This article examines the relationship between two concepts that are central to Australian OHS legislation, the notion of ‘reasonably practicable’ and the principles of risk management. The article discusses the way in which the courts and OHS statutes have interpreted the notion of ‘reasonably practicable’, exploring, in particular, how the courts have interpreted the employers’ statutory general duties as requiring positive and proactive steps, including rigorously identifying, assessing and addressing risks. The article then examines the definition and interpretation of risk management principles under OHS legislation, identifying some weaknesses in the ways that these provisions are currently expressed and some potential areas of inconsistency with the courts’ interpretation of the general duties, and of what is ‘reasonably practicable’. The article concludes with some suggestions for ways to integrate these concepts within the general duty provisions, in order to make the relationship between the two concepts both explicit and consistent.

Introduction

This article examines two concepts which are central to contemporary standard-setting in occupational health and safety (OHS) regulation, and explores the differences and similarities between these concepts — the notion of ‘reasonably practicable’ which qualifies the ‘general duties’ and some other provisions in the Australian OHS statutes, and the risk management requirements typically found in OHS regulations and approved codes of practice.

The pivotal provisions in contemporary OHS statutes are the general duties which, in Australia, usually cover employers, the self-employed, persons in control of workplaces (occupiers), employees, principal contractors in the construction industry (in Queensland), designers, manufacturers, importers, suppliers, installers and erectors of plant, and manufacturers, importers and suppliers of substances. They impose on duty holders absolute or strict liability duties to take care for various aspects of worker health and safety. For
example, ‘employers’ are typically required to provide and maintain for employees a working environment that is safe and without risks to health — although the wording of these provisions differs markedly from jurisdiction to jurisdiction. In all of the OHS statutes apart from the Queensland Workplace Health and Safety Act 1995 (WHSA (Qld)), these absolute or strict liability duties are qualified by whether it is ‘reasonably practicable’ (‘practicable’ in Western Australia and the Northern Territory), to take particular measures to ensure worker health and safety. The WHSA (Qld) establishes absolute duties and provides that it is a defence to a prosecution for a contravention of a general duty for the duty holder to prove (on the balance of probabilities) that he or she followed the relevant regulation or code of practice, or, where there is no regulation or code of practice about exposure to a risk, that he or she chose any appropriate way and took reasonable precautions and exercised proper diligence to prevent the contravention. This latter expression is a recasting of the reasonably practicable expression.

As we discuss in the next section of this article, determining whether a measure is reasonably practicable requires the duty holder to weigh up the likelihood of the hazard or risk causing harm to a worker, and the gravity of that harm, against the cost, time and trouble of removing or reducing the risk. This ‘reasonably practicable’ calculus is not uncontroversial. Critics argue that balancing risk of illness or injury to the worker and cost of OHS measures to the employer is ‘inappropriate, because it does not involve a comparison of like with like’,¹ involves using ‘scales which are false’,² and because the calculus itself is often couched in terms that are unclear and difficult to put into practise.³

The skeleton statutory general duties are ‘fleshed out’ with standards in regulations and approved codes of practice. Before the 1990s, most of the OHS regulations in the Australian jurisdictions were contained in separate instruments, and it was not uncommon for a jurisdiction to have over a dozen sets of regulations, each covering a specific industry, type of work or hazard. Since the mid-1990s many of the Australian OHS regulators have brought all supporting OHS regulations together in one general set of regulations. Beginning in the late 1980s Australian regulations and codes of practice have tended to steer clear of detailed, technical specification standards and instead rely on general duty requirements (usually qualified by the notion of reasonable practicability), performance standards as well as process and documentation requirements. Instead of telling duty holders exactly how they are to achieve compliance, ‘performance standards’ define the duty holder’s obligation in terms of goals they must achieve, or problems they must solve, and leave it to the initiative of the duty holder to work out the best and most efficient method for achieving the specified standard. ‘Process requirements’ prescribe a process, or series of steps, that must be followed by a duty holder in managing specific hazards, or OHS generally. They are often used when the

³ See Maxwell, above n 1, Chs 10 and 11.
regulator has difficulty specifying a goal or outcome, but has confidence that the risk of illness or injury will be significantly reduced if the specified process is followed. Process-based standards have spawned, in turn, greater reliance on 'documentation requirements' as increasingly duty holders are required to document measures they have taken to comply with process-based, performance and general duty standards.4

A further development by the mid-1990s was the incorporation of the particular process of risk management in Australian OHS regulations in all jurisdictions, and in some approved codes of practice. The process requires the duty holder systematically to identify work hazards, assess risks and implement control measures to eliminate or minimise those risks. The OHS risk management process is a modified version of risk management principles applied more widely in business. The latter typically involve the holistic identification of hazards and other threats to an organisation or entity, analysis and evaluation of the risks, and determination of strategies to treat risks through risk avoidance, limitation, reduction, transfer, retention, deferment or mitigation.5 The form of risk management applied under Australian OHS legislation involves fewer process steps but elaborates the strategy of risk reduction, using a hierarchy of control measures which gives priority to controlling risks at their source by elimination, redesign, substitution, isolation or engineering means, in preference to administrative controls or use of personal protective clothing and equipment. In this respect, OHS risk management draws on the disciplines of occupational hygiene, safety engineering and ergonomics which adopt such a preferential approach to risk control.6 While in broad terms risk management is concerned with identifying, assessing and treating risks, it is a collective term applied to many different activities and approaches, to many different kinds of risks, and using variable terminology. Moreover, 'the recursive nature of terms such as “hazard” and “risk” and terms such as “assessment”, “analysis”, “estimation” and “evaluation” in everyday speech, creates fertile ground for ambiguity and confusion'.7 All of this suggests that OHS risk management principles could be difficult for duty holders to engage with, quite apart from the uncertainty about how the risk management process relates to the general duties.

Curiously, the OHS statutes in all jurisdictions apart from Queensland make no reference to risk management principles, and give no guidance as to the relationship between ‘reasonably practicable’ and risk management. Both processes appear to require duty holders to identify and weigh up risks and possible control measures, but it is far from clear exactly what is the

7 Waring and Glendon, above n 5, p 22.
relationship between these two processes. This apparent disjunction between ‘reasonably practicable’ and risk management principles reflects the distinct origins of each. The ‘reasonably practicable’ calculus emerged as a crucial qualification to the general duty provisions in Anglo-Australian OHS legislation which in turn came from the 1970s response to the United Kingdom Robens Report, while the central place of risk management principles in OHS regulation emerged in the ’next wave’ of the OHS regulatory debate beginning in the 1980s. A good example of the latter development is the 1989 European Union Framework Directive ‘on the introduction of measures to encourage improvements in safety and health of workers at work’. While UK OHS regulators have had to reconcile the risk management requirements of the EU Directive with their general duties qualified by ‘reasonably practicable’, Australian OHS regulators have progressively adopted risk management principles in legislation but are still to engage in an analysis of the relationship between the ‘reasonably practicable’ qualification to the general duties, and the risk management principles embodied in regulations and codes of practice and, in Queensland, in the OHS statute itself.

In the next section of this article we examine the way in which the courts and OHS statutes have interpreted the notion of ‘reasonably practicable’. A theme we explore is that in determining what is ‘reasonably practicable’ the courts have been influenced by the ‘event focus’ of prosecutions, in that charges are usually brought in response to particular incidents or risk scenarios and the evidence and argument focus on these events in hindsight, while the OHS risk management provisions are framed as a proactive and holistic process, to prevent or control risks arising from work or at a workplace, across the board, before incidents occur. In the third section of the article we discuss the general principles, legal definitions and interpretation of risk management processes. We examine the implications for OHS regulators, when drafting legislation and guidance material, to ensure that the statutory general duties and risk management obligations are framed and applied in a way that is complementary and consistent, and effectively support OHS improvements. We also sound a note of caution about the potential, in contemporary approaches to risk management, for a disproportionate focus on ‘risk assessment’, and in particular the ranking of risks, at the expense of comprehensive and effective prevention and control of risks.

10 See D Walters, ‘United Kingdom: From a Piecemeal Transposition to a Third Way’, in Walters, above n 9.
‘Reasonably Practicable’ — Legal Meanings

The common law ‘calculus of negligence’

The ‘reasonably practicable’ qualification is a statutory codification of ‘the calculus of negligence’ in common law negligence actions. To be successful in a common law negligence action against an employer, an employee must prove (i) that the employer owed the employee a duty of care; (ii) that the employer’s acts or omissions breached the standard of care required to discharge that duty to the employee; (iii) that the breach in fact caused the worker’s injuries, in the sense that, on the balance of probabilities, the defendant employer’s act or omission materially contributed to the harm suffered by the plaintiff employee; and (iv) that the injury or damage was not too remote, in that the damage was reasonably foreseeable as a consequence of the employer’s negligent acts or omissions. If these four elements are proved by the injured worker, the worker can then ask the court to award a ‘once and for all’ lump sum monetary compensation for economic and non-economic loss which will, as nearly as possible, put the worker in the same position as they would have been in had the worker not sustained the injuries. Proving that the duty owed was breached requires the court to determine, on an objective basis, first, whether the risk was one that the defendant should have considered taking measures to guard against; and second, the measures that a reasonable person in the position of the defendant should have taken to control the risk.12

In relation to the first issue — whether the risk was significant enough for a reasonable person in the defendant’s position to consider taking precautions against it — the test that the courts have laid down is whether a reasonable person in the defendant’s position would have foreseen, in all the circumstances of the case, that his or her conduct involved a risk of injury to the plaintiff or to a class of persons including the plaintiff. Here the courts have determined that a risk is ‘real’ and sufficiently foreseeable so as to require the defendant to consider taking precautions against it provided it ‘is not far fetched or fanciful’.13 At the same time, “[a] risk of injury which is quite unlikely to occur . . . may nevertheless be plainly foreseeable.”14 Negligence or inadvertence on the part of others, workers included, is generally considered to be reasonably foreseeable.15

The courts have made it clear that the plaintiff does not have to prove that the exact manner in which her or his injury took place was reasonably foreseeable — rather it is sufficient to show that ‘it was reasonably foreseeable as a possibility that the kind of carelessness charged against the defendant might cause damage of some kind to the plaintiff’s person’.16 It has generally

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13 Woyong Shire Council v Shirt (1980) 146 CLR 40 at 48 per Mason J, with whom Stephen and Aicken JJ agreed; 29 ALR 217.
14 Ibid, at CLR 47.
15 McLean v Tedman (1984) 155 CLR 306; 56 ALR 359; and see also Davies and Malkin, above n 12, pp 43–4.
16 Minister Administering the Environmental Planning and Assessment Act 1979 v San Sebastian Pty Ltd [1983] 2 NSWLR 268 at 296.
been accepted that this test for reasonable foreseeability is ‘undemanding’, and easily satisfied.\textsuperscript{17}

Recently, however, the courts, without altering the formulation of the test,\textsuperscript{18} appear to be more willing to find that a risk is too ‘far-fetched and fanciful’ and thus that a reasonable person would not be required to consider measures to control the risk.\textsuperscript{19} A good example is the recent decision of the NSW Court of Appeal in \textit{Australian Traineeship System and Colchester GR Pty Ltd v Wafra},\textsuperscript{20} where an employee injured his back while attempting to lift the corner of a display cabinet refrigerator (two metres long, a metre wide and weighing 65kg), so that he could replace, under the refrigerator, a mat he had cleaned.

