

# OBTAINING THE GREEN LIGHT FOR “HIGHWAY MONSTERS”<sup>1</sup>: THE ROLE OF INDUSTRY SELF-REGULATION IN PROGRESSING VEHICLE INNOVATION, PRODUCTIVITY AND SAFETY IN THE ROAD TRANSPORT SECTOR.



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## Abstract

This paper examines the growing role that industry self-regulation programs can play in improving safety and compliance and by doing so, support the introduction of innovative vehicle design by providing governments and communities with assurance that risk is being effectively managed. Discussion examines the Australian and South African experience with industry self-regulation through their respective national accreditation programs, NHVAS and the RTMS<sup>2</sup>. Discussion highlights similarities and differences as well as the associated benefits and risks for industry and government. This paper argues that in the current environment, where governments across the world seek to restrain public expenditure and manage the growth of regulatory and enforcement agencies, the ongoing approval of innovation in vehicle design and productivity will increasingly require road transport industry associations and leading truck operators to develop and expand effective models of industry self-regulation similar to those already in place in South Africa and Australia.

**Keywords:** Industry Self-regulation, Accreditation Programs, Enforcement, Heavy Vehicle Safety, National Heavy Vehicle Accreditation Scheme, Road Transport Management System

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<sup>1</sup> This term is taken from the news article Saulwick, J. (2012, 30 December). ‘Green light for highway monsters. Trial of 35-metre trucks on Hume’. *The Sun Herald*, p. 1, which examined community concern about the growing size of multi-combination vehicles on Australian urban motorways.

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## 1 Introduction

Over the past two decades there has been significant innovation in heavy vehicle design in terms of productivity and safety performance. Newer freight vehicles have tended to be longer and with greater load carrying capacity. Despite technological improvements around performance and enhanced safety features the greater road presence of these larger vehicles tends to generate significant community concern about road safety, generally derived from road user discomfort and confidence about sharing road space (Rosenbloom et al. 2009). Access to the road network is a regulatory concern of governments. Decisions in this arena weigh up the technical assessment of vehicle performance, industry and broader economic interests, environmental and amenity factors, as well as the general concerns of the wider community. Regulatory approval and regulatory management are critical elements in the ongoing process of innovation and development in the productivity and safety of the road transport sector and generally represent the final hurdle before industry (and the community) can realise the gains that come with vehicle innovation.

This paper examines the growing role that industry self-regulation programs can play in improving safety and compliance across the trucking sector. In doing this, such programs can be effective in supporting government approval of innovative vehicle design and greater road network access for higher productivity vehicles. Discussion examines the Australian and South African experience with innovative regulatory programs that explicitly draw on industry self-regulation through national accreditation programs. These programs are examined to highlight similarities and differences as well as the associated benefits and risks for industry and government.

This paper argues that in the current environment, where governments across the world seek to restrain public expenditure and manage the growth of regulatory and enforcement agencies, the ongoing approval of innovation in vehicle design and productivity will increasingly require road transport industry associations and leading truck operators to develop and expand effective models of industry self-regulation similar to those already in place in South Africa and Australia.

This paper is organised into the following sections. Following this introduction discussion examines some of the key background factors that characterise the road transport sector. This includes safety, growth in freight demand and the role of regulation and enforcement in road transport. Section three outlines the methodology for data collection and analysis. Section four provides an overview of the operational features of the Australian National Heavy Vehicle Accreditation Scheme (NHVAS) and the South African Road Transport Management System (RTMS). The similarities and differences of each program are highlighted. Section five provides an analysis of the risks and benefits of self-regulation and why models of self-regulation might differ across states. This discussion examines how industry might participate and lead models of self-regulation and what might be the gains from greater involvement in regulation. Section six concludes the paper.

## 2 Characteristics of the Road Transport Sector

Road transport sectors across the world are subject to a similar range of pressures that influence vehicle innovation and design. This includes ongoing pressure to improve vehicle safety and performance, a general upward trend in the demand for road freight services and increasing community and government concern for the manner in which regulation and

enforcement is organised and delivered. This section briefly reviews recent trends across these three fields.

