Officers' Due Diligence - Making Work Health and Safety an Accounting Problem?

Sharron O'Neill *

International Governance and Performance Research Centre
Department of Accounting and Corporate Governance
Macquarie University
Sydney, NSW, 2109
Telephone +61 2 98504882
Email: sharron.oneill@mq.edu.au

Karen Wolfe

NSW President
Safety Institute of Australia
PO Box 2078,
Gladstone Park, VIC. 3043
Email: kwz@ansto.gov.au

* Corresponding author

October, 2012

Working paper: please do not quote without permission of the authors.

Officers' Due Diligence:
Making Work Health and Safety an Accounting Problem?

Abstract

Purpose
New work health and safety (WHS) legislation in many Australian States and Territories places specific due diligence obligations on the officers of an organisation. This paper questions whether imposing an enforceable WHS duty of care on accounting and finance officers is justified and appropriate.

Design / methodology / approach
The paper critically examines the capacity of accountants and accounting to influence work-related injury and illness outcomes across an organisation. Detailed third-party investigations into fatal WHS failures are reviewed, focusing on the web of contributing factors identified in each case study. Factors that may be traced, directly or indirectly, to accounting practices are identified and explored.

Findings
The findings suggest accounting practices, such as the resourcing and performance management decisions of accountants, financial controllers, chief financial officers, chief executive officers and directors, can contribute significantly to an increase in WHS failure risk. Consequently, the imposition of WHS duty of care and due diligence obligations on accounting officers appears justified.

Research limitations / implications
The findings suggest a fundamental change in thinking about the role of accounting in organisational governance may be required. A novel, but critical, threshold concept is suggested to form a conceptual link between accounting practice and WHS risk. Further research is needed to examine the extent to which this threshold concept is addressed in undergraduate and professional accounting education.

Practical implications
Recommendations for accounting practice are offered, suggesting ways in which traditional accounting activities can be modified to better align organisational and WHS governance.

Originality / value
This paper builds a bridge between the accounting, management and WHS literature. This interdisciplinary perspective enables the development of a conceptual framework for corporate (WHS) governance.

Officers' Due Diligence:
Making Work Health and Safety an Accounting Problem?

Senior accounting and finance professionals play a critical role in controlling an organisation's performance. Where their role meets the definition[1] of an 'officer' under the Corporations Act (2001), they have specific accountabilities relating to work health and safety (WHS) performance. Although prosecutions of these accounting and finance professionals (hereafter accounting officers) over work-related fatalities are relatively infrequent, they remain a source of frustration for those who perceive a distinct lack of influence over workers' safety at the 'coal face' (see for example Kumar V Ritchie). This paper seeks to explore the justification for holding accounting officers accountable under law for WHS risk management.

In Australia, the introduction of a positive duty of care requirement for officers in the recent Work Health and Safety Act[2]" (hereafter, the WHS Act) has been cited as a "significant improvement on the liability position for individual directors" in some states (Gray and Kellock 2010, p1) and "one of the most important reforms" in the new legislation (Sherrif and Tooma 2010, p32). Rather than having poorly defined 'persons in control' automatically deemed liable for a firms failure to ensure WHS, the new provisions impose a specific duty of care on officers and clearly articulated minimum due diligence requirements for compliance. These requirements apply to all officers, including those in the accounting discipline.

However, the questions remain: is it appropriate for accounting officers to be subject to this duty of care and associated legal liability? Are they genuinely in a position of influence with respect to the health and safety of workers? Anecdotal claims of 'cost cutting' are occasionally cited as contributing factors in WHS disasters (see for example reflections on the Piper Alpha disaster (Berger 2009) and Bhopal chemical disaster (Dutta 2002)) and in the workplace fatalities of

[1] See appendix 1 for the definition of an officer.

[2] Australia is a federation of six States and two Territories, each with their own occupational health and safety legislation. Efforts to harmonise this legislation to reduce the compliance burden on those organisations operating across jurisdictions saw the development of a model Work Health and Safety Act (2010) which was to then be enacted in each jurisdiction. This new Work Health and Safety Act will be operating in at least six of eight Australian jurisdictions by January 2013 (see also p4).

individuals (see for example, Cooper et al. 2011; Ede 2008). Despite this, the accounting literature provides little evidence of research that has empirically or theoretically explained the hypothesised relationship between the financial resourcing and other routine activities of senior accounting professionals and WHS failure.

This paper seeks to explore such justification by critically examining the capacity of accounting professionals to influence WHS outcomes (performance). The paper is structured as follows. Section two outlines the case by which accounting executives may be identified as 'officers' and presents an overview of the WHS Act's officers duty of care and due diligence provisions. Section three draws on WHS literature to outline the two dominant bodies of work on injury and illness prevention: one focused on technical approaches to identifying and controlling WHS hazards and the other focused on cultural/behavioural approaches. Section four then connects WHS and accounting by examining two WHS disaster case studies undertaken by Hopkins (2000, 2005, 2008) and teasing out lessons for those charged with accounting oversight. Section five reflects on the findings to explore how accounting can support or inhibit WHS. In doing so, threshold concepts of WHS are proposed and a conceptual framework for WHS governance is proposed. Finally, section six summarises the findings and presents the paper's conclusions.

2. Officer's duty of care

As noted above, many senior accounting and finance professionals meet the Australian *Corporations Act 2001* definition[3] of an 'officer' by virtue of their individual role and accountabilities and most are therefore subject to the specific duty of care (to exercise due diligence) provisions in the WHS Act. Importantly, Australia is a federation of six States and two Territories, each with their own work health and safety legislation. Recent efforts to harmonise work health and safety law across Australia saw the collaborative development of a model WHS Act that could be enacted within each jurisdiction. Slightly different scenarios exist for officers at this stage of WHS legislative harmonisation process. Those in New South Wales, Queensland,

[3] See Appendix 1 for the Corporations Act definition of an officer.

the Northern Territory and the Australian Capital Territory organisations have been subject to the new duty of care requirement since their WHS Acts commenced on 1st January 2012. Those in Tasmania and South Australia[4] will see their new Acts come into force on 1st January 2013. In Victoria and Western Australia, existing legislation imposes WHS accountability on 'persons in control' of a workplace, that is, persons who have, "*to any extent*", the management or control of a workplace (see Occupational Health and Safety Act (Vic) 2004, s26(1), and Occupational Safety and Health Act (WA) 1984, s22(1)). Together, this demonstrates the applicability of WHS due diligence considerations to accounting officers in all Australian organisations.