The trial judge held that the injury was reasonably foreseeable, and that the employer was negligent in failing to warn the worker against attempting to lift the corner of the refrigerator. The NSW Court of Appeal overruled the trial judge, and held that a reasonable employer in the position of the defendant would not have foreseen that the employee would have tried unaided to lift the corner of the refrigerator. The court accepted that it might be reasonably foreseeable that the employee would replace the mat in exactly the same position it had been in before cleaning (at an angle, and partially under the refrigerator), rather than evenly within the available space. The court, however, held that a reasonable employer would not have foreseen that the employee would ‘attempt to place the mat under [the] corner of the refrigerator by lifting it himself’,\textsuperscript{21} because the refrigerator could be moved horizontally by pushing it along castors ‘without effort or risk’. ‘The obvious and foreseeable response was to attempt to move the refrigerator on its castors’,\textsuperscript{22} The court reached its conclusion by grouping ‘the various contingencies and possibilities’, holding that ‘it is almost far-fetched and fanciful to think that a reasonable employer should foresee that a plaintiff with some considerable experience in this industry, to the knowledge of the employer, should have attempted to lift [the] corner of the refrigerator’.\textsuperscript{23} So far as the court was concerned, ‘[t]he risk was so obvious and the alternative courses available to the plaintiff so obvious and simple that in my judgment the reasonable employer was entitled to disregard the risk’.\textsuperscript{24}

In passing we note that recent legislation,\textsuperscript{25} in response to the Ipp Report,\textsuperscript{26}

\textsuperscript{17} But see Smith v Broken Hill Proprietary Co Ltd (1957) 97 CLR 337 and Davies and Malkin, above n 12, at 46.
\textsuperscript{18} But see McHugh J in Tame v State of New South Wales (2002) 211 CLR 317; 191 ALR 449 at [102].
\textsuperscript{19} See, eg, the High Court of Australia in Koehler v Cerebos (Australia) Ltd (2005) 214 ALR 355; 139 IR 309; and the majority of the High Court in Dovuro Pty Ltd v Wilkins (2003) 215 CLR 317; 201 ALR 139, but note the dissenting opinion of Kirby J.
\textsuperscript{20} Australian Traineeship System and Colchester GR Pty Ltd v Wafra [2004] NSWCA 230 (unreported, 7 July 2004, BC200404314).
\textsuperscript{21} Ibid, at [12].
\textsuperscript{22} Ibid, at [13].
\textsuperscript{23} Ibid, at [15].
\textsuperscript{24} Ibid, at [16].
\textsuperscript{25} Civil Liability Act 2002 (NSW) s 5B(1); and Civil Liability Act 2003 (Qld) s 9(1).
now specifies that a defendant is not negligent in failing to take precautions against a risk of harm unless the risk was foreseeable and not insignificant (a higher threshold than the far-fetched and fanciful test). These provisions do not apply to employer-employee cases, but it may be that they nevertheless are influencing the way in which courts are applying the foreseeability test at the breach stage.

In relation to the second issue, Mason J in *Wyong Shire Council v Shirt* explained how a reasonable person would determine the standard of care, or measures that should be taken in response to the foreseeable risk:

The perception of the reasonable man’s response calls for a consideration of the magnitude of the risk and degree of the probability of its occurrence, along with the expense, difficulty and inconvenience of taking alleviating action and any other conflicting responsibilities which the defendant may have. It is only when these matters are balanced out that the tribunal of fact can confidently assert what is the standard of response to be ascribed to the reasonable man placed in the defendant’s position.  

This approach is known as the ‘calculus of negligence’. Thus, in determining what preventive measures a reasonable person would take, consideration is given to the magnitude of the risk and the probability of its occurrence, and this is weighed against the expense, difficulty and inconvenience involved in implementing particular preventive measures. Case law establishes that the employer owes a duty of care to each employee individually, and therefore the standard of care expected from the employer, as determined by the calculus of negligence, must be judged in relation to the circumstances of the individual employee.

A good example of the way in which courts ‘balance’ the level of risk against the burden of precautions in an employer-employee setting is to be found in *Turner v South Australia*. The employee injured his back while trying to lift manually, into a vertical position, a 44 gallon drum which had been placed on its side by a mobile crane. The High Court held that the employer had been negligent in providing an unsafe system of work. The risk that an employee might try to lift the drum on his own and injure himself was small, but the precautions required were simple and without cost — the mobile crane driver could have been required to place the drums on their ends, and not on their sides. However, once again we note that in the past few years the courts have begun to balance the factors in the ‘calculus of negligence’ in favour of defendants, based on an increased emphasis on ‘autonomy’ and ‘responsibility’.

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27 (1980) 146 CLR 40 at 47–8; 29 ALR 217.
29 *Paris v Stepney Borough Council* [1951] AC 367 at 376, 384, 386 and 388–90; [1951] 1 All ER 42; *Koehler v Cerebos (Australia) Ltd* (2005) 214 ALR 355; 139 IR 309 at [35].
31 See, eg, *Woods v Multi-Sport Holdings* (2002) 208 CLR 460; 186 ALR 145; *Cole v South Tweed Heads Rugby League Football Club Ltd* (2004) 217 CLR 469; 207 ALR 52 (but see also the strong dissenting judgments of McHugh and Kirby JJ); *Romeo v Conservation...*
The statutory qualification of ‘reasonably practicable’

The general duty in the OHS statutes draws heavily upon the common law standard of care, and closely resembles it. It is well established that the duties in the OHS statutes are absolute duties, and in the Commonwealth, New South Wales, Victorian, South Australian, Tasmanian and ACT OHS statutes this absolute duty is qualified by ‘reasonably practicable’. ‘Reasonably practicable’ was definitively defined by Asquith LJ in Edwards v National Coal Board:

‘Reasonably practicable’ is a narrower term than ‘physically possible’ and seems to me to imply that a computation must be made by the owner, in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other; and that if it be shown that there is a gross disproportion between them — the risk being insignificant in relation to the sacrifice — the defendants discharge the onus on them. Moreover, this computation falls to be made by the owner at a point of time anterior to the accident.

It is an ‘objective’ test — the question is not what the duty holder knew about the risk and measures to respond to the risk, but rather what a reasonable person in the position of the duty holder would have known and done in response to the risk. Considerations of cost do not depend on the financial circumstances of the particular duty holder. By way of illustration, Goff LJ in Austin Rover Ltd v Inspector of Factories noted that:

If, for example, the defendant establishes that the risk is small, but that the measures necessary to eliminate it are great, he may be held to be exonerated from taking steps to eliminate the risk on the ground that it was not reasonably practicable for him to do so . . . [The effect of the previously decided cases] is to bring into play foreseeability in the sense of likelihood of the incidence of the relevant risk, and that the likelihood of such risk eventuating has to be weighed against the means, including cost, necessary to eliminate it.

These English decisions have been confirmed by the Australian High Court. In Slivak v Lurgi (Australia) Pty Ltd, Gaudron J observed that:

The words ‘reasonably practicable’ have, somewhat surprisingly, been the subject of much judicial consideration. It is surprising because the words ‘reasonably

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33 [1949] 1 KB 704 at 712; [1949] 1 All ER 743.

practicable’ are ordinary words bearing their ordinary meaning. And the question whether a measure is or is not reasonably practicable is one which requires no more than the making of a value judgment in the light of all the facts. Nevertheless, three general propositions are to be discerned from the decided cases:

• the phrase ‘reasonably practicable’ means something narrower than ‘physically possible’ or ‘feasible’;
• what is ‘reasonably practicable’ is to be judged on the basis of what was known at the relevant time;
• to determine what is ‘reasonably practicable’ it is necessary to balance the likelihood of the risk occurring against the cost, time and trouble necessary to avert that risk.  

In sum, there is considerable similarity between the statutory qualification of ‘reasonably practicable’ and the common law calculus of negligence. Both concepts involve consideration of the magnitude and probability (or likelihood) of risk, which is weighed against the cost and difficulty of averting the risk. And although there are some differences in the factors weighed against risk (expense, difficulty and inconvenience vs cost, time and trouble) these are of a semantic nature.

‘Reasonably practicable’ and ‘practicable’ in the Australian OHS statutes

Under the Victorian, South Australian, Tasmanian, ACT and Commonwealth OHS statutes, the general duties are qualified by the expression ‘reasonably practicable’. Under the NSW Occupational Health and Safety Act 2000 (OHSA (NSW)), the general duties are unqualified but the defendant has the onus of proving that it was not reasonably practicable to comply with the relevant provisions of the Act. The NSW, Commonwealth, South Australian and ACT OHS statutes do not provide any guidance as to what is meant by ‘reasonably practicable’, and presumably rely on the now well-developed case law interpretations of the expression discussed above. Section 20(2) of the Victorian Occupational Health and Safety Act 2004 (OHSA (Vic)) provides that:

To avoid doubt, . . . regard must be had to the following matters in determining what is (or was at a particular time) reasonably practicable in relation to ensuring health and safety —

(a) the likelihood of the hazard or risk concerned eventuating;
(b) the degree of harm that would result if the hazard or risk eventuated;


36 See Chagg v Pacific Dunlop Ltd (1990) 170 CLR 249; 95 ALR 481.

37 OHSA (NSW) s 28.
(c) what the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or reducing the hazard or risk;
(d) the availability and suitability of ways to eliminate or reduce the hazard or risk;
(e) the cost of eliminating or reducing the hazard or risk.

The Western Australian and Northern Territory OHS statutes use the expression ‘as far as is practicable’, rather than ‘reasonably practicable’ — but define ‘practicability’ in similar terms to the Victorian statutory definition of ‘reasonably practicable’. For example, in the Northern Territory Work Health Act 1986, practicable, in relation to a hazard or risk, is defined as ‘practicable having regard to (a) its severity; (b) the state of knowledge about the hazard or risk and the ways of removing or mitigating it; (c) the availability and suitability of ways to remove or mitigate it; (d) the cost of removing or mitigating it’. The Western Australian Occupational Safety and Health Act 1984 (OSHA (WA)) illustrates the concurrence of the statutory definitions of ‘practicable’ and ‘reasonably practicable’ by conflating the terms in stating that ‘practicable’ means:

reasonably practicable having regard, where the context permits, to:
(a) the severity of any potential injury or harm to health that may be involved, and the degree of risk of it occurring;
(b) the state of knowledge about:
   (i) the injury or harm to health referred to in paragraph (a);
   (ii) the risk of that injury or harm to health occurring; and
   (iii) the means of removing or mitigating the risk or mitigating the potential injury or harm to health; and
(c) the availability, suitability, and cost of the means referred to in paragraph (b)(iii).

At first blush there could appear to be some differences between these statutory definitions of ‘practicable’ (in the Northern Territory and Western Australia) and ‘reasonably practicable’ (in Victoria), and the courts’ interpretation of ‘reasonably practicable’, particularly in regard to the specific references to ‘state of knowledge’ in the statutory definitions of ‘practicable’ and ‘reasonably practicable’. However, these differences are essentially semantic, and having regard to the state of knowledge about risks and ways of removing or mitigating them, are equivalent to determining what is or was ‘reasonably practicable’ on the basis of what was known at the relevant time. Thus determining what is ‘practicable’ and ‘reasonably practicable’ in

39 The term ‘reasonably practicable’ is itself a recasting of the definition of ‘practicable’ in the Victorian Occupational Health and Safety Act 1985 s 4. For a discussion of the ordinary meaning of ‘practicable’, see Maxwell, above n 1, pp 101–2; and for a discussion of the meaning of ‘practicable’ as defined in the Victorian Occupational Health and Safety Act 1985 s 4, see Maxwell, above n 1, pp 102–4; and Creighton and Rozen, above n 32, at 58–61.
40 See WHA (NT) s 28.
41 OSHA(WA) s 3.
42 Slivak v Lurgi (2001) 205 CLR 304 at 322–3; 177 ALR 585, and see Maxwell, above n 1, pp 102 and 105.
In accordance with the statutory definitions in these three jurisdictions involves a similar ‘weighing up’ process.

In Queensland, as in New South Wales, the defendant has the onus of proving that an offence was not committed, and s 37 of the WHSA (Qld) sets out defences where the obligations imposed by the general duty provisions have been contravened:

1. It is a defence . . . to prove —
   a. if a regulation or ministerial notice has been made about the way to prevent or minimise exposure to a risk — that the person followed the way prescribed in the regulation or notice to prevent the contravention; or
   b. if a code of practice has been made stating a way or ways to identify and manage exposure to a risk —
      i. that the person adopted and followed a stated way to prevent the contravention; or
      ii. that the person adopted and followed another way that managed exposure to the risk and took reasonable precautions and exercised proper diligence to prevent the contravention; or
   c. if no regulation, ministerial notice, or code of practice has been made about exposure to a risk — that the person chose any appropriate way and took reasonable precautions and exercised proper diligence to prevent the contravention.