## **2.1 Growth in Road Freight Demand**

Global economic development and trade liberalisation have driven significant growth in the volume of goods produced and transported across all transport modes. OECD data suggests that in most countries trucking has experienced the highest levels of sustained freight growth, particularly in places like Australia, Canada and the US where there has been significant developments in vehicle technology and design, vehicle efficiency, regulatory reform and infrastructure development (OECD 2011). In Australia for example, the road freight task is expected to continue to grow and double by 2030 (BITRE2009:2). In other countries and regions such as the EU the OECD notes a slower rate of growth in the road freight task, but nevertheless, the task and volume of road freight continues to expand (OECD 2011). Ongoing growth in road freight demand means that both industry and government share an interest in maximising the productivity and efficiency of the sector. Technological improvements, advancements in logistics and business practices, and government policy reform supportive of innovation, has seen vehicle size and carrying capacity increase significantly over the past two to three decades (Walker 2012a). This is particularly evident in countries more dependent on road freight such as Australia, Canada, New Zealand, US and South Africa. In these countries articulated and combination vehicles (doubles and triples) increasingly characterise the trucking fleet. The lead these countries have taken in vehicle innovation places pressure on other states to follow and support the introduction of larger, more efficient vehicles, for example the various trials of longer goods vehicles in the EU (Netherlands, Denmark and Germany) and the recent approval of B-doubles in Argentina.

## **2.2 Safety**

Globally the downward trend in total road fatalities is reflected in fatal truck crash data. As with light vehicles improvements in the general safety performance of the trucking sector can be attributed to improved infrastructure, better driver training and technological advances in vehicle design and safety features. The decline in truck fatalities has also occurred during a period of increased truck travel and so in terms of exposure and on a per km basis fatality rates are likely to have declined significantly (Moore 2007).

A key challenge for the heavy vehicle industry is that accidents involving trucks are generally dramatic newsworthy events. This can include significant fire and explosions involving the transport of fuel (Barlass 2013), long delays and closures of motorways as significant debris and trailer content requires specialist clean up (Ralston 2012), and major disruptive incidents involving other modes of transport such as collisions with trains at level crossings (Calligeros 2012). These dramatic events can shape a broader discourse within the community that the industry is not safe (Hoy 2013). This perception however, has resonance when accident and fatality rates in trucking are compared with other industrial sectors. For example, in Australia just over one-third of all work related fatalities for the 2009-2010 period involved working in or around a truck (Safe Work Australian 2012). The poor safety performance of trucking in Australia is consistent with the industry record in the US and UK where road transport is also the leading source of work related fatalities (Newnam and Watson 2011; Poulter et al. 2008; Spielholz et al. 2008). So while a historical analysis of industry performance data suggests the overall industry record in safety is improving (OECD 2011), comparative data across industries and the general dramatic nature of modern industrial accidents means governments and industry face community pressure and expectations that safety should improve. In this environment it is becoming increasingly difficult for governments to relax regulatory

restrictions on road access and the size of the total vehicle envelop to support improvements in productivity and efficiency.

### **2.3 Regulation and Enforcement**

In the road transport sector regulation is central to managing safety, productivity and access to the road network. In general, there are two basic regulatory approaches that governments apply. In Europe, New Zealand and North America frameworks of regulation are shaped by operator licensing. This form of regulation draws on entry criteria and standards before permission to operate is granted. Issuing a licence to operate allows regulatory agencies to retain the details of businesses and permits enforcement action to target permissions and conditions around business practices to promote compliance. Under operator licensing regimes roadside interventions can contribute data to safety rating systems that profile poor performing and high-risk firms and support the strategic targeting of enforcement.