The new WHS Act (to which most officers will be subject by Jan 2013) imposes specific obligations on a 'person conducting a business or undertaking' (a PCBU) and on the 'officers' of the PCBU. These duties cannot be delegated and financial and custodial penalties for failure to comply are significant and not covered by directors and officers insurance (Tooma 2012). The PCBU is essentially the business or organisation that controls the workplace. Included as PCBUs are some individuals (such as sole traders and partners conducting a business in partnership), as well as volunteer organisations and legal 'persons' (entities) such as companies[5]. A primary duty of each PCBU is to ensure, so far as reasonably practicable, the health and safety of workers. This includes workers directly engaged by the PCBU and those whose activities are influenced or directed by the PCBU (WHS Act 2010, s19).

The duty of care required of an *officer* of a PCBU is that the officer "*must exercise due diligence* to *ensure the [PCBU] complies* with its duties or obligations" (Corporations Act 2001, s27(1), emphasis added). The minimum due diligence requirements outlined in section 27(5) of the WHS Act provide important guidance about the actions officers need to undertake to ensure compliance. These include taking reasonable steps to,

(a) acquire and keep up-to-date knowledge of work health and safety matters; and

[4] Note: existing legislation in South Australia already places a positive duty of care on "responsible officers" (Sherriff and Tooma 2010, p43).

[5] Note that a person can have more than one duty. For example sole traders and partners are subject to three distinct duties: a duty of care as a PCBU (s19-26), a duty as an Officer (s27) and a duty as a worker (s28).

(b) gain an understanding of the nature of the operations of the business or undertaking of the person conducting the business or undertaking and generally of the hazards and risks associated with those operations; and

(c) ensure that the person conducting the business or undertaking has available for use, and uses, appropriate resources and processes to eliminate or minimise risks to health and safety from work carried out as part of the conduct of the business or undertaking; and

(d) ensure that the person conducting the business or undertaking has appropriate processes for receiving and considering information regarding incidents, hazards and risks and responding in a timely way to that information; and

(e) ensure that the person conducting the business or undertaking has, and implements, processes for complying[6] with any duty or obligation of the person conducting the business or undertaking under this Act; and

(f) verify the provision and use of the resources and processes referred to in paragraphs (c) to (e).

(Source: Model Work Health and Safety Act 2010, s27(5))

Notably, the relevance of both financial and non-financial accounting practices to WHS is demonstrated by inclusion of references to activities such as resourcing, performance reporting and analysis, and verification (see above, sections 27(5) c, d and f respectively). This reinforces the WHS accountability of those officers with accounting expertise and oversight of accounting practices.

3. Managing WHS performance

To understand how accounting practices might influence WHS risk management, it is first important to appreciate what WHS risk is and how and why work-related injuries and illnesses occur. This section therefore draws on WHS literature to outline dominant theories of accident causation and injury prevention and contextualise the empirical analysis provided in section 4. Early safety theorists adopted a technical approach to WHS research, beginning what is now a considerable body of research on workplace hazards and conditions (Borys et al 2009). This seeks to identify mechanical, gravitational, chemical, toxic, particulate, viral, temperature-related and other hazards; to understand the cause-effect relationships between those hazards and work-related injury and illness outcomes; and to identify mechanisms capable of controlling the risks posed by these hazards (Chhokar 1987). The “unprecedented volume” of WHS risk management knowledge reaffirms the robust inverse relationship between the preventative

[6] For example, processes for: reporting incidents; consulting with workers; ensuring compliance with legal notices; and ensuring the provision of appropriate WHS training and instruction to workers.

WHS control efforts of employers and the subsequent frequency and severity of work injury and illness (Al-Tuwaijri 2008, pvii; Ginter 1979; Chelius 1991). As such, it underscores the predictable and fundamentally preventable nature of work-related injury and illness (Reason 1993) that justifies the onus on managers to ensure WHS, and their subsequent accountability for serious WHS failures.

In the 1930's, an examination of supervisor incident reports led insurance assessor Heinrich (1959) to conclude, however, that workplace accidents were, on average, 88% due to unsafe acts on the part of the employee, only 10% due to unsafe working conditions and 2% simply unpreventable. Heinrich saw injuries primarily as the result of human errors of commission or omission (LaBar 1996). These placed humans 'at the centre of incident causation" (Byard 2006, p25) as a result of errors arising from, for example, inexperience, incompetence, carelessness, habit, rushing a task, poor or inadequate communications, reliance on poor memory, poor fitness, workload stress, ill health, or discretionary decision-making (Morris 2006). His findings generated a new body of research into the role of human factors – i.e. attributes such as employee behaviours, attitudes, perceptions, motivations, knowledge, values, trust and (organisational) culture - in the causation of work-related injury and illness[7] (for an overview, see Bluff 2011). Therein lay the foundations for a continuing debate over the relative importance of providing a safe place versus managing safe people.

However, as global WHS research increased in sophistication in the 1980s, 1990s and 2000s two important findings emerged. First, the safe person versus safe place theories of causation were not dichotomies reflected in practice. 'Unsafe behaviours' may be contributing factors in an injury event, however research revealed that many human errors outlined above were rarely 'the root' cause of incidents but rather symptoms of various, and often multiple, managerial decisions and organisational or structural problems (Hopkins 2008). Evidence points, for example, to errors being "shaped and provoked by upstream workplace and organisational

[7] Note, Reason (2008) argues that "fallibility is part of the human condition. [Human] errors cannot be eradicated, but they can be anticipated and managed accordingly… we can change the conditions under which people work in order to make errors less likely and more easily recoverable" (p34).

factors" such as inadequate staffing, poorly defined tasks, poorly designed work processes, poorly maintained / unsafe equipment and inadequate resourcing, training and supervision (Borys 2000, p163). Environmental constraints and management decisions can therefore "create error-enforcing and violation-promoting conditions at the sharp end" (Reason 1995, p1714) which "easily overwhelm the employee's best intentions to work safely" (DeJoy et al. 2004, p56). Personal variables such as employee knowledge and attitude, while important, are seldom sufficient to ensure safe behaviour (DeJoy et al. 2004, Reason 1993). Consequently, WHS legislation requires identification and control of both technical and behavioural risks and specifies workers be provided: first and foremost, with a safe place of work, safe systems of work, proper and adequately maintained plant and equipment; then adequate training, and competent staff to manage and supervise (CCH 2003; CCH 2004; AS1470 1986; Else and Beaumont 2000).