Thus in Queensland, in the absence of a relevant regulation or other evidentiary standard, the benchmark for determining compliance with the duty of care is whether reasonable precautions were taken and proper diligence exercised. While the expressions ‘reasonable precautions’ and ‘proper diligence’ could also appear to be different from ‘reasonably practicable’, they are simply a recasting of the expression. The expression ‘reasonable precautions’ is similar to the common law standard of care which, in turn, is similar to ‘reasonably practicable’, while exercising diligence requires reasonable care, as determined in all the circumstances of the case. Thus, ‘reasonably practicable’, ‘practicable’ and ‘reasonable precautions’ and ‘proper diligence’ all involve a similar process of weighing preventive measures against degree of risk and, as various cases discussed further below illustrate, these terms have been treated in very much the same way.

Reasonably foreseeable and ‘reasonably practicable’

As we have noted earlier in this article, the OHS statutes set out absolute duties qualified by the concept of ‘reasonably practicable’ (or ‘practicable’ or ‘reasonable precautions’ and ‘proper diligence’). Decisions on the absolute nature of the general duties make it clear that ‘reasonable foreseeability’ is not an element of those absolute duties. For example, in *Drake Personnel Ltd v WorkCover Authority of New South Wales* the Full Bench stated that:

The concept of ‘reasonable foreseeability’ is not, in our view, apt to be applied in relation to the duties owed under the OH&S Act. The duties imposed by the Act are not merely duties to act as a reasonable or prudent person would in the same...
circumstances: see Carrington Slipways Pty Ltd v Callaghan (1985) 11 IR 467 at 469. Under [the employer’s general duty] the obligation of the employer is ‘to ensure’ the health, safety and welfare of employees at work. There is no warrant for limiting the detriments to safety contemplated by that provision, to those which are reasonably foreseeable. Whilst employers are not liable for risks to safety which are merely speculative or unduly remote (see Kirkby v A & M I Hanson Pty Ltd (1994) 55 IR 40 at 50), the terms of [the general duty] specify that the obligation under that section is a strict or absolute liability to ensure that employees are not exposed to risks to health or safety. It is inappropriate to seek to substitute a different test for that specified in [the general duty].

The Queensland Supreme Court made a similar point in Hardy v St Vincent’s Hospital Toowoomba Ltd. Issues of foreseeability are, however, taken into account in determining whether measures are (reasonably) practicable. In all jurisdictions, apart from New South Wales and Queensland, issues of whether measures are (reasonably) practicable arise as an integral part of the duty. In New South Wales they arise as part of the defence that measures were not reasonably practicable. In Queensland these issues arise if, in the absence of a regulation, ministerial notice or code of practice about exposure to a particular risk, the courts consider whether measures taken were reasonable precautions and whether proper diligence was exercised.

The Australian courts have held that qualifications of ‘reasonably practicable’, ‘practicable’ or ‘reasonable precautions’ and ‘proper diligence’ in the general duties do require the court to draw on common law concepts of foreseeability. For example, the Victorian Supreme Court in Holmes v Spence stated that the employer’s general duty is breached ‘if there were practical steps available to [the employer] which, although not taken, would have reduced the risk of foreseeable accident if they had been taken’. In Softwood Holdings Pty Ltd v Stevenson, the Full Court of the Industrial Relations Court of South Australia held that, in a prosecution for a breach of the employer’s general duty in s 19 of the South Australian Occupational Health, Safety and Welfare Act 1986 (OHSW A (SA)), the prosecution had to prove beyond reasonable doubt that there were deficiencies in the system of construction of the stack of stored timber at the defendant’s workplace, which rendered the stack unstable. According to the court, the prosecutor ‘had to prove beyond reasonable doubt that there was a reasonably foreseeable risk of injury. That is one that is real and not far-fetched.’ It would not be reasonably practicable to take measures against a hazard which could not have

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44 (1999) 90 IR 432 at 452.
45 [2000] 2 Qd R 19 at 22.
46 See the discussion of section 28 above.
47 WHSA (Qld) s 37(1).
48 But see the strong contrary view of Ormiston J in Chugg v Pacific Dunlop Ltd [1999] 3 VR 934 at 961, and 964–5, in relation to ‘practicable’ in the 1985 Victorian OHS Act (which was defined in similar terms to the definition of ‘reasonably practicable’ in the 2004 Act).
50 Softwood Holdings Pty Ltd v Stevenson (unreported, SA IRC, Jennings SJ, Cawthorne and Parsons JJ, No 489 of 1993, 24 November 1995).
51 Ibid, at 12; and see also Softwood Holdings Ltd v Stevenson (1996) 188 LSJS 482 at 484 per Prior J; WorkCover Authority of NSW v Kellogg (1999) 101 IR 239 at 259; Shannon v Comalco Aluminium [1986] 19 IR 358 at 363–4; Tenix Defence Pty Ltd v Maccarron [2003]
been known to be in existence. Most important, the courts have ruled that the test for ‘reasonable foreseeability’ is a broad one: the ‘question . . . is not whether the detail of what happened was foreseeable, but whether accidents of some class or other might conceivably happen, and whether there is a practicable means of avoiding injury as a result’. Further, the courts have ruled, in relation to the statutory definitions of ‘practicable’ discussed above, that the expression ‘state of knowledge of the hazard or risk’ must be determined ‘objectively’ (by reference to the knowledge in the industry, and in regulations, codes of practice, Australian Standards, other standards and articles in trade journals) and can take into account the subjective knowledge of the employer. The courts have also made it clear that in implementing its statutory general duty, the employer must anticipate that workers might be careless or inadvertent, and must take steps to prevent an employee from suffering injury as a result of the employee’s own negligence or inadvertence.

How the courts have interpreted reasonably practicable and practicable

Even though the notions of reasonably practicable and practicable appear to make use of an incongruous economic calculus which purports to try to balance the risks to worker health and safety on the one hand, and the practicability and cost of mitigating those hazards on the other, the case law on the interpretation of (reasonably) practicable suggests that the courts generally take a broad approach to the issue. Two good explanations of the way in which the courts address issues of reasonably practicable are provided by Holmes v Spence and Fletcher Constructions Australia Ltd.

In Holmes v Spence, Harper J observed that, in relation to ‘practicability’ under the 1985 Victorian OHS statute, for which the prosecutor bears the onus of proof:

The Act does not require employers to ensure that accidents never happen. It requires them to take such steps as are practicable to provide and maintain a safe...
working environment. The courts will best assist the attainment of this end by looking at the facts of each case as practical people would look at them: not with the benefit of hindsight, nor with the wisdom of Solomon, but nevertheless remembering that one of the chief responsibilities of all employers is the safety of those who work for them. Remembering also that, in the main, such a responsibility can only be discharged by taking an active, imaginative and flexible approach to potential dangers in the knowledge that human frailty is an ever-present reality. This, indeed, is an element in the equation which often turns what would otherwise be a positive result into a negative one — so that, for example, the minor but less obvious traps may present a greater actual danger than the major and more obvious ones. Any machine capable of trimming and planing wooden doors is also capable of trimming and planing the human anatomy. On the other hand, if the machine is to do its job on doors, those parts of it which trim and plane must be exposed to those doors. If they are exposed to doors, they will be exposed to humans who (for example) act spontaneously, or slip and fall, or panic.

One must then weigh the chances of spontaneous stupidity, or a fall, or the like, against the practicability of guarding the machine so as to maintain its function while preventing the human factor from resulting in injury. If the danger is slight and the installation of a guard would be impossibly expensive, or render the machine unduly difficult to operate, then it may be that the installation of that guard is properly to be regarded as impracticable. Each case must be decided on its own facts. In this context, however, it is helpful to refer to the definition of the expression ‘practicable’ in s 4 of the Act.

In each case must be decided on its own facts, bearing the above definition in mind.60

In Fletcher Constructions Australia Ltd, in discussing the defence in s 53(a) of the Occupational Health and Safety Act 1983 (NSW), that it was not reasonably practicable to comply with a general duty obligation, Walton J stated that, in order to make out the defence, the defendant had to ‘prove, on the civil standard, that it was not reasonably practicable for it to comply with its obligations under the Act by providing a safe system of work’.60 The court endorsed the following passages from the judgment in Cleary Bros (Bombo) Pty Ltd:

It is evident from [the] authorities that what is required by s 53(a) . . . is a balancing of the nature, likelihood and gravity of the risk to safety occasioning the offence with the costs, difficulty and trouble necessary to avert the risk. At one end of the scale, it could not be reasonably practicable to take precautions against a danger which could not have been known to be in existence. . . . Similarly, if the happening of an event is not reasonably foreseeable then it will not generally be reasonably practicable to make provision against that event . . .

At the other end of the scale, there will be cases . . . in which known or obvious risks to safety exist. In these circumstances, the defendant will not have established a defence under s 53(a) of the Act where it was reasonably practicable to have complied with the Act by ensuring that persons were not exposed to those risks. This may be the case because no measures were reasonably available or because measures which were available were not reasonably practicable. . . . [T]he assessment of the reasonable practicability of those steps requires a balancing of the quantum of the risk with the sacrifice (in money, time and trouble) in adopting the measures necessary to avert the risk. In my view, where there is a known risk which

59 (1992) 5 VIR 119 at 123.
entails the potential for serious injury to persons in the workplace, the defendant will generally have to demonstrate that the costs, difficulty or trouble occasioned by the measures significantly outweigh the risk. 61

Walton J observed that the test of reasonably practicable:

plainly calls for a balancing of the various interests of the particular employer in their particular circumstances against the stringent and explicit policy expressed in the Act to ensure that all places of work are safe and without risks to health and safety. . .[I]t must be kept firmly in mind that in order to establish a defence under s 53 a defendant must be able to show that it had done all that was reasonably practicable. This is how the balancing of interests . . . must operate. However, for a defendant to establish such a defence in the absence of a pre-established safe work method, would, in my view, at the minimum, require evidence of the particular or unique circumstances that made the establishment of a safe work method in advance of the activities being commenced, impracticable. By their nature, such situations would be rare. 62

The definition of ‘reasonably practicable’ in Edwards v National Coal Board 63 and the discussion of the concept above in Fletcher Constructions 64 suggest that the courts recognise that there should be ‘a transparent bias on the side of health and safety’ 65 and endorse a ‘gross disproportion’ test — that duty holders are obliged to take risk prevention measures unless the cost of preventive measures would be “grossly disproportionate” to the risk as assessed. 66

In sum, interpretation by the courts of the general duty provisions and (reasonably) practicable suggests that duty holders will need to adopt an active approach to identifying potential dangers and to assessing the severity and likelihood (probability) of risks arising. They can also be expected to determine suitable preventive measures and to implement these measures unless the cost, time and trouble of doing so significantly outweigh (is grossly disproportionate to) the risk assessed. They will also need to be mindful of human limitations and inadvertence in assessing and preventing or minimising risk. We note that decisions on these matters are not a management prerogative, as all of the Australian OHS statutes require employers to consult with worker representatives. (The consultation requirements are discussed further in the section of this article under ‘OHS Risk Management Principles’).

It is important to note that, in determining what is (reasonably) practicable, the courts are usually doing so in the context of an incident and thus take an ‘event focus’ considering, in hindsight, an alleged breach involving a

61 (2001) 110 IR 182 at [87] and [88].
62 Ibid, at [94].
63 [1949] 1 KB 704; [1949] 1 All ER 743.
64 (2002) 123 IR 121.
particular incident or risk scenario. Because of the event focus of prosecutions, traditionally the courts have not been concerned with what proactive steps might need to be taken by a duty holder to address risks more holistically, across a business or undertaking, for all work performed. Notwithstanding that constant focus, the courts are developing a more proactive systematic approach, as the cases we discuss in the next section illustrate.