In other continents such as Africa and Australia there is no requirements for trucking firms to register and meet predetermined criteria to operate. Under these regimes a trucking business simply needs a registered vehicle and a driver with the appropriate licence for the vehicle type. In these environments, roadside enforcement is the primary mechanisms used by the state to ensure industry compliance. Common to both regulatory approaches however, is that all operators must comply with a regime of prescriptive standards regarding dimensions, weight limits and other operational standards. These regulated standards and limits are fundamental in shaping the operating environment of the industry.

Since the 1990s governments throughout the world have pursued various reforms focussed on reducing the size of government agencies and levels of expenditure. Reforms have aimed to liberalise markets, privatise public sector assets and wherever possible deregulate and reduce the direct involvement of government in business activity. For industrial sectors like trucking the focus has been on promoting fair and open competition to help drive efficiency and innovation. Common to the deregulation movement have been calls for greater controls in the approval processes for regulation, more consideration for the costs and burdens new rules impose on businesses, more effort put into the simplification and reduction of regulation as well as demands for more innovation and flexibility in regulatory models (Burrows and Woolfson 2000; Tombs and Whyte 2010). Road transport regulators face these pressures at the same time as the road freight task is expanding and community expectations and government demands for improvement in the safety performance of the industry are increasing.

An outcome of this pressure has been the emergence of more engaged approaches where the state and industry work together to develop flexible and responsive approaches to the policy interests of government and the business objectives of industry. In practical terms this has meant increasing use of compliance approaches that in some form or another draw on industry self-regulation (Gilad 2010). This paper examines the Australian and South African experience with self-regulation and how industry support for such models might facilitate the introduction and approval of more challenging vehicle innovations.

## **3 Methodology**

This paper is a qualitative study that draws on input from representatives of industry and government as well as published government reports, conference papers and academic literature. A primary source of data for this paper has been interviews with industry and

government representatives in both Australia and South Africa who have experience with models of industry self-regulation. This work draws on the experiences and observations of participants involved in self-regulation programs and examines the potential these schemes offer to address key stakeholder concerns regarding safety, compliance and enforcement.

In the Australian context data has been collected from 42 participants. This included 18 regulators, 13 representatives of industry associations, 12 truck operators and 5 auditors. These participants were drawn from across six Australian jurisdictions and were all involved in the national compliance program.

In South Africa, data has been collected from 12 interviewees. All interviewees were members of the South African Road Transport Management System (RTMS) Steering Committee. This committee has responsibility for the development and determination of how the RTMS system works in South Africa. The committee also deals with promotion and publicity strategies, hears reports on operator performance under the scheme, audit results and scheme membership, and manages issues of industry–government relations specific to the scheme. Committee membership includes a wide range of industry representatives as well as national and provincial government officials.

Qualitative data from industry experts and experienced practitioners has been used to build the analysis of models of self-regulation and gain insight into the risks and benefits of such programs in the trucking sector. A qualitative approach was selected because it enables the researcher to ask about people’s perceptions and understandings of policy and their experience of policy and regulation in different settings. Limiting the research method to quantitative data would not produce the depth and detail required to analyse the complexity of the social phenomena that is the subject of this paper (Holiday 2002). It is recognized however, that obtaining quantitative data that tracked the compliance records of firms over time would strengthen the analysis of how models of self-regulation contribute to improvements in safety and compliance performance. This is a noted limitation of this study. Before moving to a discussion of the evidence a brief outline of the trucking compliance scheme follows.

#### **4 The Australian and South African Experience**

The Australian scheme, known as the National Heavy Vehicle Accreditation Scheme (NHVAS) has been modified and implemented in South Africa as the Road Transport Management System (RTMS). Each scheme adopts a framework of voluntary self-regulation though each varies in the manner in which they are managed at the national level and the extent to which they draw on state and industry authority. The operational characteristics of each scheme are similar and reflect the standard features of common voluntary self-regulating compliance programs, in particular, the articulation of specified standards that must be met before accreditation is granted. The assessment and confirmation that a firm’s operating systems meet scheme standards requires assessment by an external auditor. Once an auditor reviews and confirms compliance with standards, entry to the scheme is granted and an appropriate label/placard is issued to the operator that is fixed to trucks of the accredited fleet. The label both advertises the accreditation status of fleet vehicles and also facilitates discretion at enforcement sites, where accredited vehicles may be eligible for some form of regulatory concession or wave through at inspection points. Renewal of membership must occur on a bi-annual basis requiring new audits to confirm ongoing compliance to standards. The distinctive features of each scheme are outlined below.