The second important finding emerging from a review of the WHS literature is that the body of technical and human factors WHS research[8] focuses almost entirely at understanding hazards and controls at the operational, or 'factory floor', level. Studies have examined WHS risk and risk management from the perspective of employees, immediate supervisors, safety committees and unions, but limited attention to date has been paid to understanding how the technical, behavioural and structural factors that contribute to WHS risk may be shaped by more senior management. This is important because:

> Safety is primarily a leadership responsibility. It is true that workers have a role in ensuring their own safety and the safety of others, but it is leaders who establish the culture of an organisation (Schein 1992), allocate resources and establish priorities. These things are crucial to workplace safety and they are peculiarly within the control of leaders (Hopkins 2007, p2).

This suggests there is a case for holding leaders accountable for WHS failures. References within the WHS Act to specific accounting practices, such as financial resource allocation, also suggests a potential justification for the extension of this accountability to accounting officers participating in strategic and financial decision-making at an organisational level.

[8] Hale and Hovden (1998) suggest OHS knowledge has developed in three stages; a technical age, a human factors age and a management systems age (Borys et al 2009).

4. Accounting as a contributory factor in WHS failure

This section reflects on prior case studies to consider how strategic and financial decisions are implicated in two Australian WHS disasters: the Esso Longford gas explosion (1998) and the Glenbrook train crash (1999). Each case was examined in detail by Andrew Hopkins, a professor of sociology and leading expert in the fields of WHS, who summarised the contributing factors he identified in a causal diagram. His diagrams (presented in Figures 1 and 2) visibly illustrate the seemingly random, but often predictable, confluence of contributory factors that lead to serious WHS failures (Hopkins 2008).

Hopkins classifies contributing factors as immediate, organisational and corporate (Hopkins 2005) and in some cases extends his analyses to also identify governmental / regulatory and societal factors (Hopkins 2005; 2000). He argues, however, that most accident investigations fail to look beyond the immediate and organisational factors and, as a result, fail to identify important relationships between WHS outcomes and organisational decisions and structures far removed from the actual site of an incident. These relationships are now explored by reflecting on the way routine accounting practices appear to have contributed to the two WHS disasters analysed by Hopkins (2000, 2005).

<u>Case A: The Esso's gas plant explosion</u> - Longford Victoria, 25th September, 1998.

Background (extract from Hopkins 2000)

> *"Things happened on that day that no one had ever seen at Longford before. A steel cylinder sprang a leak that let liquid hydrocarbon spill onto the ground. A dribble at first, but then, over the course of the morning it developed into a cascade… Ice formed on pipework that was normally too hot to touch. Pumps that never stopped, ceased flowing and refused to start. Storage tank liquid levels that were normally stable plummeted… I was in Control Room One when the first explosion ripped apart a 14-tonne steel vessel, 25 meters from where I was standing. It sent shards of steel, dust, debris and liquid hydrocarbon into the atmosphere"* (The Age 30/9/99).
>
> These are the words of the operator whom Esso blamed for the accident at its gas plant at Longford, Victoria on 25 September 1998, an accident which killed two men, injured eight others and cut Melbourne's gas supply for two weeks.

> The Royal Commission took the view that neither this man nor any of the others present on the day was at fault, for none of them understood the significance of the mysterious events they were witnessing. The fault was Esso's. The company had "failed to take measures which were plainly practicable", measures which it "could and should" have taken. (Hopkins 2000, p1)

The company's analysis of the cause of the incident is purported to have concluded that the on-duty control room operators and supervisors made a number of crucial and inexcusable errors. However, operator error was the beginning, rather than the end, of the analysis undertaken by Hopkins who suggests,

> Asking why errors were made is far more useful than asking who is to blame. Asking why leads invariably to more fundamental cultural and organisational causes. Inquiries must get to this level if they are to be of any value in preventing recurrences. Moreover, once it is understood that there are reasons why people behave as they do, blame becomes far less appropriate (Hopkins 2005, p27).

[Insert Figure 1 about here]

Hopkins' (2000) analysis, reproduced in Figure 1, identified numerous internal and external contributory factors. Importantly, resource allocation decisions at the corporate level were identified as an important driver of numerous organisational-level contributing factors. For example, cost reductions reportedly led to a maintenance backlog and to understaffing; the latter implicated in poor engineering design, poor operational supervision and the indefinite postponement of the gas plant's crucial hazard identification and operability audit (HAZOP). Furthermore, Hopkins observes that the concern about cost control "had been effectively communicated to the workforce" to such an extent that the operator reported to the inquiry,

> I would go so far as to say I faced a dilemma on the day, standing 20 metres from the explosion and the fire, as to whether or not I should activate the ESD 1 (Emergency Shutdown 1), because I was, for some strange reason, worried about the possible impact on production (Hopkins 2000, p146).

Cost-control was not the only way in which accounting practices are reported to have contributed to the gas plant disaster. Hopkins' (2000) suggests the firm's incident reporting, performance auditing and performance management systems had "systematically ignored previous upsets which might have provided warnings of disaster" (p79) and instead focused

(almost entirely) around one inappropriate KPI (lost time injuries[9]) that "distracted attention from the risk of a major incident" (p76). The distraction results from the failure of lost time injury data to reliably capture injury outcomes or latent WHS risk. Hopkins' (2000) noted,

> Safety was measured in terms of lost time injuries and Esso's safety efforts were therefore focused on minimising the number of minor injuries… Such a strategy ignored completely the special role of management in controlling major hazards… [also] the focus on lost time injuries impeded the recognition of hazards implicit in unrepaired equipment, thereby distorting Esso's maintenance program (Hopkins 2000, p79).

