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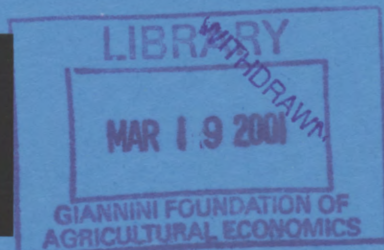

NEGLIGENCE 'IN THE AIR' AND NEW ZEALAND'S HEALTH AND SAFETY IN EMPLOYMENT ACT: A LAW AND ECONOMICS ANALYSIS

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Abstract

Given relatively weak industrial safety incentives in New Zealand's accident compensation legislation, an important development has been the Health and Safety in Employment Act 1992. In addition to penalties imposed in the event of accidents involving loss, the Act also imposes penalties where accidents or losses have not occurred. Ordinary negligence rules are *ex post* in that both an accident and loss must occur before liability accrues, whereas negligence-based *ex ante* liability rules hold agents liable for deficient care prior to such deficiency being manifested in an accident. This paper examines whether breaches of statutory duties which do not give rise to accidents have a useful incentive-enhancing role when used in conjunction with *ex post* negligence rules. It is argued that *ex ante* standards may usefully complement *ex post* liability rules where the latter are insufficient to induce appropriate levels of precaution due to the presence of errors in courts' decision-making processes. More strict standards than socially optimal precaution levels may be necessary since inspection probabilities and penalties are relatively low, while fines should be several times larger than expected accident costs resulting from deficient levels of care. The distribution of penalties emerging from the relevant case law is examined, and some, but not much, merit is found in continuing adherence to capped fines which in themselves further strengthens the case for stringent *ex ante* safety standards.

1. Introduction

New Zealand introduced legislation by way of the Accident Compensation Act 1972 which, by 1974, had effectively displaced the tort system for accidents involving personal injury. Notably, while the Accident Compensation Corporation ("ACC") had statutory responsibility to actively promote safety, it had no enforcement powers, so that its activities were limited to those of discussion, persuasion and motivation.

Opportunities to establish financial incentives for safety emerged when the Accident Rehabilitation and Compensation Insurance Act 1992 ("ARCI Act") was enacted. The ARCI Act restricted the concepts of personal injury and accident and excluded certain injuries, conditions, and circumstances from cover.[1] To the extent that exclusions were applicable, victims were not covered and if negligence was provable, victims could sue for damages. Nevertheless, the vast majority of potential common law tort claims involving personal injury remained barred.[2] For the broad majority of industrial injuries, the ARCI Act retained only two major potential financial incentives for industrial safety, viz, risk-classified premiums and exemplary damages.

Section 103 of the ARCI Act provided for classification of employers into various industry classes for premium setting. The industry classification used by the ACC, however, was based on the aggregation of 'similar' products and services rather than similar risks of work injuries. Consequently, there was significant pooling of heterogeneous risks, and with premiums based on average accident rates in these categories, a given firm had only a marginal effect on accident rates and, hence, on premiums. There was consequently a very limited incentive for any firm to invest in accident-prevention activities from this perspective. Further, while provisions for experience rating had been available since 1982, systematic rating whereby the basic premium for an employer was adjusted by reference to accident experience did not take place until s 104 of the ARCI Act was amended in 1993. Nevertheless, in the White Paper which preceded the enactment of the ARCI Act, explicit recognition was given to the equivocal nature of the available evidence regarding safety incentives induced by experience rating, and according to Department of Labour (1991, p.

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[1] For a detailed account, see Harrison (1992), and Rennie (1993). Lump-sum payments were also abolished, being replaced by independence allowances for greater than 10 per cent disability, and with a modest weekly maximum.

[2] For an account of the availability of private actions for damages under the ARCI Act, see Todd (1997, Chapter 2).

23), its introduction was largely justified on equity grounds. Finally, the introduction of the Accident Insurance Act 1998 largely served to partially privatise accident compensation, which feature was removed by the Accident Insurance (Transitional Provisions) Act 2000. The Accident Insurance Amendment Act 2000, however, provided for adjustments in premiums for individual employers depending on demonstrated safety management practices (s 281E), and also re-established employer accreditation agreements whereby employers meeting stringent safety criteria could agree to be liable for part or all of compensation liabilities resulting from their workplace injuries in exchange for a reduction in premiums (s 326D). How pervasive and effective are these provisions is yet to be seen.