#### **4.1 Australia: The National Heavy Vehicle Accreditation Scheme (NHVAS)**

The NHVAS is organized and administered by the state through a national regulatory agency, the National Heavy Vehicle Regulator (NHVR). Scheme details include;

- Three modules: fatigue management, maintenance management and mass management and firms may opt to join one, two or all three modules.
- Formal regulatory concessions are offered for each module, specifically additional mass for membership of the mass management module, exemption from mandatory annual vehicle inspections for membership of the maintenance module, and eligibility to drive longer hours under the fatigue management module.
- In addition to entry audits the national regulator commissions random audits of firms to validate ongoing compliance to scheme standards. Compliance of operators is also periodically assessed through roadside enforcement.
- Around 20% of the Australian truck fleet is enrolled in NHVAS. This represents approximately 7,200 operators with just over 90,000 vehicles (NHVR 2014). Large fleets dominate membership and about 35% of the larger articulated trucks operating on Australian roads are accredited under NHVAS (NTC 2007).

The scheme's impact on compliance and the general safety performance of the industry is difficult to measure. Regulators and industry associations generally view NHVAS as an effective supplementation to the prescriptive enforcement effort. The scheme is seen to assist in the efficient deployment of enforcement resources enabling more effective and strategic targeting of roadside inspections. The limited data available suggests NHVAS vehicles are safer and likely to be involved in less accidents (Baas 2008). However, it is known that some firms do game the scheme to access regulatory concessions without maintaining compliance standards (Walker 2012b). Recent high profile compliance failures of major national truck operators that are members of the scheme have refocused the national regulator's attention on the rigor of scheme and the extent to which the ongoing compliance of firms to scheme standards can be assured (NHVR 2013).

#### **4.2 South Africa: The Road Transport Management System (RTMS)**

The RTMS is organized and managed through a national steering committee that draws on a broad base of industry representation (this includes banks, insurance firms as well as truck operators and industry associations) and government agencies. While the scheme has general government support it is not funded or operated through state agencies. Key features of the program include;

- Membership fees are expected to meet the operational costs of the scheme.
- The steering committee oversees the development of scheme standards, manages operational matters and supports a rolling program of workshops across South Africa that engage provincial road agencies and local truck industry participants.
- RTMS standards have been approved through the South African national standards authority (South African Bureau of Standards) and so stand independent of existing road transport regulation (The Technical Working Group 2006).
- The scheme takes a holistic approach to the management of a trucking business with a strong focus on improving operational safety but also contributes to business efficiency and business practices. Standards cover driver wellness (diet, rest, HIV prevention and testing, management of driving hours and vehicle scheduling), vehicle loading, vehicle operations (including maintenance, driver training and fleet management), and business productivity (record keeping and other important business practices) (Nordengen and Pienaar 2007).

- Membership does not entitle operators to regulatory concessions. However, South African Provinces, such as KwaZulu Natal have required membership of RTMS as a condition of eligibility to operate certain truck configurations that exceed regulatory standards, for example extra long car carriers. Membership of RTMS is also a requirement of operators who wish to trial other innovative vehicle configurations under the South African Performance Based Standards system.
- In 2013 there were approximately 80 certified companies operating under RTMS and while the majority of members are larger firms about 30 percent of members are small companies with 10 or fewer trucks.