Dekker (2011) suggests that within a complex system, reliance on a single performance measure can limit or amplify the local knowledge available for others to see and thus "direct and constrain what other people in the complex system will see as sensible, rational or even possible" (p14). For Esso, it appears that over time the absence of injury came to be interpreted within the organisation as 'safety' even though latent hazards *and their warning signs* had routinely been present. The result illustrates what Dekker (2011) calls a 'drift to failure'; the gradual, incremental decline into disaster driven by factors that serve to 'normalise deviations' (Turner 1978) and by doing so obscure ever increasing levels of risk.

In summarising his conclusions, Hopkins (2000) observes that companies should actively seek out and apply the valuable lessons to be learned from the mistakes of others. Among the 'lessons from Longford' are cautionary tales for those with responsibility for the control and oversight of budgeting and financial resource allocation (particularly with regard to capital expenditure, equipment maintenance, training and human resourcing). Critically, the findings also present lessons for those charged with the design and implementation of performance management systems by demonstrating the importance of understanding what key performance measures actually capture. Without this knowledge, valid interpretation of performance information may be compromised and the ability to pre-empt and assess any potentially significant dysfunctional consequences may be hampered.

[9] Lost time injury data are an incomplete measure of injury outcomes because they report only on the subset of injuries that impact on productive capacity. Although they appear to have become a "cornerstone" of WHS reporting, LTI data are actually a poor measure of safety (i.e. freedom from risk of injury) because they are incapable of measuring the latent hazards that have yet to translate to injury.

Case B: The Glenbrook Train Crash - Glenbrook, New South Wales, 2nd December, 1999.

Background (extract from Hopkins 2005)

> In December 1999, a busy commuter train bringing people from the Blue Mountains to work in Sydney arrived at a red light at Glenbrook Station, and stopped. The driver had already been told that the light was probably defective and that it had gone to red as a failsafe mechanism, so he radioed the signaller and asked: "I'm right to past it, am I, mate?"
>
> Minutes earlier, the Indian Pacific, on the last leg of its journey from Perth to Sydney, had [stopped, sought permission and] been authorised to pass the same signal. However, it had stopped [again] just over a kilometre ahead at a second red light. The signaller did not know that the Indian Pacific had stopped [for a second time because the driver had been unable to make contact due to difficulties with the trackside phone (p42)], and [so the signaller] replied to the driver of the commuter train: "yeah, mate, you certainly are."
>
> The commuter train accelerated away, but upon rounding a bend the driver was aghast to see the interstate train in his way. He applied the emergency brakes and ran back through the carriage warning people of the impending crash. He survived, but seven of his passengers did not (Hopkins 2005, p25).

In his analysis of this case, Hopkins (2005) recites how the rail track owner "argued that the driver of the commuter train was solely to blame, because he was driving too fast", while conversely, counsel acting for the lives lost in the accident "argued the signaller and a train controller had shown 'reckless indifference' to their jobs" (p27). By again asking why errors were made, rather than focusing on issues of blame, Hopkins identified a multitude of factors as contributing to the incident and developed a model of accident causation (see Figure 2). Adopting an overtly cultural perspective in his analysis of this case, Hopkins' causal model illustrates that "the question of why the driver did not proceed with 'extreme caution' is no more important that the question of why the *Indian Pacific* was delayed" (p78). Instead, the analysis again reveals multiple causes (or drivers) of each of these two critical factors.

[Insert Figure 2 about here]

Hopkins' (2005) concluded that four cultural drivers contributed to the disaster. First, a culture of *rules,* depicted in the creation of seemingly endless volumes of detailed rules and amendments that workers failed to fully understand or comply with. Second, a culture of *silos*, where individuals for various reasons possessed limited awareness of how their tasks, responsibilities

and problems connected with and contributed to broader organisational processes and risks. Third, a culture of *on-time-running* in which 'production' goals were perceived not only as paramount, but non-negotiable. Finally, a subsequent culture of *risk-blindness*, as inadequate training, bureaucratic rule-reliance and inadequate support for individuals seeking to report and act on safety issues left many workers increasingly disempowered and ever less risk aware[10].

Two types of accounting practices appear to have been implicated in these cultural contexts, and ultimately in the WHS risk that led to the disaster. First is the performance management system reported to have incentivised the institutionalised pursuit of *on-time-running (OTR)*. The Commissioner conducting the Inquiry concluded, in part, that the emphasis on *OTR* performance targets had compromised safety. OTR "had become so entrenched in the attitudes of railway operational personnel that they could no longer objectively assess anomalous situations" and consequently, the indoctrination of OTR performance goals had led to "an attitude that could not be varied under any circumstances – trains had to run on time despite the circumstances" (p51). Numerous other instances in which safety had been "sacrificed to punctuality" also came to light in the inquiry's proceedings (p57). These included instances in which speed triggers on safety mechanisms had been increased so trains could move more quickly through intermediate stops, and reports of pressure on drivers to operate trains that were known to be defective.

The latter alludes to the second way in which financial decision-making appeared to be implicated in safety failure; inadequate investment in infrastructure and routine maintenance. The lack of capital expenditure on communications technology was a particular case in point. First, the signal box which covered the Glenbrook area did not have the generally available electronic 'train indicator board' to indicate the exact position of trains in the area. Second, no fewer than five different communication devices were used for communications between drivers, controllers and signallers. As summarised by Hopkins (2005),

[10] Hopkins (2005) devotes a separate chapter to the in depth analysis of each of these four cultural causes.