The right to sue for exemplary damages, however, had always been available.[3] Exemplary damages are typically awarded in cases where levels of care are well below those consistent with an orthodox negligence standard, although they generally exceed compensatory damages.[4] The incentives created thereby, however, are limited in that if agents take a level of care barely sufficient to avoid liability for exemplary damages, the resulting care level will generally be inappropriately low.

Given relatively weak incentives for safety embodied in accident compensation legislation, an important development with respect to industrial accidents has been the Health and Safety in

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[3] For discussions of the application of exemplary damages, see Todd (2000, 447 – 56 and the references cited therein), and Miller (1997). Recovery of exemplary damages, however, is likely to be barred if a defendant has been subject to a prior criminal proceeding: *Daniels v. Thompson* [1998] 3 NZLR 22 (CA).

[4] *Donselaar v. Donselaar* [1985] 1 NZLR 43. Exemplary damages punish conduct that is "wanton and careless, and of a standard falling well below that of the reasonable man", typically being of an outrageous and contumelious nature, and where the damage awards reflect the nature of the conduct of the defendant. In *Somerville v. McLaren Transport Limited* [1996] 3 NZLR 426, [1996] 2 ERNZ 336, exemplary damages of $15,000 were awarded to a farmer injured by an exploding tyre as a result of his being involved in assisting an employee of a rural garage who knowingly pursued wrongful actions and for which the Court concluded that the conduct of the garage was grossly negligent and reckless.

Employment Act 1992 ("HSE Act", hereafter, "the Act"). The Act, which replaced what Carr and Sherriff (1996, p. 1) described as "untold regulations and statutes which had a prescriptive ("do this") and proscriptive ("don't do this") approach containing considerable detail and specificity", establishes general principles and statutory duties on both employers and employees to regulate workplace risks, with sanctions following from detection of substandard levels of care.

Part II establishes duties relating to safety and health in employment. In addition to a general duty to take all practicable steps to ensure the safety of their employees at work, employers are subject to particular duties in relation to the working environment. These focus on the provision and maintenance of facilities for the safety and health of employees at work, ensuring that machinery is safe and that employees are not exposed to hazards (s 6).

Sections 7 - 10 establish a hierarchy of actions in relation to significant hazards. Specific duties are established in relation to systems for identifying existing and new hazards and the monitoring of hazards (s 7), the elimination of significant hazards (s 8) and the isolation of workers from such hazards that cannot be eliminated (s 9). Where a significant hazard cannot be eliminated, and employees cannot be isolated therefrom, all practicable steps are to be taken to minimize the likelihood of harm (s 10).

The result is that it is the onus of employers to identify hazards and deal with them. Employers are required to provide employees with the results of monitoring (s 11), and are to be provided with information concerning work hazards, emergency procedures, potential hazards to others, and the location of safety equipment (s 12). Proper training and supervision is also to be provided (s 13).

The concept of "all practicable steps" is central to Part II of the Act, since most of an employer's duties are qualified by this phrase. The concept, however, is not identified with all feasible steps, and is qualified by employing the phrase "reasonably practicable" and defining this

by reference to the balancing of issues such as gravity of harm, degree of risk and cost of avoidance. In so doing, the definition appears to approximate an employer's common law duty in the law of negligence. It is arguable that the list of considerations relating to what is reasonably practicable reflects the standard of care in negligence. There is, however, strong authority for the proposition that despite the similarity of the concepts, direct comparisons between the statutory duty and the principles of negligence are of little value and the proper course is for the Court to apply the words of the statute.[5] The context provided by the legislation might require consideration of factors which would fall outside those relevant to a claim in tort, and the burden of proof is different. While the Courts have avoided any extended discussion of the differences between the test of reasonable practicability and the law of negligence, the weight of authority favours the proposition that the statutory test is more demanding than the corresponding test in negligence.[6]

Further, ordinary negligence rules are *ex post* in the sense that both an accident and loss must occur before any liability may accrue, whereas negligence-based *ex ante* liability rules hold agents liable for deficient care prior to such deficiency being manifested in an accident. In addition to penalties imposed under the Act on non-compliers in the event of accidents involving loss, the Act also provides for penalties in the event of non-compliance even where accidents have not occurred, or where losses have not been suffered. Such rules can be thought of as negligence 'in the air' in that liability for deficient care is not 'grounded' in an accident.