The general duties and proactive management of risks

As noted above, in *Holmes v Spence* the Victorian Supreme Court stated that the employer’s general duty required the employer to take an active, imaginative and flexible approach to identify potential dangers. By the late 1990s it was common for the Australian courts to interpret the general duties as requiring positive and proactive steps to discharge the employer’s general duty. For example, in *Drake Personnel Ltd* the majority observed that ‘... a labour hire company is required by the OH&S Act [1983] to take positive steps to ensure that the premises to which its employees are sent to work do not present risks to health and safety ...’. In *Labour Co-operative Ltd*, a Full Bench of the NSW Industrial Relations Commission upheld the trial judge’s finding that it was reasonably practicable for the labour hire company to have ensured against the occurrence of risks to the worker’s safety by ‘adopting a positive and pro-active approach with [the client] to require steps to be put in place to avoid the risks as a condition of it making available’ the services of the worker. The labour hire company had sufficient control to ensure the adequacy of instruction, training and supervision, and could refuse to supply its employees to the client ‘until appropriate and sufficient measures to ensure safety were implemented’.

Other decisions have confirmed that employers must take a proactive approach to OHS. So, for example, Hill J in *Atco Controls Pty Ltd* observed that:

This case is yet another illustration of the need for employers to exercise abundant caution, maintain constant vigilance and take all practicable precautions to ensure safety in the workplace. It is essential that the approach should be a pro-active and not a reactive one; employers should be on the offensive to search for, detect and eliminate, so far as is reasonably practicable, any possible areas of risk to safety, health and welfare which may exist or occur from time to time in the workplace.

Similarly in *Kennedy-Taylor (NSW) Pty Ltd* it was held that a failure to assess risks properly was a contravention of the employer’s general duty in the 1983 OHSA (NSW). The Full Bench of the NSW Industrial Relations Commission stated that:

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67 (1992) 5 VIR 119 at 123.
70 See also *WorkCover Authority of New South Wales (Inspector Legge) v Coffey Engineering Pty Ltd (No 2)* (2001) 110 IR 447.
71 *WorkCover Authority of NSW (Inspector Egan) v Atco Controls Pty Ltd* (1998) 82 IR 80 at 85.
The appellant should have been aware of all of the factors that might impinge on the safety of its employees using the trafficable ceiling. This flows from the duty to ‘ensure’ the safety of its employees at work. The appellant had a duty to make a proper and comprehensive assessment of the risks to its employees associated with using the trafficable ceiling as a walkway. It is no defence for the appellant to say it was not aware of the construction work that might adversely affect the trafficable ceiling or it was not aware that the dust wall was to be removed at a time when its employees would be using the ceiling. Proper inquiry by the appellant . . . would have revealed the nature of the risk. . . . In failing to carry out a risk assessment the appellant exposed its employees to the risk of the construction work adversely affecting the structural integrity of the trafficable ceiling.72

According to Marks J in Milltech Pty Ltd the defendant employer was required by the employer’s general duty provision:

to create a system of work which eliminates risks of injury to employees. All tasks must be assessed to ensure the system of work allows no risk of injury. . . . It was not sufficient for . . . the employer to leave the responsibility for carrying out this task safely to be assessed by workers carrying out the task on the spot. They did not exercise the necessary foresight and vigilance to avoid any undue risk to the health and safety of persons who may have been affected by the task.73

In Fletcher Constructions Australia Ltd,74 Walton J (with whom Wright P agreed) held that the ‘system of work must be “coherent and systematic” so that all employees who are performing work on any given site can properly understand what is being required of them.’ The same judge in Warman International75 concluded that while the defendant had taken ‘elaborate and extensive steps to ensure occupational health and safety at the workplace’, they had not established ‘a system for the assessment of risk in relation to the work practice in question prior to the incident’. Similarly, in Bros Bins; Exo76 he held that these firms should have taken ‘a structured or systematic approach to safety in everything which is touched by’ their operations.77

Some commentators have suggested that the courts’ new emphasis on proactive, holistic and systematic assessment of risks implicitly requires a risk management approach.78 Certainly some cases have explicitly asserted that risk management is required. In The University of Sydney case, Hill J concluded that:

73 WorkCover Authority of NSW (Inspector Robinson) v Milltech Pty Ltd [2001] NSWIRComm 51 at [18]–[21].
74 (2002) 123 IR 121 at 149.
75 WorkCover Authority of New South Wales (Inspector Lyons) v Warman International (2001) 105 IR 236 at [73].
76 Inspector Ching v Bros Bins Systems Pty Ltd; Inspector Ching v Exo Pty Ltd v/s Tibby Rose Auto [2004] NSWIRComm 197 at [32].
77 See also Mainbrace Constructions Pty Ltd v WorkCover Authority of New South Wales (Inspector Charles) (2000) 102 IR 84 at 100; and WorkCover Authority of New South Wales (Inspector Yeung) v Thiess Pty Ltd [2003] NSWIRComm 325 at [39].
In my opinion it is a policy and an underlying objective of the Act that an employer should have in place an effective risk management system. Such a system is not, in terms of the legislation and its objects, simply a matter of ‘responsive’ action to risks which have in fact been demonstrated to exist. Rather, it must be a system of searching for and identifying all possible risks and then instituting reasonable and appropriate safety measures which will, so far as practicable, guard against those risks.79

This emphasis on the risk management approach was repeated in *Kembla Cole and Coke*, a Department of Mineral Resources prosecution under s 16 of the 1983 OHSA (NSW) concerning an explosion at the firm’s Coal Cliff colliery, Walton J stating:

The system of effective risk management required by the Act is not met merely by responsive actions to a risk which had been demonstrated to exist. There must be a system of searching for and identifying all possible risks and instituting safety measures to guard against those risks.80

‘Risk management’ is also apparently a concept which has currency in industry, being frequently mentioned in evidence presented on behalf of defendants, about their OHS programs.81

Rather curiously, however, the trend is for the prosecution in laying charges under the statutory general duties, and the courts in determining cases, to identify failures in conducting a ‘risk assessment’ rather than failure to apply a ‘risk management’ approach, that is, a fuller process of hazard identification, risk assessment and risk control. For example in *DPP v Esso Australia*82 the charges included Esso’s failure ‘to conduct any adequate risk assessment’ of the gas plant. The charge was proved and a fine of $150,000 was imposed by the court. Likewise a series of New South Wales cases include a charge relating to failure to conduct risk assessment (or to conduct one adequately),83 and in several South Australian prosecutions the particulars of the charge

79 WorkCover Authority of New South Wales (Inspector Kelsey) v The University of Sydney [1997] NSWIRComm 44 at 21.
80 Department of Mineral Resources of NSW (McKensey) v Kembla Coal and Coke Pty Ltd (1999) 92 IR 8 at 27; and see also Presdee v Commonwealth Bank of Australia (2001) 121 IR 246 at 248; and WorkCover Authority of New South Wales (Inspector Glass) v Qantas Airways Ltd (2002) 119 IR 8.
82 (2001) 107 IR 285 at [16].
include failure to carry out (or adequately carry out) ‘hazard identification and risk assessment’.84

The reasons for highlighting the particular process step of ‘risk assessment’ (hazard identification and risk assessment in the South Australian cases), rather than the full ‘risk management’ process are unclear. In one earlier case, Stevenson v CSR Wood Panels, the court indicated that the need to avoid duplication might be a reason. In that case the defendant was prosecuted for breach of the employer’s duty of care,85 as well as for a breach of reg 6 of the manual handling regulations, in regard to its failure to identify and assess risks involved in the task of lifting and moving 50kg bags of ammonium sulphate.

Magistrate Cunningham stated that:

In the construct of the regulations, Regulation 6 [identification and assessment of risks], leads immediately to a consideration of Regulation 7, which requires that, if a manual handling task is assessed as being a risk to health and safety, the employer must take such steps as are reasonably practicable to control the risk. In the context of the charges before me, however, the prosecution has in terms declined to lay any charge under Regulation 7. Had any such charge been laid, it would have duplicated, substantially, inevitably and in its very wording, the charge which was offered under section 19 of the Act.86

It might also be, in the more recent cases invoking ‘risk assessment’, that the term is being used as a kind of ‘short hand’ for the fuller process of identifying hazards, assessing risks, and determining and implementing risk control measures.

A further possible explanation, and perhaps the most likely reason for the emphasis on ‘risk assessment’, is that as determining whether the statutory general duties, qualified by (reasonably) practicable, have been complied with requires consideration of the nature and severity of risks, failure to carry out (adequate) risk assessment can be readily accommodated in such charges under the general duties. This seems to be the approach taken by Wright, Hungerford and Boland JJ in Mainbrace Constructions, in observing that:

Specific (b) alleges a failure to carry out a risk assessment of the structural integrity of the ceiling and the potential effects upon such integrity of the removal of the dust suppression wall. Although there is no specific requirement in s 16(1) to carry out a risk assessment there is a strict duty on the employer to ensure that persons not in the employer’s employment are not exposed to risks to health and safety. If one means of fulfilling this duty was to assess the risks to health or safety in the conduct of an undertaking then a risk assessment cannot be objectionable.87

Similarly, in Dell v TAFE Commission Boland J concluded that ‘where an employer is required to ensure the safety of workers, a risk assessment for the purpose of identifying hazards is an essential step that must be taken by the

85 OHSWA(SA) s 19.
87 Mainbrace Constructions Pty Ltd (2000) 102 IR 84 at [66].
employer, especially where the workers are to perform a task that is out of the ordinary or in a different environment to what they may have been used to.\textsuperscript{88}

The possible explanations we have put forward for the particular emphasis on risk assessment, rather than the full risk management process, are not mutually exclusive. They all suggest that there is an inter-relationship between assessing risks and complying with the general duties, qualified by (reasonably) practicable, although the precise nature of that relationship is not made explicit in the statutory general duties.

While in a number of the cases referring to risk assessment this reference is quite brief, with no clarification of what is expected of the duty holder, some cases do shed light on what the courts expect in conducting risk assessment. The indications are that risk assessment should be a rigorous process of gathering information in order to understand the nature of the hazard(s), the mechanisms by which the hazard(s) could give rise to injury or ill-health and the gravity of the risk. On the basis of such a risk assessment, the duty holder can then determine what preventive action is required. For example, in \textit{Mainbrace Constructions}, Wright, Hungerford and Boland JJ discuss the scope of the required risk assessment as follows:

\text{The evidence revealed . . . that the ceiling was unsafe. It was cluttered with equipment, overloaded by traffic and overweighted with absorbed moisture. There were loose pipes, chains and brackets and a collection of debris dirt and dust . . . Notwithstanding the fact that the appellant’s undertaking included the demolition of a wall that supported the ceiling, the appellant took no steps to assess how that whole undertaking might affect the integrity of the ceiling and whether there were any risks to persons above or below the ceiling.}

\text{. . . if there had been a proper and comprehensive risk assessment of the structural integrity of the trafficable suspended ceiling above the Hanging Area and of the potential effects upon such integrity of the construction and removal of the dust suppression wall, the risk would have been discovered and, in our view, remedial action could have been taken.\textsuperscript{89}}

The approach taken in the \textit{Mainbrace Constructions} case was endorsed in the prosecution of the \textit{Newcastle Wallsend Coal Company}, which concerned risks to health and safety arising in mining activities at the Gretley colliery, and in particular the inrush of water from old workings into 50/51 panel which resulted in the death of four workers. Staunton J stated that:

\text{there is no doubt that, given the nature of the risk, a proper and adequate risk assessment should have been undertaken in relation to the mining activity to be undertaken in 50/51 panel. . . Given that a risk assessment of the mining activity in 50/51 panel should have been undertaken, the question then is — did the failure of the defendant to undertake such a risk assessment for all or any part of the charge period cause the risk to safety as alleged? In my view, the answer must be yes. In coming to that view, I adopt the approach as expressed by the Full Bench in \textit{Mainbrace} at [73] making provision only for the differing facts in the matter before me.}

88 Dell v TAFE Commission [2005] NSWIRComm 104 at [18].
89 Mainbrace Constructions (2000) 102 IR 84 at [67]. [72].
the intention to leave a barrier. In identifying risk as being the risk of inrush from water and/or dangerous gases, the consequences of such a risk would have been identified as death or injury to workers. This would have highlighted as a risk prevention strategy the need to ensure that the depiction of the Young Wallsend old workings could be relied upon without question as to their accuracy.