> The commuter train was equipped with a Sydney-area two way radio which enabled it to communicate with the signaller and the controller, but not the driver of any other train. The Indian Pacific was equipped with a second two way radio system which enabled it to communicate with drivers of other long-distance trains, as well as signallers. A third radio system was also available to the drivers of the Indian Pacific, the signaller and the guard on the commuter train, but not the commuter train driver or the train controller. Mobile phones were available to some railway staff. Finally there were phones at the base of each signal which enabled drivers to communicate with signallers. The latter system was antiquated technology which required the driver to get down from the train, walk to the phone box, open it with a key (if it was locked) and crank a handle fifteen times in order to get the attention of the signaller at the other end. [Note, drivers of commuter trains seeking permission to pass signals at stop could use the local Sydney–area radio but drivers of interstate trains were required to alight and use the phone located on the signal box – even in peak hour when the commuter train system was under stress]. The Commissioner was incredulous at the antiquated nature of this system, "Perhaps he could send up a smoke signal. Really, in the 21st century, a technology that was early 20th century is still being used to communicate. I find that very difficult to understand" (p64).

The combination of "archaic phone technology" (p77) and "non-functioning radios" with evidence of "defective brakes" (p35) and "defective signals" (p58) alluded to a cost-culture of systemic under-investment in the purchase and routine maintenance of critical infrastructure. This appeared to undermine other WHS risk management efforts. In summing up his analysis of the Glenbrook crash, Hopkins (2005) offers the following lesson,

> This analysis of the New South Wales railways has revealed a complex and multifaceted relationship between organisational culture and safety. …improving safety is not simply a matter of grafting a culture of safety onto an existing organisational culture. The point is that the existing organisational culture, whatever it is, has implications for safety, and these need to be understood. Some aspects of an existing culture may need to be modified before significant safety improvements are possible (p78).

5. Discussion: Accounting for WHS Governance

This review has shown how financial resource allocation and performance management decisions appear to have inadvertently contributed to the latent hazards that precipitated WHS failure and loss of life. The potential for inadequate or misdirected financial resources to undermine an organisation's capacity to operate safely suggests traditional (operational level) technical and cultural WHS controls are unlikely to be sufficient to ensure WHS. Effective WHS

governance is therefore required to supplement technical and cultural controls as a necessary component of WHS risk management (see Figure 3).

[Insert Figure 3 about here]

Importantly, the recent Australian WHS legislation's articulation of both a definition of officers and their WHS due diligence requirements plays an important role in clarifying and communicating concepts of WHS governance. The due diligence requirements seek to help stem the fundamentally preventable WHS failures that are repeated time and again amid claims of a "depressing sameness" in their causes[11] (Hopkins 2008, p4). Be they explosions in high-hazard facilities, collapses in underground mines, road crashes and roll-overs in heavy vehicle transport, falls from height on construction projects, psycho-social disorders among office workers, or violently amputated or crushed limbs in machines and conveyor belts; the contributing factors to WHS failure habitually point to issues of inadequate investment (in risk-awareness and risk-control training, staffing, plant and equipment maintenance and capital expenditure[12]), goal conflict and inappropriate choices in performance measures and systems (see for example Berger 2007; 2009; Hopkins 2008, p4; Reason 2008).

It is a tragic irony that the failure costs associated with poor WHS tend to far outweigh cost savings realised through inadequate risk identification and elimination/control processes. So what is it that prevents organisations, and their accounting officers, from learning the important lessons embedded in the tragedies of others? This review suggests that perhaps the most important lessons for accounting officers relate less to recognising the need to engage in WHS risk management and more to understanding how to effectively engage in WHS risk management processes. For example, both firms examined above had WHS risk management programs in place and Esso had even won an industry award for its safety performance the year

[11] Notably, WHS failures are not only repeated in the same industries but often in the same firm. For example Hopkins (2008) suggests the similarities in factors contributing to BP's 2005 Texas City refinery and 2010 DeepWater Horizon disasters reflects the company's failure to learn critical lessons from earlier tragedy. Notably the Baker panel inquiry into the Texas City disaster, an inquiry commissioned by BP, had published a 374 page report on their findings and recommendations on 16 January 2007.

[12] For example inadequate investment in fitting protective guards and other safety features.

prior to the disaster at Longford. However, as Hopkins (2005) noted, efforts to 'graft' safety objectives on to existing financial performance objectives were prone to creating serious goal conflict and undermining the success of WHS investment. Officers must therefore appreciate and address the interconnectedness of financial and WHS goals. For many, this will require a fundamental change in thinking from 'resourcing work health and safety' to 'resourcing safe and healthy work'.

Resourcing safe and healthy work

The notion of resourcing safe and healthy work presents a threshold concept of WHS. It forms a conceptual bridge between accounting practice and WHS risk. Threshold concepts are vital but challenging concepts that, once grasped, radically transform the way something is understood or interpreted - unlocking a portal to new and previously inaccessible ways of thinking (Davies 2006; Meyer and Land 2006). Threshold concepts are difficult because the knowledge they create requires the integration of information from multiple, often unfamiliar, disciplines (Cousins 2006; Davies 2006; Lucas and Mladenovic 2007; Meyer and Land 2006). Resourcing safe and healthy work draws on "disconcerting new territory" (Meyer and Land 2006, pxv) and therefore may initially appear counterintuitive from the primarily financial, relevant cost perspective of traditional accounting education which has largely ignored externalities, those costs incapable of reliable measurement and the practical implications of accounting decisions on WHS.

At a practical level, strategies and process for resourcing safe and healthy work contrast starkly with those for allocating resources to separate activities of 1) work (production) and 2) WHS risk management. The latter is often enacted by 'grafting on' WHS-related line items in budgets and management reports and designing WHS to essentially function as an organisational 'silo'. In contrast the former requires a deliberately considered integration of production and safety goals and relies on holistic assessments of work for performance appraisal and financial (including human resource) allocation decisions (Tooma 2012). This may require changes in accounting practices to ensure accounting officers engage in the essential change management WHS risk

assessment processes so often demanded of employees at lower levels in an organisation's structure (Hopkins 2008). Recommendations for accounting practice include:

- Organisational change: Assessments need to consider safe and healthy staffing levels[13] for both operational and supervisory positions, for all decisions relating to restructure, downsizing, redundancy and organisational change (This not only includes adequate staff to ensure safe work during periods of shutdown maintenance, installation of new systems or machines, and takeovers and mergers, but also considers mental health risks associated with increasing workloads and the resulting impact on workpace and work stress[14]);

- Capital expenditure appraisals: Assessments explicitly consider issues such as safe design, safe layout and / or safety modifications (eg 'buy quiet' to reduce the risk of hearing loss among operators or building in funds for upgrades such as safety guards on purchase);

- Budget allocations: Budgets must provide adequate funding for those activities which foster safe work – e.g. routine maintenance to ensure vehicles and equipment are in good order, and adequate and effective training that heightens risk awareness (including awareness of how an individual's tasks connect with other roles and risks – see Case B) and engages workers in the overall pursuit of safe work.