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[5] *Marshall v Gotham Co Ltd* [1954] AC 360, followed in *Cox v International Harvester Co of NZ Ltd* [1964] NZLR 376.

[6] *Powley v British Siddeley Engines Ltd* [1966] 1 WLR 729; *Trott v WE Smith [*1957] 1 WLR 1154.

In what follows, we focus on the question of whether breaches of statutory duties created by the Act but which do not give rise to actual accidents have a useful incentive-enhancing role when used in conjunction with *ex post* negligence rules. Section 2 reviews the efficiency of *ex post* liability rules under certainty. Section 3 examines the possible complementarity of *ex ante* and *ex post* liability rules when uncertainty surrounds legal interpretation of the required standards of precaution, while section 4 addresses the optimality of *ex ante* regulation. Section 5 considers the interpretation of *ex ante* safety standards implicit in the Act, and the appropriateness of these standards for inducing optimal precautionary decisions is discussed in section 6. The closely-related issue of penalties for negligence 'in the air' imposed under the Act are examined in section 7, and section 8 contains some concluding remarks.

We argue that *ex ante* standards may have an important role in complementing *ex post* liability rules where the latter are insufficient to induce appropriate levels of precaution due to the presence of errors in the decision-making processes of the courts. *Ex ante* standards can send a signal to employers as to the court's 'bottom-line' permitted level of precaution and so reduce the dilution in incentives to take care due to uncertainty surrounding the implementation of *ex post* liability rules. While the literature suggests that *ex ante* standards should be lower than corresponding socially optimal precaution levels, however, we argue that more strict standards may be necessary if, as is observed in the enforcement of the Act, the inspection probability is relatively low and penalties are set at relatively low levels. Given unchanged resources for detection of negligence 'in the air', we suggest that fines should be several times larger than the expected accident costs resulting from deficient levels of care. The distribution of penalties emerging from the relevant case law is examined, and we find little merit in the continuing adherence to capped fines which serve to bound penalties to relatively low levels. Continued

adherence to capped fines, however, further strengthens the case for stringent *ex ante* safety standards.

2. The Efficiency of Ex Post Liability Rules Under Certainty

We first review the efficiency properties of *ex post* liability rules under certainty in a unilateral-care framework in which only employers can vary their level of safety precaution, and where levels of employer activity (output and employment) are exogenous.[7] Employers and employees are both assumed to be risk-neutral. In what follows, it is assumed that with respect to actual accidents, the employer's statutory duties under the Act either closely approximate a standard negligence rule, or that the employer's behaviour is similar to that generated by such a rule. For the moment, *ex ante* provisions are ignored.

In a unilateral care framework, the efficiency of the following three *ex post* liability rules have been carefully examined, namely strict liability, negligence, and zero liability ('no-fault').[8] Denote the socially optimal level of care as x^*, where the marginal costs of precaution from an extra unit of employer care equals the saving in marginal expected accident costs from that unit increase in precaution. This level of care may be compared with the privately optimal choice of care x^0 by employers.

Under strict liability, an employer is liable for the total cost of any accident they cause, whatever their level of care. An employer's best policy is to minimize their expected costs. Since

[7] One justification for the unilateral care approach might be the clear focus in the Act on the conduct of the employer. The employee's level of care has been interpreted as relevant only as a mitigating factor in setting the appropriate fine on a careless employer: *Department of Labour v de Spa* [1995] 3 NZLR 527. Another justification would be to assume that employees always take optimal levels of care. Neither justification is compelling.

[8] See, for example, Shavell (1987).

these coincide with total expected costs, the social and private problems are identical, implying $x^0 = x^*$. Under the negligence rule, the employer is liable for the costs of accidents they cause when they fall below the standard of care required by the courts. The employer again sets $x^0 = x^*$ since for $x > x^*$, the employer will not be found negligent and care costs can be reduced by lowering x to x^*. If $x < x^*$, the employer will be found negligent and must bear total expected accident costs which are minimized at $x = x^*$. Under zero liability, however, since employers expect to pay zero accident costs, they have no incentive to take any safety precautions at all.[9]

The conclusion is that either strict liability or negligence rules induce employers to take optimal care under the assumption of certainty, and there should be no accidents which might be construed as involving negligence. As a consequence, the question arises as to why might there be any efficiency improvements expected by the introduction of negligence in the air, in addition to an *ex post* negligence rule?