The requirement to be satisfied as to that was paramount. Further, such a requirement would have, should have, put the defendant on notice as to the need to obtain every available piece of information relevant to those old workings. . . . The extent to which a proper risk assessment would have identified and prioritised the risk of inrush might not have been evident in such a process but, as was said in Mainbrace at [73] it ‘would have at least raised the issue in the mind of the assessor’.  

A similar approach to ensuring that risks are fully understood was taken in Bros Bins; Exo. In these proceedings the court heard concurrent charges which arose out of a fatality involving an industrial waste truck that was raised, for the purposes of repairs, by a hydraulic jib and held up by pneumatic hooks which failed. In this case Marks J stated that:

On the basis of the evidence given in these proceedings I am satisfied that neither Exo nor Bros Bins had undertaken any structured or systematic approach in the creation of a system of work and in the recognition and appraisal of risks associated with the circumstances in which, on 22 November 1999, rectification work was carried out on the truck in question at the premises of Exo. Whilst common sense might have dictated that a prop either be installed on the vehicle or utilised by Exo, there was certainly no evidence of any structured approach to the provision of a prop at the Exo premises. . . . It was the evidence of Mr Boulton that, to his knowledge, Exo had never worked on a vehicle of this kind previously. That fact of itself alone required that someone assess what needed to be done to ensure that the work could be carried out safely. Even if it could be said that it might have been sufficient to have relied on the fact that the jib was locked into place by the pneumatically driven hooks, it would nevertheless have been necessary to ascertain the circumstances in which the hooks might become disengaged. Furthermore, there needed to be an assessment of what would happen if the lever moved from its uppermost position to the next position down and as to whether this would have the effect of disengaging the hooks.

Further, the need for comprehensive assessment of risks is clear in Boland J’s comments in Inspector Green v Coffey and Cork, in discussing the inadequacy of risk assessment prior to an incident involving the collapse of a wall:

Mr Coffey’s direction to Mr Maxwell pales almost into insignificance when the defendant’s other failures are considered and which include the failure to make any assessment of the condition of the mortar joints or brick ties in the retained masonry walls, including the western wall, the failure to have proper regard to the fact the western wall was cracked, the failure to provide shoring, or to otherwise support the western masonry wall, the failure to provide proper or adequate supervision of Mr Maxwell, the failure to provide proper or adequate information in relation to the

90 McMartin v Newcastle Wallsend Coal Company Pty Ltd [2004] NSWIRComm 202 at [548]–[551].
91 Bros Bins; Exo [2004] NSWIRComm 197 at [33].
identification of the hazards (and safe work procedure for toothing works) and the failure to provide adequate training and instruction relating to hazards on the site.\footnote{Dell v TAFE Commission [2005] NSWIRComm 104 at [20]–[23].}

Additional illustration of the lengths to which duty holders should go to assess risks was also provided in \textit{Dell v TAFE Commission}. In this case which, as discussed above, involved an explosion triggered by welding activities in close proximity to an underground oxygen and acetylene reticulation system, Boland J observed that:

A risk assessment would have revealed a trench running across the quadrangle from the area where the oxygen and acetylene was stored . . . The trench was covered by concrete blocks and contained the pipes leading from the oxygen and acetylene bottles . . . A risk assessment would have raised the question in the mind of the assessor as to what was beneath the concrete blocks . . .

Not being able to see what was in the pit because the lid was too heavy (apparently its mass was 200kg) the assessor would have been left with no alternative than to either arrange for some lifting equipment, test for leaks or not allow the welding to proceed . . .

Now, if this seems onerous, unrealistic or idealistic, what was at stake was the health and safety of persons using welding equipment in close proximity to pipes carrying highly flammable acetylene gas. Given the obligation of the defendant to ensure that persons were not subject to risk there was a duty on the defendant to do all that was reasonably practicable to prevent exposure to the risk of an explosion.

In failing to carry out a risk assessment, the defendant merely assumed there was no risk. It did not actively search for the presence of risk.\footnote{The Relationship Between 'Reasonably Practicable' and Risk Management Regulation, Working Paper 27, National Research Centre for OHS Regulation, Australian National University, Canberra, 2004, p 21.}

Some further indications of the nature and importance of risk assessment are that: risk assessment of each task is part of ‘the basics’ of protecting health and safety, as it informs the development of a safe system of work and information and training for each task; the assessment process should take account of the knowledge and experience of those who will perform the work; the obligation to carry out risk assessment is an ongoing one; and a firm is not entitled to take on risk assessments undertaken by another business entity but must ensure that risk assessment is undertaken in relation to its own operations.\footnote{For an interesting series of cases, see Inspector Templeton v Twynam Investments Pty Ltd [2004] NSWIRComm 169 at [26]; Moore v Ottoway Engineering Pty Ltd [2002] SAIRC 7 at [6]; Milltech Pty Ltd [2001] NSWIRComm 51 at [15]; Loizidis v SA Sawmilling Pty Ltd [2001] SAIRC 31 at [11]; and see also E Bluff and R Johnstone, The Relationship Between 'Reasonably Practicable' and Risk Management Regulation, Working Paper 27, National Research Centre for OHS Regulation, Australian National University, Canberra, 2004, p 21.}
they fully understand the risks in particular work, and determine and take appropriate preventive measures on the basis of that assessment.

**OHS Risk Management Principles**

Some preliminary concerns

Our discussion so far suggests that the courts’ interpretation of the general duties qualified by (reasonably) practicable does incorporate a risk management approach, or at least the proactive and systematic assessment of risks. In the second part of this article we look at this relationship through the frame of the risk management provisions, firstly under the Australian OHS statutes and then particularly under the OHS regulations. We consider whether these provisions are consistent with the court’s interpretation of the general duties and (reasonably) practicable. In doing this, we also set these provisions against the wider literature on OHS risk management and ask whether there is anything else that OHS regulators should take into account when setting standards and drafting guidance material.

How risk management principles are expressed in the regulatory provisions and the guidance provided about their implementation are important questions because research suggests that duty holders have difficulty engaging with the risk management process and producing good quality OHS outcomes. A case in point is the Norwegian experience with regulations that require assessment of risks, followed by setting priorities and action plans, and implementation of OHS improvements. By 1999, 83% of Norwegian firms had completed assessment of risks but many had failed to ensure that their assessment was systematic, proactive and comprehensive in its approach. Rather, there was a tendency for firms to act on ‘burning’ issues; those where intervention was an immediate necessity because of injuries already occurring.95 Similarly, in Denmark, which also has regulations requiring workplace assessment of risks, research found that assessments were mostly concerned with problems already well known in the firms, tended to be superficial in their understanding of the causes of problems and failed to eliminate or control risks at the source.96 Crucial issues appear to be a need for organisational learning and development of a local understanding, amongst people at the workplace, about work environment risks. This local understanding is needed to equip firms to fundamentally re-examine established norms and old routines, to take a more expansive approach to recognising hazards and risks, and to develop and implement higher order OHS improvements.97

With these concerns in mind, we turn now to consider how OHS risk management is framed in Australian OHS legislation, and to explore further insights on risk management from the OHS literature.

97 Jensen (2001 and 2002), above n 96; Saksvik et al, above n 95, at 732.
Risk management in Australian OHS regulation

The Queensland Act is the only OHS statute expressly to invoke the risk management process. Section 22(2) of WHSA (Qld) provides that:

Workplace health and safety can generally be managed by —
(a) identifying hazards; and
(b) assessing risks that may result because of the hazards; and
(c) deciding on control measures to prevent, or minimise the level of, the risks; and
(d) implementing control measures; and
(e) monitoring and reviewing the effectiveness of the measures.

Section 29B, which came into force in 2003, also makes it clear that risk management is envisaged under the general duties owed by employers and persons who conduct a business or an undertaking. Section 29B provides as follows:

That obligations under ss 28–29A may include
Without limiting sections 28 to 29A (the ‘relevant sections’), an obligation under a relevant section may, having regard to the circumstances of any particular case, include 1 or more of the following —
(a) identifying hazards, assessing risks that may result because of the hazards, deciding on control measures to prevent, or minimise the level of, the risks, implementing control measures and monitoring and reviewing the effectiveness of measures

Thus, under the Queensland Act, risk management is a strategy that may be applied by employers and other persons who conduct a business or undertaking, in order to manage OHS, although the Act stops short of making risk management principles compulsory. However, the Act is supported by the Workplace Health and Safety Risk Management Code of Practice 2000 (WHSRMCOP (Qld)) and, as we discussed earlier, under the Queensland Act it is a defence to prove that the duty holder adopted and followed the way to manage risk stated in a code of practice. Thus, the duty holder would either need to implement the code of practice or demonstrate that they had chosen another appropriate way, and taken reasonable precautions and exercised proper diligence.

Managing OHS risks is mandatory under the OHS regulations in all jurisdictions. Apart from Victoria and the Australian Capital Territory, there is a generic requirement to manage risks arising from work or at the workplace. In New South Wales there is also an Approved Code of Practice

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98 WHSA (Qld) ss 28, 29 and 29A.
99 WHSA (Qld) s 37.
100 The relevant regulations are: Occupational Health and Safety (Commonwealth) (National Standards) Regulations 1994 (OHSR (Cth) (NS) r r 1.05–1.06); New South Wales Occupational Health and Safety Regulation 2001 (OHSR (NSW) rr 9–12 and 34–37); Northern Territory Work Health (Occupational Health and Safety) Regulations 1992 (WH (OHS) R (NT) rr 38 and 39); South Australian Occupational Health, Safety and Welfare Regulations 1995 (OHSWR (SA) rr 1.3.2 and 1.3.3); Tasmanian Workplace Health and Safety Regulations 1998 (WHSR (Tas) rr 17–19); Occupational Safety and Health Regulations 1996 (OSHR (WA) r 3.1).
Risk Assessment 2001 (ACOPRA (NSW)). In all jurisdictions there are further risk management requirements in relation to specific types of risks, for example, manual handling, hazardous substances, plant and machinery, confined spaces and some other hazards. ‘Risk management’ is consistently characterised as involving three essential steps of ‘hazard identification’, ‘risk assessment’ and ‘risk control’ although what is required in each of these steps varies between jurisdictions. In this discussion we focus on the generic risk management provisions in OHS regulations, the ACOPRA (NSW) and the Queensland code of practice. However, the general argument holds for the specific risk management provisions. We also provide some examples to illustrate requirements in relation to specific risks.

Responsibility for risk management and those to be protected

The generic risk management provisions typically apply to employers or, in a few jurisdictions, to other persons in control of workplaces or work processes. In particular, under the Queensland code of practice and the WA OHS regulations such obligations also apply to the self-employed, principal contractors and other persons in control of workplaces. Under the NSW OHS regulations persons in control of premises have such obligations, although they need only be concerned with the physical work environment, layout and condition of premises. Under the Tasmanian OHS regulations persons accountable for management or control of workplaces are responsible for risk management. In contrast, the specific risk management obligations may require that other duty holders, including designers, manufacturers or other upstream parties, engage in risk management. For example, plant regulations typically require each party in the supply chain from designer, to manufacturer, importer, supplier, installer and erector to engage in hazard identification, risk assessment and risk control.

Those to be protected through risk management are all persons who could be exposed to such hazards or a narrower group comprising employees and others 'legally at the employer’s place of work', or employees and others at the workplace/at work, or ‘worker[s] and any other person[s] who could be affected by the work’. Under the specific risk management obligations, upstream parties are required to take action to protect those who could be exposed to risk downstream, for example those who use or work with the plant or hazardous substance.

