



Practitioners' perspectives on incident investigations



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ARTICLE INFO

Article history:

Received 27 June 2016

Received in revised form 10 November 2016

Accepted 5 December 2016

Keywords:

Bow-tie analysis

Risk controls

Incident investigation

ABSTRACT

The ongoing existence of workplace accidents suggests that opportunities exist for organisations, regulators and other government bodies to improve their ability to learn from past events. The processes and outcomes of incident investigations are crucial to understanding the vulnerabilities and opportunities associated with work related incidents and accidents. Many scholarly articles exist that discuss the failure to learn from industrial incidents and incident investigation processes. However, very little research has been published on practitioner's views on incident investigations. In this article we begin to address this gap by presenting findings from a survey that gathered practitioners' perceptions of incident investigation processes. The article begins with a review of existing literature that was used to inform the survey distributed to practitioners. Results from the 222 respondents indicated that most incident investigation processes directed investigators to identify the cause of the incident, and to generate recommendations. Few required mitigation controls and the initiating event (i.e., the hazard) be identified. Even fewer organisations' incident investigation processes required a description of the incident or sequence of events, the identification of Human Factors issues, or the identification of prevention controls. Feedback from practitioners indicated that current incident investigation processes had certain strengths, and that opportunities existed for further improvement. Results suggest that further research is needed to determine the benefits of integrating risk control identification and analysis, as well as Human Factors, into incident investigation processes to optimise organisational learning.

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1. Introduction

Over 350,000 workers died as a result of occupational accidents in 2010 (United Nations, 2015). Each year Australian workers lose their lives whilst undertaking work based activities. In a little over a decade, occupational fatality rates have decreased from 2.7 per 100,000 workers in 2003 to 1.6 per 100,000 workers in 2015 (Safe Work Australia, 2016a). However, of concern is that in the last few years some industries' rates are appearing to plateau (at a relatively high rate) or creep up – including those for Transport, postal and warehousing; Mining; and Construction (Safe Work Australia, 2016a). In addition, a closer look at the absolute statistics reveals we are still killing 195 employees at work each year (Safe Work Australia, 2016a). See Fig. 1 for details (Safe Work Australia, 2013, 2015, 2016b).

Further analysis of the fatality data indicates that although there has been a reduction in the number of fatalities over time, the same types of events (or mechanism of incident) are associated with worker fatalities. See Fig. 2 for details (Safe Work Australia, 2013, 2015, 2016a). Over 13 years, 22 event types were found to consistently contribute towards worker fatalities. Four event types however contributed to 71.7% of deaths. These were vehicle collision (N = 1258), being hit by moving objects (N = 387), falls from height (N = 359), and being hit by falling objects (N = 294). These results indicate that Australian workers are consistently being killed by the same types of events over time.

This paper explores the role incident investigation processes play in continuing our failure to address the issue of repeat incidents. We began by reviewing the literature on risk management, incident investigation processes, and human factors models. This review was used to inform the design of a survey intended to collect practitioners' perspectives on incident investigation processes. The survey was constructed in SurveyMonkey® and distributed to incident investigators from a range of industries. Outcomes from the literature review and from the survey are discussed in the results section. The research described in this paper forms part of

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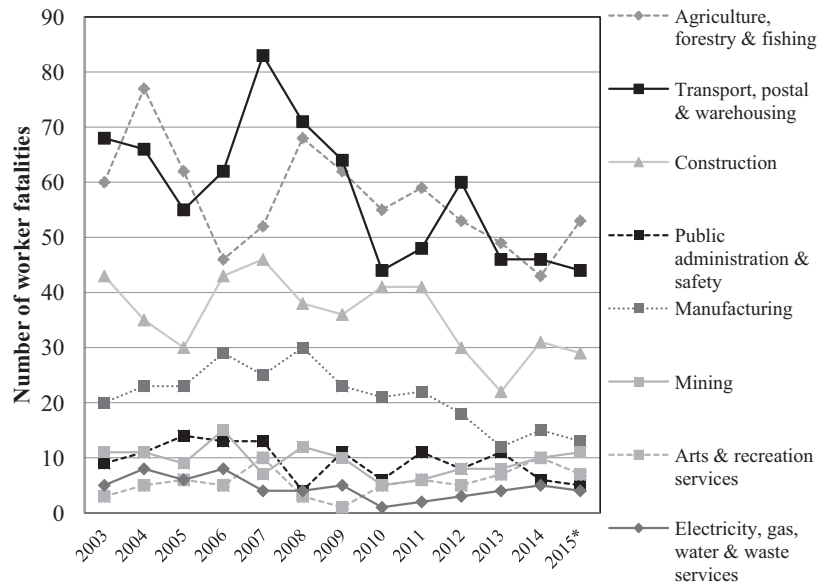


