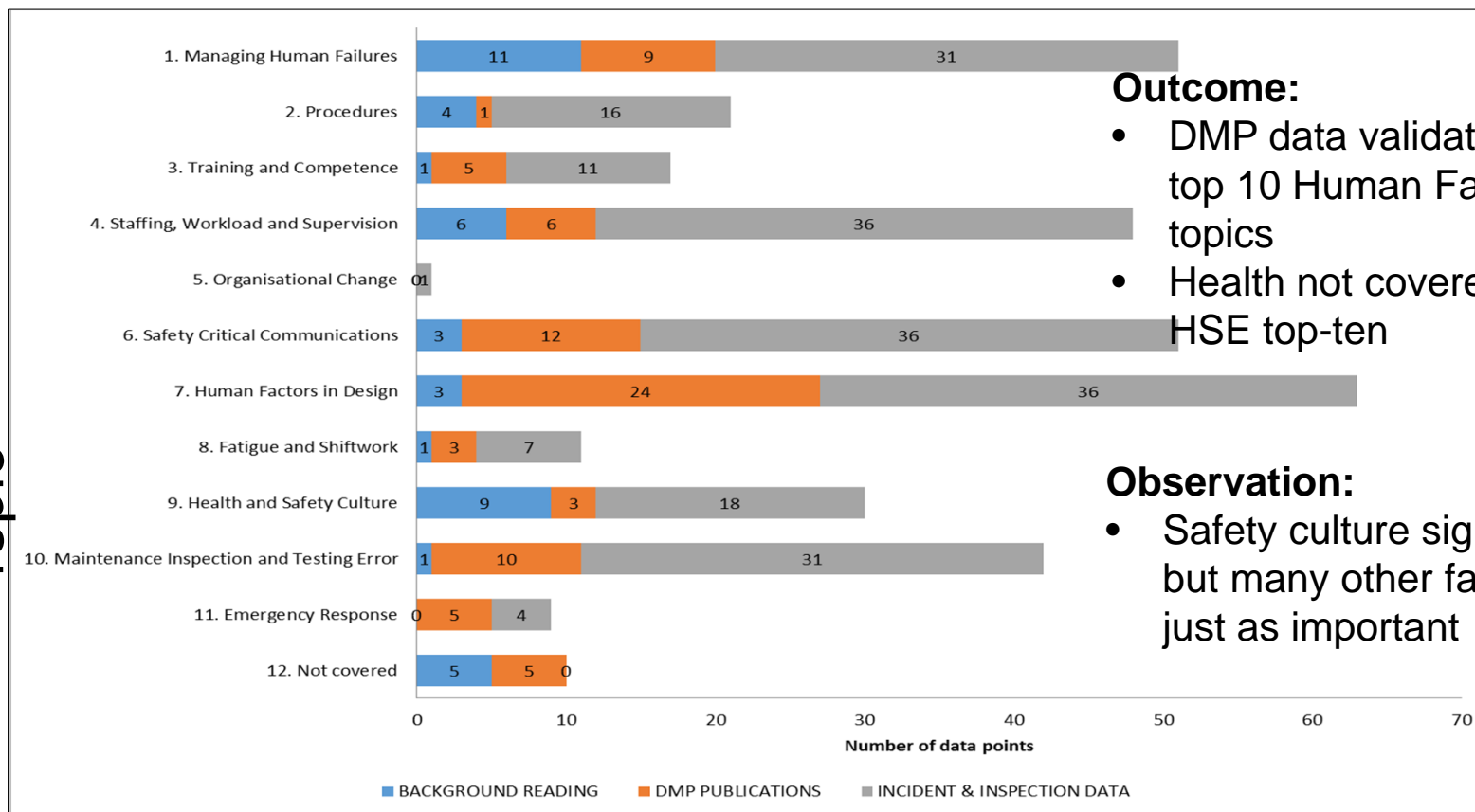
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DMP data sources

Type	Source	Comments
1. Background reading	<ul style="list-style-type: none"> HF mining safety research (QLD and US) 	Broad findings likely to be relevant to WA
	<ul style="list-style-type: none"> Safety Matters (3 recent issues) 	Topical WA issues
2. DMP mining publications	<ul style="list-style-type: none"> 56 audit categories 71 information sheets 130 safety bulletins 35 mining safety guidelines 	Presence of an HF topic as the subject indicates its importance
3. DMP incident and inspection data	WA MINING FATALITIES <ul style="list-style-type: none"> Fatality report (52 fatalities) 26 factual summaries of each fatality 	Qualitative and quantitative data on relevance of HF topics
	WA SERIOUS INJURIES <ul style="list-style-type: none"> Serious injury report (837 injuries) 60 serious incident reports 	Qualitative and quantitative data on relevance of HF topics
	SRS DATABASE <ul style="list-style-type: none"> Injury and occurrence reports, site records, audits, case investigations, notices, defects 	Key word search for HF topics which are not represented, or under-represented (e.g. staffing, workload)
	RECORD BOOK DATABASE <ul style="list-style-type: none"> Record book entries of site visits 	Key word search for HF topics which are not represented, or under-represented (e.g. staffing, workload)