We would argue that an obligation to manage risks is equally applicable to any person with real control and influence over work, workplaces, equipment

101 ACOPRA (NSW).
102 WHSRMCOIP (Qld) p 4.
103 OSHR (WA) r 3.1.
104 OHSR (NSW) rr 9–12.
105 WHSR (Tas) rr 17–19.
107 WHSA (Qld) ss 28(3), 29(2) and 31(1); OSHR (WA) r 3.1; and WHSR (Tas) rr 17–19.
108 OHSR (NSW) r 9(1).
109 OHSWR (SA) r 1.3.2; OHS (Cth) (NS) r 1.05.
110 WH (OHS) R (NT) r 38.
and materials used at work, and should be applied for the protection of all persons who could be exposed to risk(s)\(^{111}\). This would also establish greater consistency between the generic and the specific risk management requirements, and would extend an obligation to manage risks to all persons to whom general duties apply.

Hazard identification

The Australian OHS regulations and codes define a hazard broadly as something with the potential to cause ‘harm’\(^{112}\) or something with the potential to cause ‘injury or illness’\(^{113}\), which may include damage to plant, property or premises\(^{114}\).

\(^{111}\) Bluff and Gunningham, above n 4, at 29–30.
\(^{112}\) OHSR (NSW) r 3(1); WHSRMCOP (Qld) cl 2.5.
\(^{113}\) OHSR (Cth) (NS) r 10.01(1); WH (OHS) R (NT) r 2(1); OHSWR (SA) r 1.1.5 (1); OSHR (WA) r 3.1.
\(^{114}\) WH (OHS) R (NT) r 2(1); WHSR (Tas) r 17.
Table 1: Types of hazards

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<th>Qld</th>
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<th>NT</th>
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</thead>
<tbody>
<tr>
<td>All hazards at workplace</td>
<td>Hazards arising from work premises, work practices &amp; systems, fatigue, shiftwork, psychological hazards, plant, haz substances, asbestos, manual handling, potential for overuse injuries, layout &amp; condition of workplace, lighting, work station design, biological organisms &amp; substances, potential for electrocution, drowning, fire &amp; explosion, slipping, tripping, falling, contact with moving or stationary objects, noise, heat, cold, vibration, radiation, static electricity, contaminated atmosphere, confined spaces, violence.</td>
<td>In relation to OHSW Regulations. The OHS regulations address amenities, floors, roofs, work space, confined spaces, electrical hazards, fire &amp; explosion, lighting, manual handling, noise, falls, remote or isolated work, traffic, materials storage, air contaminants, plant, hazardous substances, lead, asbestos, abrasive blasting, demolition, diving, electroplating, excavation, foundry work, logging, spray painting, welding, construction, mining &amp; petroleum work.</td>
<td>In relation to OHS (Cth)(NS) Regulations. These regulations address noise, plant, haz substances, manual handling, confined spaces, dangerous goods &amp; major hazard facilities.</td>
<td>Not specified — unlimited. Annotations to WHSR (Tas) r 17 identify examples of six main types of hazards.</td>
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</table>
As Table 1 indicates, the types of hazards to be considered may be quite broad. The Queensland code of practice\textsuperscript{115} and the NSW OHS regulation\textsuperscript{116} are most comprehensive in illustrating a wide range of types of hazards to be considered in the hazard identification stage of risk management. The OHS regulations in Western Australia, Tasmania and the Northern Territory are potentially as broad, requiring identification of all hazards.\textsuperscript{117} Although particular examples are not included in the regulations, the scope is not limited.

However, the South Australian and Commonwealth OHS regulations appear to be narrower in requiring hazard identification only ‘in relation to’ matters addressed by these regulations.\textsuperscript{118} While this covers a range of hazards, as summarised in Table 1, it appears to be more limited than the other jurisdictions. In particular, matters such as psychosocial factors, violence and bullying, shiftwork, fatigue, radiation, vibration, biological hazards, and broader work environment and ergonomic issues are not within the scope of regulations in these two jurisdictions. Likewise, the specific risk regulations in all jurisdictions apply to those risks as defined, for example ‘hazardous substance’, ‘plant’, ‘confined space’ and so on. Notably, the terms ‘plant’ and ‘hazardous substance’ are more narrowly defined than the terms ‘plant’ and ‘substance’ under the principal OHS statutes.\textsuperscript{119}

Thus, some of the generic as well as the specific risk management provisions focus duty holders’ attention on a range of hazards which is narrower in scope than the general duties in the principal OHS statutes. This is a concern for two reasons. First, if the statutory general duties are read down to a narrower range of potential dangers, ‘foreseeable’ hazards might be overlooked. As discussed above, the courts’ ‘undemanding test’ establishes that a duty holder must address a risk that is ‘real’ and sufficiently foreseeable, that is, one that ‘is not far fetched’ or ‘unduly remote’. Thus, risk management provisions in regulations and codes of practice should encourage attention to an equivalent range of hazards. A second concern is the need, in order to effectively prevent occupational fatalities, injuries and disease, to comprehensively recognise all possible sources of harm and the interactions between them. The nature of work performed, how work is organised, the type of plant, equipment and substances used, other aspects of the physical working environment, ergonomic factors, administrative practices, psychosocial factors and social relationships may all, individually or in combination, interact to cause occupational fatalities, injuries or ill-health.\textsuperscript{120} Moreover, OHS problems are often multi-layered and this complexity demands a rigorous approach to identify all factors contributing to occupational injury and ill-health.\textsuperscript{121}

To this end, we argue that duty holders should be required to identify all hazards arising from the conduct of their undertaking with the only

\textsuperscript{115} WHSRMCOP App 2.
\textsuperscript{116} OHSR (NSW) r 9.
\textsuperscript{117} OSHR (WA) r 3.1; WHSR (Tas) r 17(1); WH (OHS) R (NT) r 38(1).
\textsuperscript{118} OHSWR (SA) r 1.3.2(1); OHSR (Cth) (NSW) r 1.05(1).
\textsuperscript{119} For example, for a summary of different definitions of plant see Bluff, above n 106, at 231.
\textsuperscript{120} Bohle and Quinlan, above n 5, at 503.
\textsuperscript{121} Jensen (2002), above n 96, at 201–10.
qualification, if one is needed, being that these are reasonably foreseeable. Indeed, such an obligation to identify foreseeable hazards is reflected in the NSW OHS regulation.\textsuperscript{122} The Queensland code of practice is equally broad, advising the duty holder to ‘identify workplace hazards’,\textsuperscript{123} as are the NT OHS regulations which require the duty holder to ‘ensure appropriate measures are undertaken to identify all hazards from work’.\textsuperscript{124} The SA and Commonwealth OHS regulations also require identification of reasonably foreseeable hazards although the latter is limited to matters identified in the regulations (as we discussed above).\textsuperscript{125}

As a final observation on the scope of hazard identification, we note that the generic risk management regulations in two States require duty holders to identify hazards as far as ‘practicable’\textsuperscript{126} or ‘reasonably practicable’.\textsuperscript{127} We are baffled as to what this means. The intent probably is that the duty holder must make diligent efforts to identify hazards. However, it must be stressed that the expression (reasonably) practicable is not an appropriate concept when dealing with how far the duty holder is to go to identify hazards as it relates to preventive measures and not to earlier stages of decision-making about risk.\textsuperscript{128}

As well as a wider perspective on possible sources of harm, comprehensive hazard identification also demands ‘an active, imaginative and flexible approach’, in order to identify problems that may not be immediately obvious.\textsuperscript{129} While the traditional approach of a workplace inspection allows recognition of problems that can be observed at the time the inspection is carried out, other strategies are needed. This might involve consultation with workers, analysis of tasks and work roles, work environment or biological monitoring, surveys of worker experience, review of published sources and relevant regulatory requirements, as well as analysis of incident statistics and investigation reports.\textsuperscript{130} Such an approach is proactive in seeking out potential sources of harm but also takes account of past experience.

As Table 2 below indicates, the Queensland code of practice encourages the use of a range of hazard identification methods,\textsuperscript{131} while in other jurisdictions guidance material may advise on methods.

\begin{itemize}
\item \textsuperscript{122} OHSR (NSW) r 9(1).
\item \textsuperscript{123} WHSRMCOP cl 3.
\item \textsuperscript{124} WH(OHS)(R) (NT) r 38(1).
\item \textsuperscript{125} WHSR (Cth) r 1.05(1); OHSWR (SA) r 1.3.2(1).
\item \textsuperscript{126} OSHR (WA) r 3.1.
\item \textsuperscript{127} WHSR (Tas) r 17(1).
\item \textsuperscript{128} See the discussion above of reasonably practicable under ‘The statutory qualification of “reasonably practicable”’.\textsuperscript{126}
\item \textsuperscript{129} See Holmes v Spence (1992) 5 VIR 119 at 123.
\item \textsuperscript{131} WHSRMCOP (Qld) cl 3.2.
\end{itemize}
Table 2: Methods of hazard identification

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<tr>
<th>Qld</th>
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<th>NT</th>
<th>Cth</th>
<th>SA</th>
<th>WA</th>
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<tr>
<td>WHSRMCOP (cl 3.2) advises inspections, consultation, audit, testing, technical or scientific evaluation, analysis of incident &amp; other data, information from suppliers, environmental &amp; medical monitoring, worker surveys.</td>
<td>Guidance note to WHSR r 17 advises inspection, consultation, audits, job safety analysis, hazard analysis &amp; use of incident data.</td>
<td>Safety Management Guide advises: Methods of hazard identification: walk through survey, incident &amp; compensation data, consultation, observation of work practices, liaising with similar industry, use of NT WorkSafe checklists.</td>
<td>Not specified.</td>
<td></td>
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</tbody>
</table>

There is merit in all jurisdictions encouraging the use of a combination of methods to facilitate comprehensive hazard identification. However, we are not advocating a prescriptive approach to hazard identification. It is important that an ‘active and flexible’ approach is taken to determine methods suitable to the work situation.

We also note that OHS legislation in each jurisdiction deals specifically with worker consultation which may extend to the risk management process. We discuss these provisions below.

Risk assessment

The Australian OHS regulations and codes indicate that risk and its assessment is concerned with the ‘likelihood’ (or ‘probability’) of adverse outcomes arising and the severity of the consequences, or simply with the ‘probability’ of injury or harm. On face value this appears to be a somewhat different conceptualisation of risk from the approach taken by the courts. In determining negligence and in determining what is reasonably practicable the courts have taken a broad approach, considering the magnitude and likelihood of the risk. The OHS risk management provisions suggest that the magnitude of risk itself is determined by considering the potential consequences and the likelihood (or probability) of these consequences occurring.

It is unclear whether these differences in expression are real in the sense that they could have implications for how risk is assessed, or whether they are merely semantic. One explanation is simply that the assessment of risk is an area of considerable ambiguity. This is consistent with our earlier observation that the recursive nature of terms like risk and risk assessment in everyday speech is fertile ground for ambiguity. We note that a degree of ambiguity about risk is also apparent in the interpretation, by the courts, of reasonably

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132 OHSR (Cth)(NS) r 10.01; ACOPRA (NSW) cl 2.1; WHSRMCOP (Qld) cl 4; OHSWR (SA) r 1.1.5(1); WHSR (Tas) r 18.
133 WH(OHS)R (NT) r 2(1); OSHR (WA) r 3(1).
practicable. For example, Asquith LJ in *Edwards v National Coal Board*\textsuperscript{134} referred to the ‘quantum’ of the risk while Gaudron J in *Slivak v Lurgi*\textsuperscript{135} referred to the ‘likelihood’ of the risk. Clearly, neither risk nor its assessment is an exact science.

In all jurisdictions the generic risk management provisions require that risks be assessed for each identified hazard. However, as Table 3 below indicates, there appear to be some differences in the nature of risk assessment and the methods used to assess risk.