A case for *ex ante* liability arises from the possible dampening of incentives from four sources. First, employers assess a positive subjective probability of employees not bringing suit. Instances may arise where employers have the ability to conceal some accidents, or tamper with evidence, or else employees are not willing to bear the cost of a failed claim. Secondly, the legal system may not perfectly enforce the liability rule, an example being evidentiary problems concerning cause. In each case, expected accident costs are discounted and so employers do not face the full expected social cost of accidents when $x < x^*$. Under strict liability, $x^0 < x^*$. Under

[9] At least, in the absence of both exemplary damages and enforceable safety regulations with penalties for breach. Notably, the HSE Act replaced 10 major pieces of regulatory legislation, over 50 Orders in Council and Notices (Regulations) were repealed, and significant amendments were made to many existing regulatory Acts.

negligence, it may (but need not) pay the employer to reduce the level of care below x^*. The employer will take too few precautions if the additional savings in costs of precaution generated when x is reduced below x^* are no smaller than the corresponding reduction in expected liability payments arising because expected accident costs are now discounted. Such an employer is always negligent, which tends to raise liability payments, but is no longer always found to be negligent, which reduces liability.

Next, employers may have bounded assets. Employers now plan for expected accident costs up to the level of $\bar{a}$, and choose $x^0 < x^*$ if the probability that damages exceed $\bar{a}$ is positive. Employers, for example, may have different levels of inherent riskiness in the sense that high-risk firms have a relatively high level of expected accident costs at any given level of care. Such firms have a correspondingly higher optimal level of care. Due to limited liability, a firm with an asset level $\bar{a}$ will not plan for expected accident costs in excess of $\bar{a}$, and the choice of care will be bounded above independently of the risks posed. With solvency constraints, *ceteris paribus*, if asset bounds are uncorrelated with risk, the more risky firms will tend to under-protect their workers.

Fourthly, there may be potential inefficiencies associated with an *ex post* negligence rule when the care required by the courts is not known with certainty by employers and employees. Legal remedies have a number of important flaws relating to issues of information and knowledge.[10]

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[10] These include:

- the difficulty of establishing a connection between health problems and workplace exposure, especially in the event of delayed reactions and multi-factoral causes.
- employee ignorance involving the causal relationship between a health condition and the workplace relationship.
- the disappearance of the firm prior to the manifestation of health problems, or insolvency in the face of accident claims.
- relatively high transaction costs of legal action may deter small claims.

Shavell (1984a) examined the nature of the diluted incentives under negligence and investigated whether cases might be established in some circumstances for their substitution by regulatory standards. Further, Shavell (1984b, 1987), emphasized the possible complementarity of combined *ex ante* and *ex post* mechanisms for preventing the dilution in incentives to take care. Building on earlier work of Calfee and Craswell (1984) and Craswell and Calfee (1986), Kolstad et al. (1990) developed a model of legal rule uncertainty which will be followed closely in what follows in an attempt to explain the negligence 'in the air' characteristics of the Act.

3. Complementary *Ex Ante* and *Ex Post* Liability Rules Under Uncertain Legal Standards

Under some circumstances, *ex ante* liability rules may complement *ex post* rules rather than substitute for them, and so enhance the efficiency properties of *ex post* rules. In Kolstad et al. (1990), uncertainty regarding legal standards was modelled as follows. The employer's subjective probability of an accident of magnitude $D(x,\varepsilon)$ is $p(x,\varepsilon)$. Let $\overline{x}(\varepsilon)$ be the court's interpretation of the social optimum x^* as a function of ε, where ε is a random variable representing the errors the court may make in estimating the socially optimal standard, distributed with density function q_ε. This recognizes that courts may err as to what the employer *should have* expected.[11] Comparing the employer's privately optimal choice of care x^0 with the socially optimal level x^*, the employer's expected accident costs are given by:

$$A(x,\varepsilon) = E[p(x,\varepsilon)D(x,\varepsilon)] \qquad \text{over } \varepsilon.$$

- employees may jeopardize their future with an employer by bringing suit, especially problematic if their human capital is highly firm-specific, and fellow employees may be reluctant to testify for related reasons.