By explicitly considering the WHS implications of strategic and financial change within routine decision-making processes, safety no longer stands as an organisational goal in competition for resources with other goals such as production. Instead it becomes an essential component of the production goal itself. Furthermore, this holistic approach better positions WHS risk within the organisational risk management framework.

5. Conclusion

The practice of accounting is not generally perceived as a physically hazardous occupation and accounting for WHS is not typically addressed in undergraduate, postgraduate or professional accounting education. Despite this, the legally enforceable duty of care and WHS due diligence obligations imposed by recent Australian WHS legislation on all officers of an organisation renders many senior accounting officers individually responsible, and accountable, for work health and safety governance. This review demonstrates how the officers' WHS due diligence requirements acknowledge the significant, albeit indirect, influence of accountants on the day-to-day reality of workplace health and safety and, more importantly, target specific accounting

[13] Safe staffing levels take into account typical patterns of sick leave and planned annual / other leave.

[14] Psycho-social illness (mental ill-health) resulting from work stress is one of the fastest growing areas of compensated illness. Recent studies suggest work-related depression currently costs the Australian economy approximately $730 million per year (LaMontagne and Sanderson 2010).

practices that have repeatedly been shown to obstruct WHS risk management efforts and contributed to the occurrence and reoccurrence of work-related fatality, injury and illness. The imposition of a legal duty of care on those accounting officers charged with oversight of resource allocation and performance management functions therefore appears justified.

Importantly, this paper illustrates the potentially tangible and significant implications that the routine decisions of accountants, financial controllers, chief financial officers, chief executive officers and directors have for the level of WHS risk facing others within an organisation. These actors are prominent in organisational responses to contemporary pressures of globalisation, advances in technology, management techniques and work processes. However, many of the strategies they promote to make workplaces more competitive and productive, changes such as downsizing, increasing hours of work, increasing work intensification (workload) and work pace, have simultaneously been associated with significant adverse impact on WHS risk[15] and increasing WHS failure cost. Consequently, a need for explicit consideration of the WHS risk implications of strategic and financial decisions cannot be overstated and WHS governance practices guided by an appreciation of the threshold concept of ensuring safe and healthy work has never been more important.

Further research currently underway at Macquarie University's IGAP Research Centre seeks to understand how this new WHS duty of care is interpreted by accounting officers and the processes through which WHS governance processes are operationalized. Additional research is also required to understand the extent to which contemporary accounting courses; undergraduate, postgraduate, and business education more generally, are seeking to educate accounting professionals about the health and safety implications of material financial decisions and accounting change processes. Overall, however, it would appear that a more holistic approach to the socially responsible practice of accounting may indeed actually save lives.

[15] These include repetitive strain injuries, psycho-social (e.g. stress) diseases, clinical depression, workplace violence, work-related fatalities and various other forms of employment-related injury and (Frederick and Lessin 2000; LaMontagne et al. 2010; LaMontagne 2012; Watson et al. 2003).