\textsuperscript{\textit{\textnormal{134}} [1949] 1 KB 704 at 712; [1949] 1 All ER 743.}  
\textsuperscript{\textit{\textnormal{135}} (2001) 205 CLR 304 at 332–6; 177 ALR 585.}
### Table 3: Methods of risk assessment

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<tr>
<th>Qld</th>
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<th>Cth</th>
<th>Tas</th>
<th>NT</th>
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</thead>
<tbody>
<tr>
<td>Various methods can be used as long as outcome of ‘prioritised list of risks for further action’ is achieved.</td>
<td>OHSA (NSW) s 15(a) requires consultation with employees. Approved code advises to identify work premises &amp; environment, competency, age &amp; work systems factors contributing to risk. Also advises to review reasonably available information from an authoritative source including: supplier’s information, Australian Standards, W’Cover info, technical reports, results of biological or atmospheric monitoring, incident data.</td>
<td>As far as is reasonably practicable determine a method that adequately addresses the hazards identified, including: inspections, audit, testing, technical or scientific evaluation, analysis of incident data, discussion with suppliers, quantitative hazard analysis.</td>
<td>As far as is reasonably practicable determine a method that adequately addresses the hazards identified, including: inspections, audit, testing, technical or scientific evaluation, analysis of incident data, discussion with suppliers, quantitative hazard analysis.</td>
<td>Must consider any relevant approved code of practice, or other standard, rule, code or specification relating to the hazard.</td>
<td>Safety Management Guide advises identifying potential adverse consequences for each hazard, estimating likelihood of harm if person exposed to hazard, considering number of people exposed &amp; how long.</td>
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The WA OHS regulations do not specify any methods for risk assessment and the intention not to require particular methods was confirmed in Joseph Lee’s case, in which the WA Industrial Relations Commission concluded that that

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State’s OHS regulations\footnote{In particular, OSHR (WA) r 3.1.} do not create a legal obligation for a particular form of assessment, in that case job safety analysis, to be undertaken although WorkSafe WA, as the State’s OHS regulator, does encourage the use of job safety analyses to achieve the aims of the regulations.

In contrast, the Queensland code of practice suggests the use of various assessment methods but makes it clear that the purpose is to develop a ‘prioritised list of risks for further action’.\footnote{WHSRMCP (Qld) s 4.} The code of practice applies descriptive scales to rate the magnitude of potential consequences as ‘extreme’, ‘major’, ‘moderate’ or ‘minor’.\footnote{WHSRMCP cl 4.2.} Similarly, the likelihood that those consequences will occur is rated as ‘very likely’, ‘likely’, ‘unlikely’ or ‘very unlikely’.\footnote{WHSRMCP cl 4.1.} These descriptors are then considered together to produce a risk ranking which may involve using a ‘risk assessment calculator’ (or tie line) to rank risks.\footnote{WHSRMCP (Qld) App 4.} The NT Safety Management Guide adopts a similar approach, indicating that the purpose of risk assessment is ‘to make decisions as to what hazards or risks need to be controlled and to set priorities for introducing controls’. Use of a ‘risk assessment table’ to rate likelihood and consequences, and to rank risks, is also encouraged.\footnote{SMG (NT), rr 11 and 13.}

There is a plethora of such qualitative approaches to ranking risks, as well as some semi-quantitative and quantitative methods which use numerical values rather than descriptive scales to analyse both the magnitude of consequences and the probability of these adverse outcomes.\footnote{See, eg, SA/NZS, above n 7, pp 17–19; Harms-Ringdahl, above n 130, at 45–54; SA WorkCover Corporation, _Dealing with Hazards — Risk Assessment Process_, SA WorkCover Corporation, Adelaide, 2004.} We raise two concerns about the use of these charts, tie lines, probability calculations and other risk ranking tools and methods. First, although all types of risk assessment tools or methods are intended to provide some ‘structure’ for determining the level of risk, all involve subjective and arbitrary judgments, and provide no absolute determination of risk. Unreliability creeps in, either in determining the descriptor or numerical values assigned to risk (qualitative and semi-quantitative analysis), or in selecting or processing incident and other data to use for analysing risk (quantitative assessment).\footnote{S Hansson, ‘The False Promises of Risk Analysis’ (1993) 6 Ratio 16; B Toft, ‘Limits to the Mathematical Modelling of Disasters’ in C Hood and D Jones (Eds), _Accident and Design: Contemporary Debates in Risk Management_, UCL Press, London, 1996, pp 99–110.} At worst, more time and effort may go into applying these methods than goes into determining or developing preventive measures. Second, while the courts have (as discussed above) begun to shift from the prosecution’s event focus to recognising the need for the proactive, holistic assessment of risk, it is unclear how they would treat the ranking of risks, particularly if a consequence of prioritising risks is that some are scheduled ‘to be addressed at a later date’, rather than implementing (reasonably) practicable preventive measures within a shorter timeframe.

The South Australian, Commonwealth, New South Wales and Tasmanian...
OHS regulations also suggest, as discussed above, that assessment of risk involves consideration of the likelihood (probability) and consequences of adverse outcomes. However, what is also interesting about the approach to risk assessment in these four jurisdictions is that the methods identified for assessing risks, namely inspection, audit, testing, hazard analysis, and use of technical evaluation or sources, incident data, supplier information, and so on, suggest the potential for a deeper inquiry into the nature of the hazards and risks arising from work. While such a risk assessment may well involve consideration of the severity and likelihood of adverse consequences, there is the potential at least for the assessment to be more than a risk ranking exercise and to enable risks to be identified, examined and fully understood with a view to determining the preventive action needed to eliminate or minimise those risks. Thus, the approach to assessing risks in these jurisdictions’ OHS regulations appears to be more consistent with the rigorous approach called for by the courts, as we discussed above, in determining compliance with the general duties. Indeed, the NSW code\textsuperscript{145} makes it clear that the purpose of the risk assessment process is to ‘identify the actions necessary to eliminate or control the risk’, as distinct from simply ranking risks.

In sum, we suggest that OHS regulators should consider carefully the emphasis placed in their codes and guidance materials on OHS risk management. A crucial issue is whether duty holders are encouraged to rank risks, putting their effort into estimating risk descriptors or numbers, or whether they are encouraged to understand those risks and to make well informed decisions about how to eliminate or minimise them.

As a final point on risk assessment, we note also that the WA OHS regulations require duty holders to assess risks ‘as far as (reasonably) practicable’, and that the South Australian and Commonwealth regulations require the duty holder to determine adequate methods for risk assessment ‘as far as reasonably practicable’.\textsuperscript{146} The use of (reasonably) practicable in the context of assessing risks is not appropriate as the term relates, as we discussed above, to determining preventive measures. We suggest it would be more appropriate simply to require duty holders, after identifying all reasonably foreseeable hazards, to then assess the particular risk associated with each identified hazard.

### Consultation

Crucial to fully understanding risks is the involvement of different perspectives in identifying and assessing those risks. There may be different perceptions of the nature of harm, the severity of effects and of what constitutes appropriate standards for risk control and communication of risk information.\textsuperscript{147} Since different understandings and perceptions of risk are a

\textsuperscript{145} ACOPRA (NSW) cl 2.1(iv).
\textsuperscript{146} OHSR(Cth)(NS) r 1.05(3); OHSWR (SA) r 1.3.2 (3); OSHR (WA) r 3.1.
fact of life, it is particularly important that workers, as those who are risk-exposed, are involved in risk management decisions.\textsuperscript{148}

Currently, under all of the Australian OHS statutes, worker health and safety representatives have general rights to inspect the workplace, to have information about hazards (or OHS matters) and to be consulted about changes to the workplace, plant and substances used, or the conduct of the work.\textsuperscript{149} While these rights might be applied in the context of hazard identification, risk assessment and risk control decisions, they do not explicitly apply to risk management. Only the NSW OHS statute expressly requires consultation in relation to risk management.\textsuperscript{150}

However, it is more common for subordinate OHS legislation to address consultation in relation to risk management. This is the case under the South Australian, Tasmanian and Northern Territory OHS regulations which require consultation with OHS representatives, committees and employees in relation to hazard identification, risk assessment and risk control.\textsuperscript{151} The Queensland code of practice also requires consultation in relation to each stage of the risk management process.\textsuperscript{152} The Western Australian and Commonwealth OHS regulations do not address consultation in relation to the generic risk management provisions. However, in all jurisdictions some of the specific risk regulations or codes of practice may mandate ‘discussion’ with employees or consultation with workers as part of the strategy for managing those risks. For example, discussion with employees is typically part of the risk assessment process for plant.

It would appear that the approach to consultation in the risk management process is somewhat piecemeal. In view of the importance of a participative approach to properly understanding risks and determining suitable risk control measures, we suggest that in all jurisdictions there should be a requirement to consult workers and their representatives in each stage of the risk management process.

**Timing of risk management**

As with the cases discussed above,\textsuperscript{153} the OHS literature also emphasises that successfully preventing occupational injury, disease and death requires that hazards are identified proactively and prevented or minimised, rather than reacting to incidents when they occur. In particular, the literature suggests the value of a ‘life cycle’ approach which requires management of risks in the phases of procurement or purchasing, design and planning, construction or manufacture, commissioning, start up and ongoing operations, shutdown,
service and cleaning, maintenance and repair, decommissioning or demolition. This means that while the phases will vary according to the risks, action should be taken across the life cycle of workplaces, work systems and organisation, plant and equipment, substances and materials, services and other aspects of work.

The generic risk management provisions in the Australian OHS regulations and codes of practice are less rigorous in their approach. In essence, risk assessment or risk management are to be undertaken when something changes at the workplace.

### Table 4: Timing of risk assessment or risk management

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<th>Qld</th>
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<tbody>
<tr>
<td>Ongoing &amp; when a change occurs at workplace, after an incident &amp; scheduled 'as appropriate' to the workplace.</td>
<td>Prior to first use of premises, before &amp; during installation, erection, commissioning or alteration of plant; before changes to work practices, systems; before substances introduced; while work carried out; when new information available from authoritative source.</td>
<td>Without limiting: before introducing new plant or substance, work practice or procedure, or before changing workplace, work practice, activity or process.</td>
<td>Without limiting: before introducing new plant or substance, work practice or procedure, or before changing workplace, work practice, activity or process.</td>
<td>As soon as reasonably practicable after commencement of regulations &amp; before introduction of plant, substance, work practice or procedure, or before changing workplace, work practice, activity or process.</td>
<td>Without limiting: before introduction of plant or substance, commencement of work not previously performed, when change in type of work, work practices or plant, when information becomes available.</td>
<td>Not specified</td>
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As Table 4 indicates, the types of changes signalling the need for risk assessment or risk management vary between the jurisdictions and include a

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requirement to take action after an incident, prior to first use of premises, before introducing new plant or substances, before changing work practices, and when new information becomes available (from an authoritative source). Thus, the generic risk management provisions do not invoke a full life cycle approach. However, some of the specific risk regulations do require more of a life cycle approach. This comes from the fact that responsibilities are placed on persons responsible for different functions including design, manufacture, import, supply, erection, installation and so on.

We suggest that there is room to develop the life cycle approach further in relation to the OHS risk management provisions, in view of the indications from the wider OHS literature of the value of such an approach in the systematic management of OHS risks. We also note, for the reasons already discussed, the inappropriate use of ‘reasonably practicable’, under the Tasmanian OHS regulations, in regard to the timing of risk assessment.

**Eliminating and controlling risk**

The provisions in relation to risk control are presented in Table 5, below. These typically involve prevention or elimination of risks, or minimising or controlling risks. In some jurisdictions (NSW, SA, Tas, Cth, NT) the obligation to control risks is qualified by what is (reasonably) practicable. The WA OHS regulations require consideration, as far as practicable, of the means by which risk is reduced. All jurisdictions, except Western Australia, require application of some form of hierarchy of control measures which, in general, includes, in order of priority, elimination, substitution, isolation, engineering controls, administrative measures and personal protective clothing and equipment.