[11] The basis for the negligence standard is what a reasonable man would have foreseen without the information possessed by the defendant: see *Takaro Properties v Rowling* [1991] 1 NZLR 567.

If the expected court error is zero, the socially optimal level of care is defined by the first order condition $C_x(x^*) = -A_x(x^*)$, noting that x^* is an *ex ante* parameter since it is defined in terms of minimization of *expected* damages. By contrast, the legal standard $\overline{x}(\varepsilon)$ is an *ex post* parameter, revealed by the courts once an accident has occurred. For the problem

$$\min \quad C(x) + p(x,\varepsilon)D(x,\varepsilon),$$

the corresponding first order condition is given by:

$$C_x(x) = -\, d[p(x,\varepsilon)D(x,\varepsilon)]/dx.$$

Since ε is a random variable, the employer has a subjective probability distribution $q_{\overline{x}(\varepsilon)}$ (hereafter, q) over the standard of care required by the court. Under an *ex post* negligence rule, the employer is liable if $x < \overline{x}(\varepsilon)$. The employer's total expected costs are:

$$TC(x) = E[C(x) + L(x,\varepsilon)p(x,\varepsilon)D(x,\varepsilon)],$$

where $L(x,\varepsilon) = 1$ for $x < \overline{x}(\varepsilon)$, and 0 for $x \geq \overline{x}(\varepsilon)$.

Given the employer's distribution q over the legal standard, the employer minimizes total costs $TC(x)$ by choosing the level of care x^0. If $x^0 = x^*$, the liability rule L is *ex ante* efficient. The probability that a level of care x will be found negligent is given by $\int_x^\infty q(x)dx$ and which gives the probability that the employer will pay expected damages of $E[p(x,\varepsilon)D(x,\varepsilon)] = A(x,\varepsilon)$, given the choice of a level of care x. The employer will choose x^* as the estimated mean of the distribution q when the court's interpretation of the legal standard is perceived to be unbiased. Alternatively, the employer may deviate from x^* and choose x^0 when information is obtained about the court's behaviour and the distribution q is formed.

Dealing first with the case of unbiased perceptions of the legal standard, the mean of the distribution q is the socially optimal standard of care x^*. For a class of mean-preserving distributions, Kolstad et al. establish that under *ex post* negligence and a legal standard with an

expected value of x^*, the employer will take insufficient (excessive) precaution if uncertainty regarding the legal standard is sufficiently large (small). In the case of diluted incentives, if an employer slightly under-complies with the legal standard, liability is the same as if under-compliance had been greater, ie, when the employer spends much less in taking safety precautions. In deciding whether to increase or decrease precaution from x^*, the employer must trade off the marginal cost of precaution against the expected marginal benefits in the form of the sum of expected marginal accident costs and the change in the likelihood of being found liable. When there is a great deal of uncertainty surrounding the legal standard of care, significant under-compliance greatly reduces precautionary costs while only slightly increasing expected liability costs. Further, Kolstad et al. establish that under-precaution will occur when the marginal cost of precaution is relatively large, since reducing compliance again significantly reduces the costs of care without significantly increasing the likelihood of being found liable for deficient care.

Regarding the case of biased perceptions of the legal standard where the employer views the mean of the distribution q as differing from the socially optimal level of care x^*, in these circumstances the bulk of the probability mass lies either below or above x^*. Employers believe courts consistently over-estimate or under-estimate the socially optimal level of care. For a class of variance-preserving distributions, Kolstad et al. then establish the result that under *ex post* negligence, if the mean of the employer's subjective probability distribution of the legal standard q is sufficiently small (large) relative to the socially optimal level of care x^*, the employer will take insufficient (excessive) levels of precaution. In the case of diluted incentives, if the firm perceives the expected legal standard to be sufficiently less than the social optimum, the injurer will under-protect workers. Even with significant under-protection, the employer is unlikely to be found negligent, so that significant savings in the costs of taking care can be obtained with little additional expected liability payments.