DMP found evidence to support all UK HSE Human Factor topics

Human Factor Topic



Outcome:

- DMP data validated HSE top 10 Human Factor topics
- Health not covered by HSE top-ten

Observation:

- Safety culture significant, but many other factors just as important



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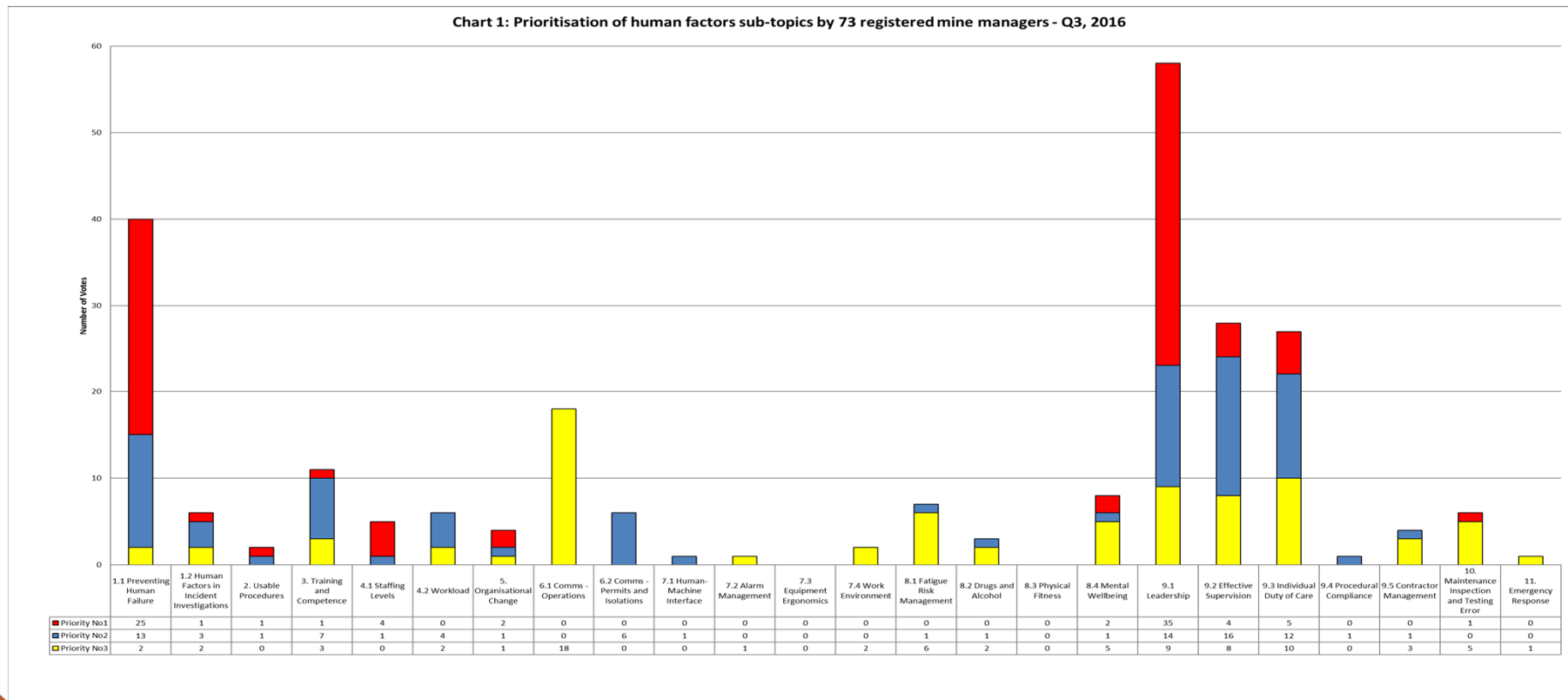
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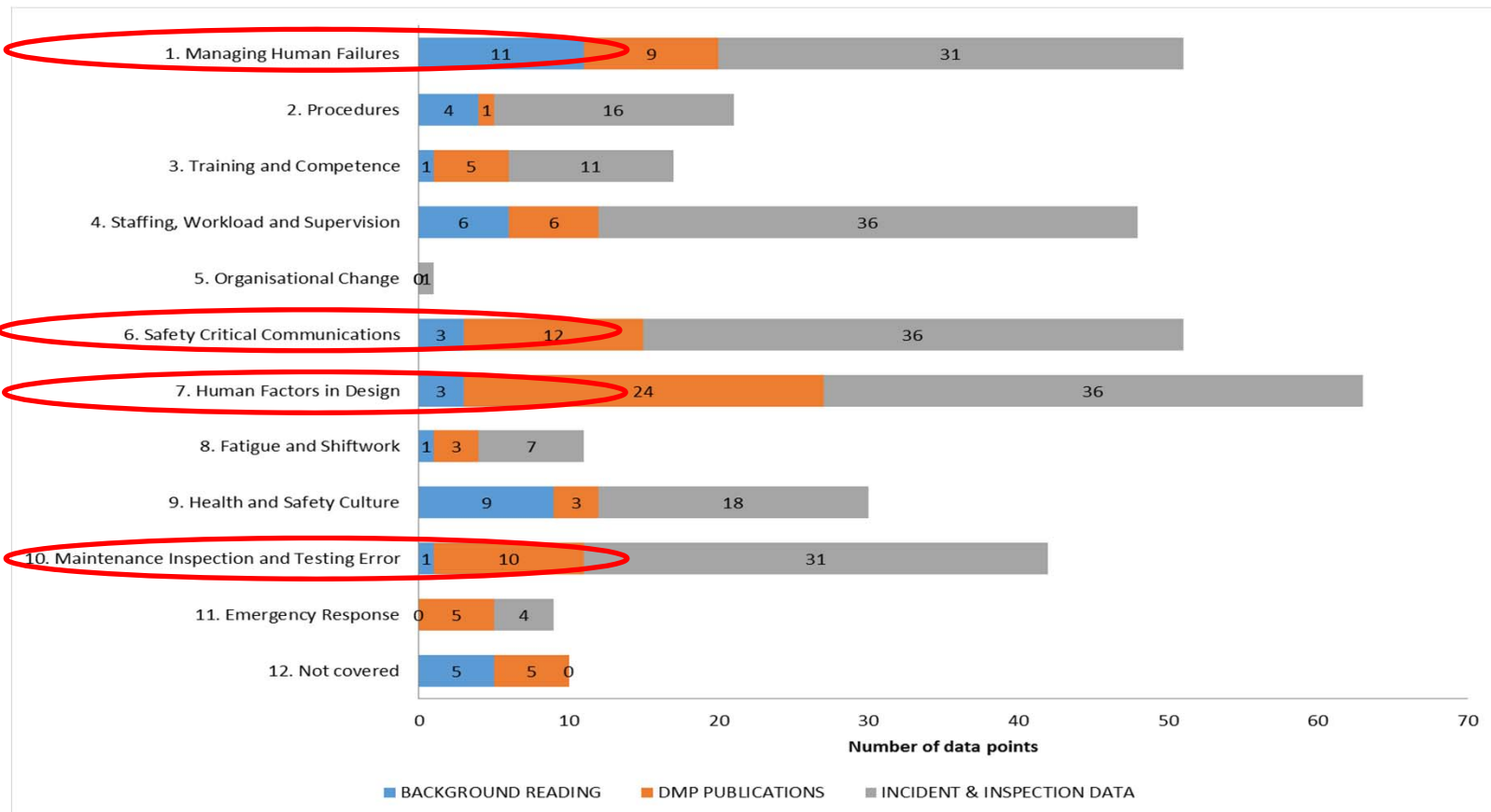
- Registered managers; Q4 2016 safety roadshows