Figures

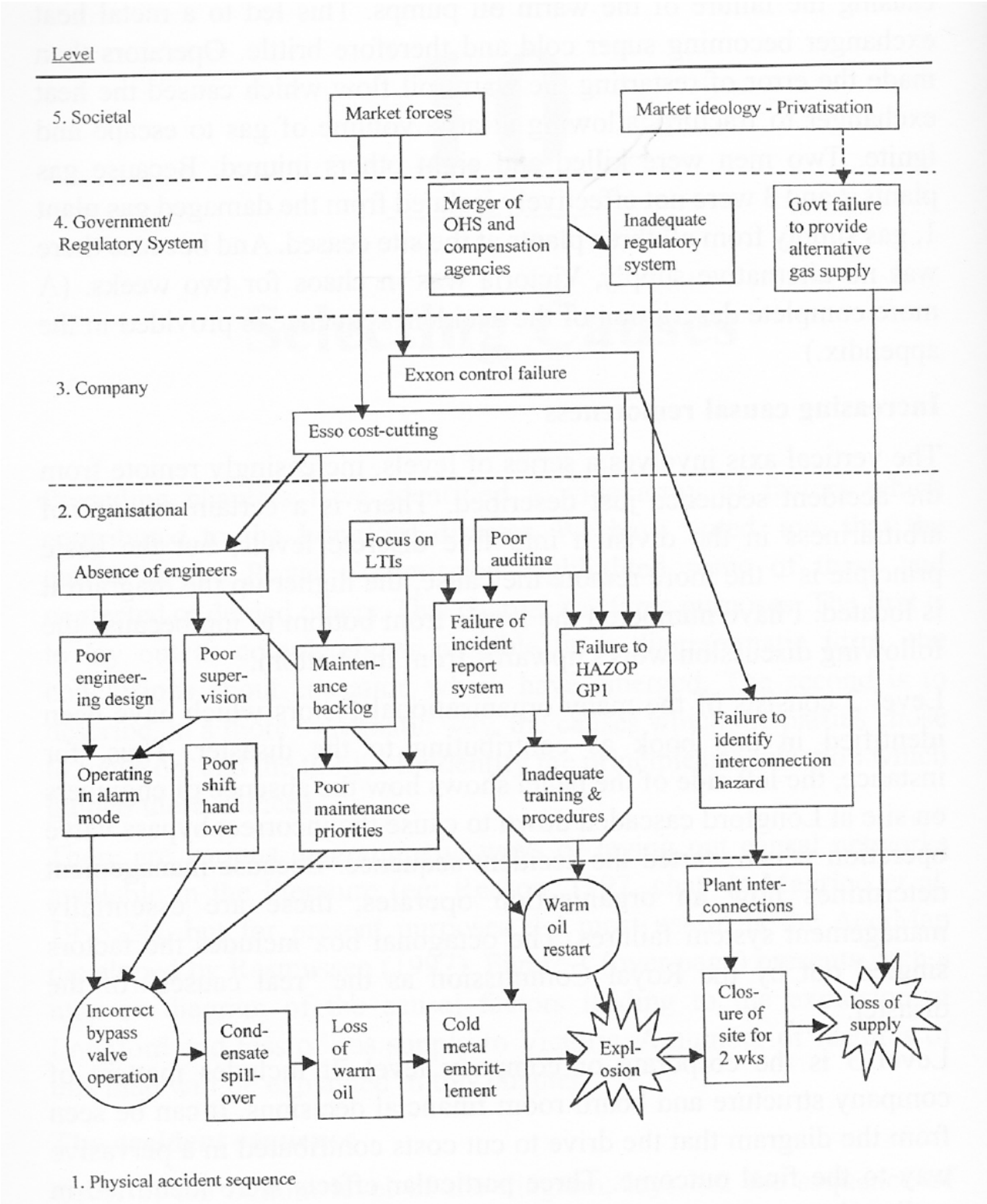

Figure 1: Causal diagram of the Esso Gas Plant Explosion
(Source: Hopkins 2000, p122)

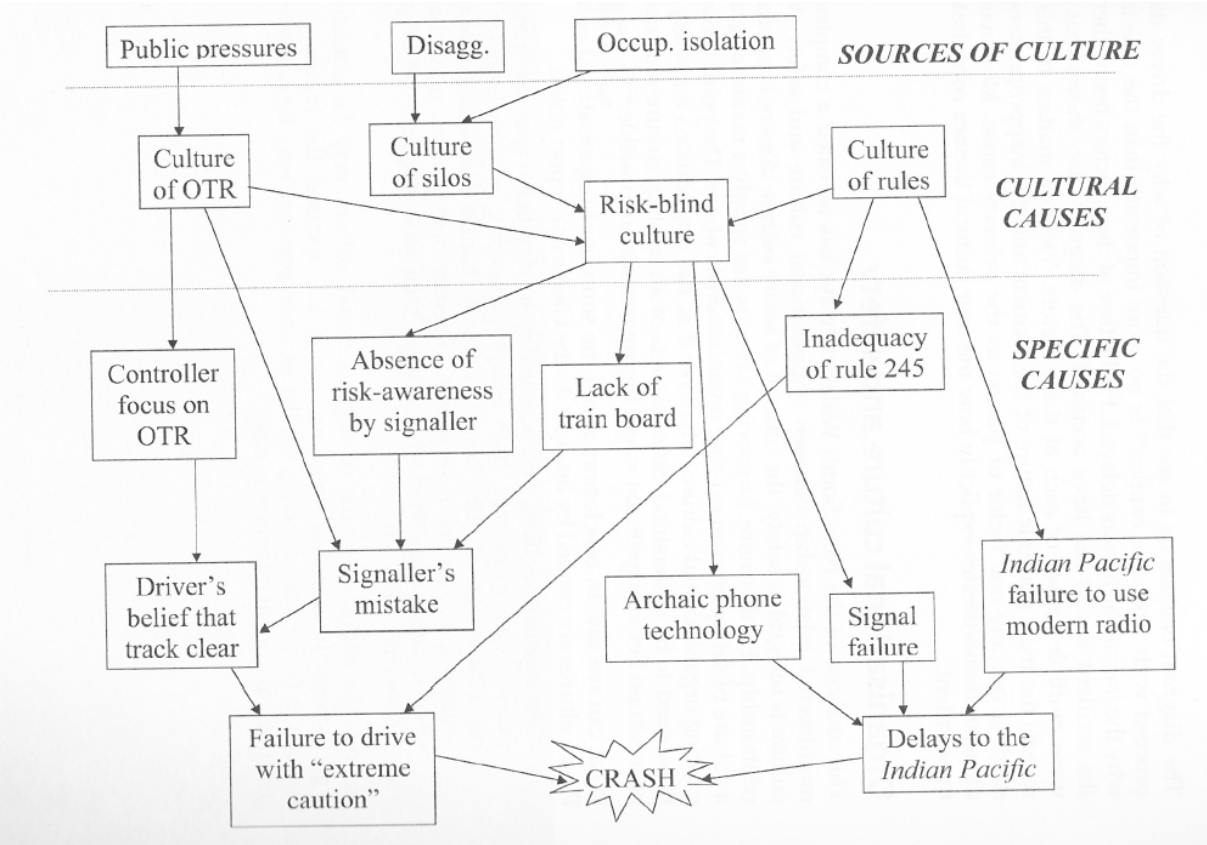

Figure 2: Causal Diagram of the Glenbrook Train Crash
(Source: Hopkins 2005, p77)

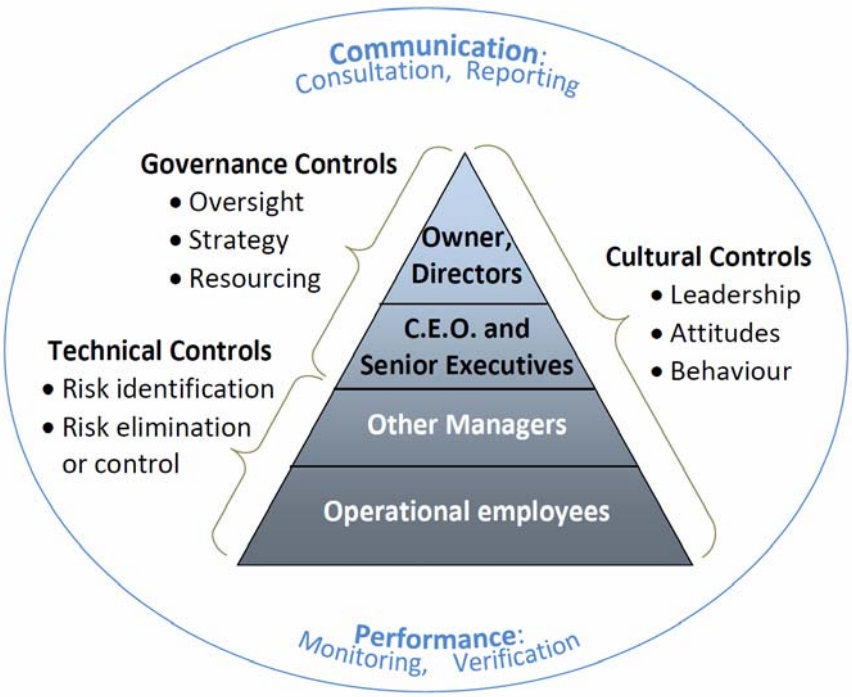

Figure 3: WHS governance framework

Appendix 1

Corporations Act 2001 (Extract)

