Rail Accident Investigation Branch

The Rail Accident Investigation Branch (RAIB)

The investigation of safety management systems, and safety culture

ITSA Annual Conference

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Background

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- In March 2017, RAIB attended a round table discussion of experts hosted by the International Transport Forum at the OECD in Paris
- In preparation for this forum we prepared a paper on the ‘investigation of safety management systems’
- Some of the key points are presented in the subsequent slides

Why investigate safety management systems?

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- Research suggests there is a positive link between a developed safety management system and good safety performance

- The successful implementation of an SMS requires a willingness to formalise the organisation's approach to safety and a robust commitment to safety throughout the organisation - deficiencies in the SMS may indicate issues with the wider organisational culture

Safety management systems as a factor in UK rail accident investigations

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Key areas for investigation

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Safety management processes

- The management system
  - control measures
  - risk awareness
- Management assurance; eg
  - monitoring, review and audit

Learning from experience; eg

- reporting regimes, use of performance data etc

Safety culture (attitudes and behaviours)

Investigation of a safety management system – the five key questions

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1. What were the relevant control measures defined in the SMS? (how were they documented, understood and applied?)
2. To what extent were the hazards and risks understood?
3. What mechanisms were in place to monitor and review the efficacy of the safety management system?
4. How did the organisation learn from previous experience, and then use that experience to improve its safety arrangements?
5. How did the prevalent attitudes and behaviours within the organisation contribute to the accident/incident?

Typical indicators that SMS was a factor in the causation of an accident

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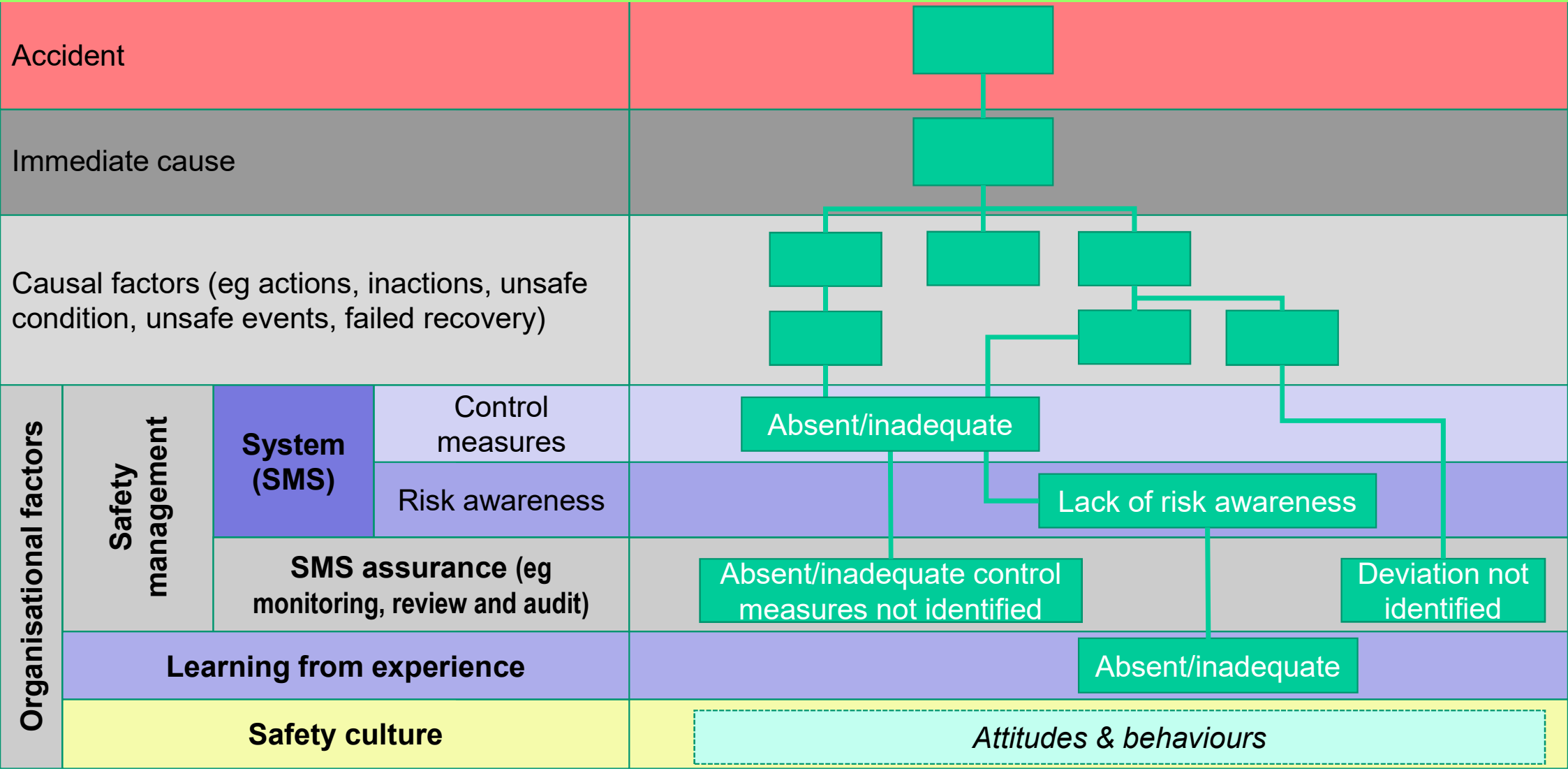
1. Control measures that are absent, or inadequate
2. Hazards have not been identified and/or the risk is not understood
3. The organisation has not recognised that its control measures are deficient, or has failed to detect non-compliance with its safety systems
4. The organisation has not learnt lessons from previous experience, or has not taken previous learning into account
5. The safety culture has created conditions that allowed the accident to occur

The investigation of safety management systems and safety culture – a simple model



Key points (1)

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- Accident investigators need to remember that there is no universally agreed list of issues that need to be encompassed within a safety management system
- It is not for accident investigators to verify the quality of an entire SMS
- Accident investigators do not merely check compliance with an SMS – we are not auditors
- Causal analysis needs to be deep enough to consider the role of indirect and less obvious organisational factors
- Accident investigators need to explore the extent to which hazards and risks were properly understood before the accident occurred

Key points (2)

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- Evidencing that poor safety management was a factor in an accident can be difficult - findings should always be based on the best evidence available:
  - beware of uncorroborated witness evidence and post-accident staff surveys
  - areas of uncertainty should be clearly identified
- A deficiency in one area of an organisation's SMS does not mean that the entire SMS is defective – exaggerated claims are to be avoided
- Safety culture is difficult to evidence due to its dynamic nature but examination of organisational factors should 'capture' safety culture

Key points (3)

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- Well-crafted recommendations are capable of bringing about major change in a company's safety management system. However:

  - ✓they must be well supported by evidence
  - ✓they must be capable of delivering a tangible improvement to safety
  - ✓they must be proportionate to the risk they are addressing
  - ✓they should targeted at the area of proven deficiency
  - ✓they should never propose a definitive solution to the safety issue that has been identified (since this places the investigator in the role of risk manager)

Suggested topics for discussion

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- Is the *investigation of safety management systems* something special or merely the by-product of good causal analysis?
- Safety management factors – where to look for the evidence
- How can the impact of safety culture on a particular accident be assessed? (including managing the risk of subjectivity)
- How do investigators avoid the risk of being too ‘wise after the event’?
- How do we ensure that investigators have the competence to explore underlying management factors?