Registered Manager's forum – August 2016

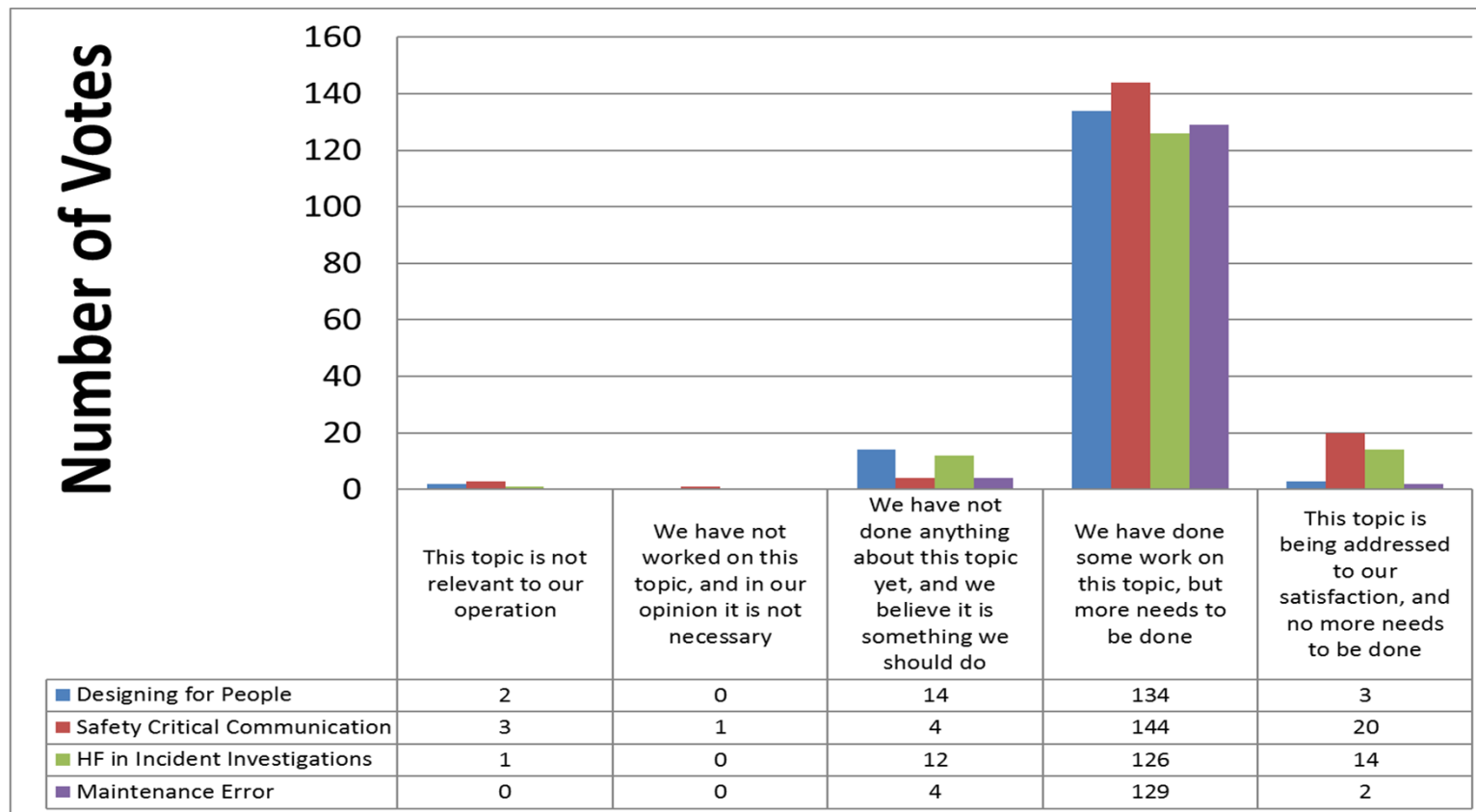


Selecting four HF topics for roadshow deep dive

Human Factor
Topic



Roadshow feedback (four key topics)



Conclusions

- DMP internal data validates human factors top-ten as highly-relevant to WA mining
- Broad acceptance of relevance by inspectors, and mining managers, supervisors and H&S professionals

Some existing resources...

Energy Institute HOF briefing notes

HUMAN FACTORS **BRIEFING NOTE No. 15**

Incident analysis

The terms 'incident', 'near misses' or 'accidents' are often used interchangeably. Very often, the immediate cause of an incident is the human and organisational factors. It is possible to prevent incidents by addressing these factors.

Why incident analysis?

"Many accidents are blamed on human error or maintenance work. This type of analysis is usually rooted deeper. Source: HSE (1999), Reducing the number of incidents and accident analysis in a wide range of industries, and identify that the human factors involved in the incident. It ignores the fundamental causes of the incident."

Purpose of this briefing note

This briefing note into incident analysis is summarised aspects of incidents as an element of the analysis appropriate steps to prevent incidents.

A large number of technicians attend a training course on incident analysis.

Keep asking 'why?'

In effect, all techniques used in incident analysis are based on the most basic underlying cause. The analysis in Case study 1, as reported, went no further than this: the driver was reprimanded and he agreed that in

- Organised around top-ten
- Introduce each subject with a definition.
- Illustrate problem areas and solutions using case studies.
- Provide a checklist of questions to gauge whether your company has a problem.
- Suggest what company/management can do to address the specific HF issue.
- List references/useful sources of information.

www.energyinst.org/hfbriefingnotes

UK HSE Inspectors Toolkit

Question set: HF in accident investigation

Question	Site response	Inspectors view	Improvements needed
1 Are investigation teams, including...			
2 Do investigation have more...			
3 Do investigation system fail...			
4 Do investigation types of human action (i.e. ...)			
5 Do investigation causes (pe...			
6 Are employ...			
7 Is the quality management guidance a...			
8 Is there an...			

- Also organised around top-ten
- Introduction to HOF
- Planning and conducting an inspection
- Question set of each topic, and space to record observations
- Further guidance
- Glossary

www.hse.gov.uk/humanfactors/topics/toolkit.pdf