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155 OHSR(Cth)(NS) r 1.05 (4); OHSR (NSW) r 9(3); WH(OHS)R (NT) r 38(2); WHSRMCOP (Qld) cl 2.2; OHSWR (SA) r 1.3.2 (4); WHSR (Tas) r 18(1).
156 For a discussion of the life cycle approach to risk management under the OHS regulations relating to plant see Bluff, above n 106, at 232.
157 WHSR (Tas) r 18(1).
158 OHSR(Cth)(NS) r 1.06; OHSR (NSW) r 11; WH(OHS)R (NT) r 39; WHSRMCOP (Qld) s 3; OHSWR (SA) r 1.3.3; WHSR (Tas) r 19; OSHR (WA) r 3.1.
Table 5: Risk control and the hierarchy of control measures

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<th>WA</th>
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<tbody>
<tr>
<td>Risk control</td>
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</tr>
<tr>
<td>Decide on control measures to prevent or minimise the level of risks.</td>
<td>Implement control measures which includes developing work procedures, communication, training &amp; instruction, supervision, properly maintaining &amp; used &amp; maintained.</td>
<td>Ensure risks are eliminated or, if not reasonably practicable, minimised.</td>
<td>As far as practicable consider the means by which risk may be reduced.</td>
<td>Ensure exposure to hazard controlled to eliminate or minimise risk.</td>
<td>Where assessment indicates significant risk, must identify steps to be taken to meet regulations. Must ensure that worker’s exposure to hazard is controlled to minimise risk.</td>
<td>Ensure risks are eliminated or, if not reasonably practicable, minimised.</td>
</tr>
</tbody>
</table>

Hierarchy of control measures

Eliminate hazard or if this is not possible substitute, redesign or isolate hazard. When exposure is not, or cannot be minimised by other means, introduce administrative controls & PPE. Use in combination to minimise risk to lowest level reasonably practicable.

Take measures (in order specified) to minimise risk to lowest reasonably practicable level: substitution, isolation, engineering controls (RP), admin controls (RP) & PPE.

Minimise risk by engineering controls (including substitution & isolation), so far as reasonably practicable (AFARP), substitution (AFARP), isolation (AFARP), engineering controls (AFARP), admin controls (AFARP) & PPE.

Control risk by elimination of hazard as far as reasonably practicable (AFARP), substitution (RP), isolation, admin controls (RP) & PPE. Use in combination to minimise risk to lowest level reasonably practicable.

Progressive application, risk by engineering controls (including substitution elimination, isolation), &/or admin means, admin means & PPE. (if above don’t minimise), &/or PPE (if above don’t minimise).
Applying a hierarchy of control measures is consistent with the wider OHS literature which emphasises a ‘safe place’ approach to risk control. This involves designing out or removing hazards at source and controlling any residual risks by engineering or organisational means. A safe place approach is considered more effective as it takes account of the human factor, aiming to neutralise the effects of the quirkiness and fallibility of human beings by making workplaces, work, equipment and substances inherently safer rather than relying on workers always being alert to and successfully avoiding risks.159 This is crucial as a variety of factors render safe behaviour strategies ineffective, including lack of awareness, human errors and mistakes, stress and fatigue, acting reflexively (‘automatic pilot’), giving priority to production or operational demands, protecting job security and simply ‘getting the job done.’160

At first blush, encouraging a safe place approach by invoking a hierarchy of control measures in OHS regulations and codes of practice could appear to be different from the general duty requirement to take (reasonably) practicable steps. As explained above, the latter involves implementing preventive measures that are proportionate to the risk. This could mean that lower order controls (personal protection or administrative control measures) are proportionate in lower risk situations, while applying the hierarchy of control would mean that a risk should be eliminated if this is possible. However, case law suggests that the courts expect duty holders to implement inherently safe measures, taking account of ‘the human factor’, and often calling for elimination of risk.161 Moreover, as Table 5 above indicates, in some jurisdictions the obligation to apply a hierarchy of controls is itself qualified by what is (reasonably) practicable. This probably means that, taking account of the risk assessment already undertaken, duty holders would have to weigh the cost, time and trouble of implementing particular preventive measures against the risk. In sum, it is likely that there is little room for difference between applying the hierarchy of control measures and eliminating or minimising risks as far as (reasonably) practicable. However, there is merit in making this explicit by integrating the two approaches in OHS legislation.


161 See Holmes v Spence (1992) 5 VIR 119 at 123; Atco Controls Pty Ltd (1998) 82 IR 80 at 85; Militech Pty Ltd [2001] NSWIRComm 51 at [18]; and WorkCover Authority of New South Wales (Inspector Childs) v Kirk Group Holdings Pty Ltd (2004) 135 IR 166 in which Walton J follows the case law establishing that an employer’s obligation to ensure OHS extends to protecting hasty, careless, inadvertent, inattentive or unreasonable workers (see at [128]–[129]).
Competency and organisational learning for risk management

Earlier in this article we outlined research suggesting that firms that lack OHS ‘know how’, or operate within narrow mental and organisational boundaries, are likely to delimit their activities and responses in OHS risk management.\(^1\)\(^6\) Clearly, developing the necessary knowledge, ability and motivation to produce good quality OHS outcomes through risk management requires the development of a solid, local understanding of OHS principles, underpinned by organisational learning. With this in mind, the silence of Australian OHS regulation on the matter of competency and organisational development for OHS risk management is striking.

No jurisdiction seriously addresses the expertise or competency required for undertaking OHS risk management. In Queensland, risk management is one of the functions of workplace health and safety officers (WHSOs) which are to be appointed by employers or principal contractors at prescribed workplaces, if 30 or more workers are employed at the workplace.\(^1\)\(^6\) The WHSOs may receive some training, but risk management activities are not confined to this group. The Tasmanian regulations require that risk assessment is undertaken by a ‘competent’ person.\(^1\)\(^6\) Under the Victorian OHS Act 2004,\(^1\)\(^5\) employers have a general responsibility to employ or engage suitably qualified persons to provide advice in relation to OHS but this obligation is broad and does not deal with specific competencies for OHS risk management. The generic risk management provisions in the other jurisdictions are silent on the matter of competency for OHS risk management. This is in striking contrast to the situation in the European Union where article seven of the Framework Directive (implemented through national laws) calls for employers to establish or to engage external occupational preventive services which have an important role to play in OHS risk management.\(^1\)\(^6\)

This is a crucial issue for OHS regulators to address. Clearly there is a case to consider how the necessary knowledge, skills and experience can be developed and the role of regulation in this. Also crucial is the role played by OHS regulators and OHS specialists in leading and supporting OHS risk management. In this regard our earlier comments about the nature and purpose of risk assessment, and the need to develop a rigorous approach to understanding and controlling risk are particularly relevant.

\(^{162}\) Jensen 2001 and 2002, above n 96; Saksvik et al, above n 95.
\(^{163}\) WHSA (Qld) ss 93 and 94.
\(^{164}\) WHSR (Tas) r 18(2).
\(^{165}\) Occupational Health and Safety Act 2004 (Vic) s 22(2)(b); and note that this obligation was also in place under OHSA (Vic) 1985.
Review of risk management

Ensuring that risks are effectively controlled requires follow through to check that preventive measures are applied, in working order and maintained.\textsuperscript{167} Only some of the generic risk management provisions currently require such follow through.

The review of risk assessment or risk management is addressed comprehensively under the Queensland code of practice which recommends monitoring and review of the effectiveness of risk control measures on an ongoing basis to ensure that they are in place, used correctly, working to eliminate or adequately reduce exposure and not resulting in new problems.\textsuperscript{168} Review of risk management is also required under the OHS regulations in New South Wales, Tasmania and the Northern Territory which link review to evidence suggesting that an assessment is no longer valid.\textsuperscript{169} The Queensland approach, recommending ongoing monitoring and review, appears to us to be the preferred approach as it is all too easy for even the best risk control measures to fall into disuse through lack of maintenance or lack of supervision.

As a final point, we note that the use of the expression ‘as soon as practicable’ in the Tasmanian regulations,\textsuperscript{170} in determining when to review risk assessments, is inappropriate as, for the reasons discussed above, the concept of practicability relates to preventive measures, and not to the timing of risk assessment.

Implications for Australian OHS Regulators

After examining relevant case law and closely scrutinising the OHS statutes, regulations and codes of practice, we draw the conclusion that the risk management provisions incorporated in Australian OHS legislation, while clearly having features in common with the general duties and what is (reasonably) practicable, also have some important differences in approach. We consider that, for the casual reader of the statutory general duties or risk management provisions, the relationship between the two concepts would be far from clear. In our view there is a need to make the relationship between (reasonably) practicable and risk management explicit and, as we have outlined, there are a number of ways in which the expression of the risk management provisions could be enhanced. This requires review of the way that both the general duties and the risk management provisions are framed.

To this end perhaps new provisions need to be inserted into the OHS statutes, to capture the essence of the courts’ interpretation of (reasonably) practicable, but that this rather ambiguous concept is no longer required as a qualification of the duties. Rather, risk management principles could be applied as a means of complying with the duties of care.\textsuperscript{171} We envisage that

\textsuperscript{168} WHSRMCOP (Qld) s 7.
\textsuperscript{169} OHSR (NSW) r 12; WHSR (Tas) r 18(3); WH(OHS)R (NT) r 38(4).
\textsuperscript{170} WHSR (Tas) r 18(3).
\textsuperscript{171} While the employer’s duties to employees and to others are key ones for the integration of risk management principles, the management of risks is equally applicable to a range of
duty holders would be required to identify all reasonably foreseeable hazards or risks that might arise from the conduct of their business or undertaking. However, a full risk management process would then only need to be applied in relation to hazards and risks for which there are not more specific standards. If a regulation or code of practice has been made about the way to eliminate or minimise exposure to a particular hazard or risk, these would be implemented directly as the means of complying with the relevant duty of care, rather than applying risk management principles.

Where there are no more specific provisions applying to particular hazards or risks, duty holders would need to implement risk management principles which, consistent with the earlier discussion in this article would involve:

(a) assessing the risk to health, safety or welfare of employees and other persons arising from each hazard, as the basis for determining the measures necessary to eliminate or minimise risks; (b) in determining giving preference to measures that eliminate or minimise risk at source, by redesign, substitution, isolation, engineering or organisational means risk control measures; (c) using safe work practices, administrative procedures, or personal protective clothing and equipment to supplement the other risk control measures determined; (d) implementing the relevant risk control measures unless the cost, time and trouble of doing so would be grossly disproportionate to the risk as assessed; and (e) maintaining, monitoring and reviewing risk control measures to ensure their effectiveness.

As we have discussed, the requirements relating to risk management would have to be implemented in consultation with relevant workers, in order to fully understand risks and determine effective and suitable control measures. A life cycle approach to risk management should be adopted whereby hazard identification, risk assessment and implementation or modification of risk control measures would be undertaken: (a) periodically in the ongoing operations of the business or undertaking; (b) in the planning, design, manufacture, procurement, construction and modification of work premises, plant, substances or materials for use at work; (c) before changes to work practices and systems of work are introduced; (d) prior to the shut down, decommissioning, dismantling or demolition of premises or plant; (e) when new or additional information becomes available from an authoritative source; and (f) when a hazardous exposure or incident, injury or illness, or adverse result of work environment monitoring or health surveillance indicate that risk control measures are inadequate.

Having clarified the relationship between the general duties and OHS risk management principles in the OHS statutes, we suggest there would then be a need to provide complementary guidance about the risk management approach. As observed above, different versions are currently set down in OHS regulations and codes of practice, and a consistent approach would aid understanding of duty holders about what is expected. Our earlier discussion highlighted a number of areas for improvement in the way that OHS risk management is carried out, and we propose that these matters could be dealt
with in a code of practice, supplementing the reformed general duties. In particular, such a code should address the development of the necessary knowledge, skills and experience for OHS risk management within organisations or the need to engage OHS specialists to lead and support this process. The code should also explain how different methods can be used, in different life cycle phases, to identify all reasonably foreseeable hazards; and should emphasise that the key purpose of risk assessment is to understand the nature of risks in order that well informed decisions can be made about suitable risk control measures. Crucially, the code should also provide guidance about the application of the ‘gross disproportion test’, and how the factors of cost, time and trouble are taken into account in determining risk control measures.  

In summary, duty holders would be guided to comply with their statutory duties of care by applying a problem solving approach which encourages proactive, systematic and comprehensive attention to all foreseeable hazards and risks. The approach would be flexible rather than formulaic, would emphasise the elimination and control of risks (rather than the ranking of risks), and would seek out opportunities to design or change work, work processes, equipment, substances and other aspects of the work environment to make them inherently safer and to ensure that they meet human needs.

172 For further details of provisions see the approach mapped out in Bluff and Johnstone, above n 89, pp 40–1.