Fig. 1. Worker deaths in Australia by industry of workplace (Safe Work Australia). NB: not all industries are represented. * Preliminary worker deaths 2015.

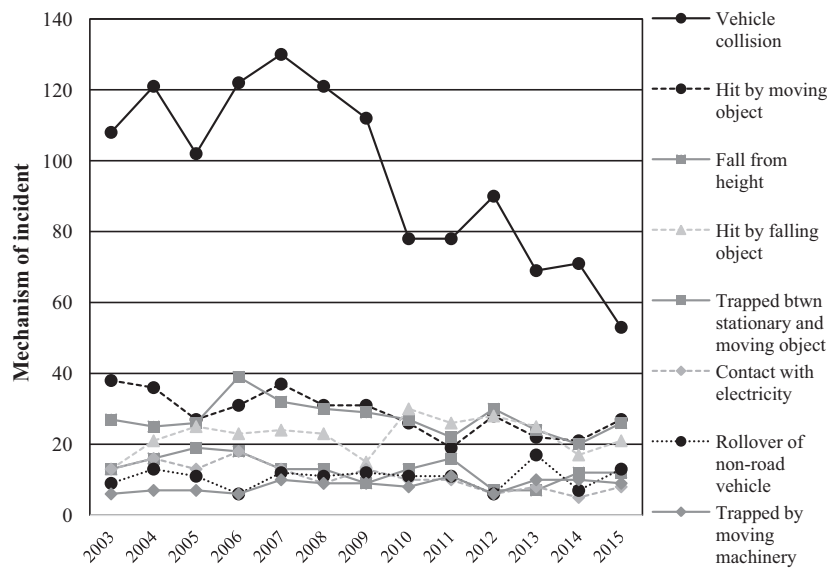


Fig. 2. Worker fatality as per mechanism of incident in Australia (Safe Work Australia). NB: Only the eight most frequently cited mechanisms of incident are represented.

a larger project researching incident investigation processes in industry.

2. Literature review

2.1. Failure to learn

The finding that workers over time are losing their lives in the same incident types is not new. The issue has been researched by Kletz (1993, 2001, 2009), Hopkins (2008) and others. For example work undertaken by Kletz (1993) focused opportunities for learning on technical and procedural failings primarily in process industries. He argued that repeat industrial accidents continue to occur not because we don't know how to prevent them, but rather we do not utilise the knowledge that is available to us. He continues by arguing that organisations themselves do not learn from the

past. It is the employees that learn and when they depart the organisation transfer this information with them.

Later work extended incident investigation processes to include looking beyond the immediate technical causes of incidents for ways to avoid hazards and identify/remediate weaknesses in management systems (Kletz, 2001, 2009). Often learning opportunities are not maximised as only the surface information is analysed. Kletz concluded in his 2009 book that all the accidents contained within need not have occurred. Similar incidents had happened previously, the analyses published, and someone within the organisation had the information to prevent them. He suggested that serious flaws existed in accident investigations, safety training and information availability for such repeat incidents to occur.

Hopkins (2008) also speaks of failure to learn. His work analysing the BP Texas City explosion seeks to explain why the organisation failed to learn from earlier incidents, within their own company and within the industry. Hopkins analysis determined

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