Part 1.2, Division 1

Section 7…

[An] ***officer*** *of a corporation means:*

(a) a director or secretary of the corporation; or

(b) a person:

(i) who *makes, or participates in making, decisions* that affect the whole, or a substantial part, of the business of the corporation; or

(ii) who has the *capacity to affect significantly the corporation's financial standing*; or

(iii) in accordance with whose instructions or wishes the directors of the corporation are accustomed to act (excluding advice given by the person in the proper performance of functions attaching to the person's professional capacity or their business relationship with the directors or the corporation); or

(c) a receiver, or receiver and manager, of the property of the corporation; or

(d) an administrator of the corporation; or

(e) an administrator of a deed of company arrangement executed by the corporation; or

(f) a liquidator of the corporation; or

(g) a trustee or other person administering a compromise or arrangement made between the corporation and someone else.

References

(2001). Corporations Act. Australian Federal Government. Canberra.

(2010). Model Work Health and Safety Act. Safe Work Australia. Canberra.

Berger, Y. (2007). "Editorial: Lost at Work - Arms." Say Safety **Sept**.

Berger, Y. (2009). "All at Sea - An Historical OHS Lesson: The Piper Alpha Disaster - Productivity versus Safety." Say Safety **14**(2): 4-5.

Bluff, E. (2011). Something to Think About – Motivations, Attitudes, Perceptions and Skills in Work Health and Safety: A Review of the Literature on Socio-Psychological Factors and Their Influence on Organisations' and Individuals' Responses to Regulation. Safe Work Australia, Canberra.

Byard, P. (2006). Change for the Future, Not Blame for the Past. The Safety Conference, Sydney.

Cooper, C., A. Coulson, et al. (2011). "Accounting for Human Rights: Doxic Health and Safety Practices - The Accounting Lesson from ICL." Critical Perspectives on Accounting **22**(8).

Cousins, G. (2006). "An introduction to threshold concepts." Planet **17**(Dec): 1-5.

Davies, P. (2006). Threshold Concepts: How can we recognise them? in J. H. F. Meyer and R. Land, Overcoming barriers to student learning: threshold concepts and troublesome knowledge. New York, Routledge.

DeJoy, D. M., R. R. M. Gershon, et al. (2004). "Safety Climate: Assessing Management and Organizational Influences in Safety." Professional Safety **49**(7): 50-57.

Dutta, S. (2002). The Bhopal Gas Tragedy. ICFAI Centre for Management Research.

Ede, C. (2008). "Mans crushing death due to cost-cutting, union says". Herald Sun. Melbourne. 8 October.

Frederick, J. and N. Lessin (2000). "Blame the Worker: The Rise of Behavioral-Based Safety Programs." Multinational Monitor **21**(11): 10-17.

Gray and Kellock (2010) The Harmonisation of Australia's Occupational Health and Safety Laws: Implications for Directors, http://www.mallesons.com/publications/marketAlerts/2010/ [Accessed 15 July 2010].

Hopkins, A. (2000). Lessons from Longford: The Esso Gas Plant Explosion. Sydney, CCH Australia Limited.

Hopkins, A. (2005). Safety Culture and Risk: The Organisational Causes of Disasters, CCH Australia Limited.

Hopkins, A. (2007). Lessons from Gretley: Mindful Leadership and the Law. Sydney, CCH Australia Limited.

Hopkins, A. (2008). Failure to learn: the BP Texas City Refinery disaster, CCH Australia Limited.

LaBar, G. (1996). "Can Ergonomics Cure "Human Error"?" Occupational Hazards **58**(4): 48-51.

LaMontagne, A. D., K. Sanderson, et al. (2010). Estimating the economic benefits of eliminating job strain as a risk factor for depression: summary report. Victorian Health Promotion Foundation (VicHealth), October.

LaMontagne, T. (2012). "Psychosocial and other working conditions: Variation by employment arrangement in a sample of working Australians." American Journal of Industrial Medicine **55**: 93-106.

Lucas, U. and R. Mladenovic (2007). "The potential of threshold concepts: an emerging framework for educational research and practice." London Review of Education **5**(3): 237-248.

Meyer, J. H. F. and R. Land (2006). Overcoming barriers to student understanding: threshold concepts and troublesome knowledge. in. Abingdon, Routledge.

Reason, J. (1995). "A Systems Approach to Organisational Error." Ergonomics **38**(8): 1708-1721.

Reason, J. (1997). Managing the Risks of Organizational Accidents. London, Ashgate Publishing Ltd.

Reason, J. (2008). The human contribution: unsafe acts, accidents and heroic recoveries. Cornwall, Ashgate.

Safe Work Australia (2012) Interpretive Guideline - Model Work Health and Safety Act: The meaning of reasonably practicable. Safe Work Australia, Canberra.

Sherrif, B. and M. Tooma (2010). Understanding the Model Work Health and Safety Act. North Ryde, CCH Australia Limited.

Tooma, M. (2012). Due Diligence: Duty of Officers. North Ryde, CCH Australia Limited.

Turner, B. A. (1978). Man-made Disasters. London, Wykeham.

Watson, I., J. Buchanan, et al. (2003). Fragmented Futures: New Challenges in Working Life. Leichhardt, The Federation Press.