Road agency staff and RTMS steering committee members believe the program is effective in improving safety and compliance in the trucking industry. The evidence collected from long term (two years) trials in the coal, timber and sugar cane industry demonstrate that loading compliance has improved and the record of accidents and injury has declined over the period of the trials. Data from these trials is published on the RTMS website to demonstrate the effectiveness of the scheme (<http://www.rtms-sa.org/product/success-stories>). The operation of RTMS is seen as complementing state efforts in enforcement and compliance to improve road safety in the South African trucking industry.

## **5 Risks and Benefits of Voluntary Self-Regulation**

Voluntary regulation and compliance programs can deliver substantial gains and are also known to vary in effectiveness and are subject to specific risks. The limited research into how these programs work in the trucking sector finds that these programs are effective in improving the safety performance of fleets (Baas 2008; Naveh and Marcus 2007; Walker 2012a). The most recent review of trucking accreditation and self-regulatory programs operating in Australia was undertaken in 2006 and this work found that NHVAS and industry based accreditation programs were effective in improving the safety and productivity of trucking firms (Baas 2008; NTC 2007).

### **5.1 Productivity and Business Gains**

The qualitative evidence shows that firms use NHVAS and RTMS to drive change through their organizations. They also see membership as an effective marketing tool enhancing their reputation as a safe operator (Baas 2008). The availability of regulatory concessions (NHVAS) or access to innovative vehicle configurations under PBS (RTMS) contributes to firm productivity. Participation in these schemes suggests that the business gains readily offset any additional costs associated with compliance and internal systems development. For larger firms achieving accreditation is not difficult and the requirements are generally consistent with existing business practices (Walker 2012b). In addition the savings and operational efficiencies the scheme offers are amplified for larger firms (NTC 2007) making the compliance costs associated with membership worthwhile. These observations are consistent for large firms interviewed in both South Africa and Australia.

### **5.2 Lower Crash Rates**

Research and anecdotal evidence from expert participants suggests that the crash rate of vehicles in NHVAS and RTMS is lower than non-accredited vehicles, particularly amongst articulated vehicles. Under NHVAS the crash rate for non accredited vehicles has been estimated to be 2.5 times higher than accredited vehicles (NTC 2007). While it is recognised that accreditation and other voluntary programs generally attract responsible operators likely to have a stronger focus on safety, the evident difference in safety performance between

groups points to a range of positive attributes heightened by accreditation. The policy challenge identified through this research is how to extend industry participation in voluntary self-regulation and accreditation programs and maximise these safety gains. This is where industry leaders and industry associations can play a lead role in promoting both the benefits of voluntary accreditation programs for individual firms as well as for the industry more broadly. In addition, closely monitored trials such as those undertaken through the RTMS program become important in building an evidence base that demonstrates the effectiveness of these programs. Industry needs to be more proactive in championing this approach towards new regulatory limits and as a pathway for introducing more innovative vehicles.

### **5.3 Raising Standards and Building Better Relations with Government**

Both the South African and Australian experience demonstrate that the development and ongoing management of voluntary accreditation programs contributes to building better relations between government and industry. These programs require a dialogue between parties and this engagement and interaction helps build trust. These programs have been central to supporting trials with innovative vehicle design (PBS) and in the process collect valuable evidence about industry safety and the benefits of modern vehicle design that helps assure regulatory agencies and government that risk is being effectively managed.

### **5.4 Ritualism and Resource Constraints**

Despite these potential safety gains, voluntary self-regulation programs do present risks. Firms can engage in ritualistic participation, initially meeting the entry compliance audit and then once in the scheme, failing to maintain the required standards and systems. In these situations, firms access the benefits of regulatory concessions but fail to deliver their side of the arrangement through better business and compliance practice. The actions of regulators themselves can exacerbate this effect. This occurs where regulation is not fully enforced and regulatory requirements not followed through with the necessary periodic checks and inspections. The absence of a substantial threat of being checked for ongoing compliance tends to reduce the motivation of some operators to remain compliant with the standards of programs like RTMS and NHVAS. These forms of ritualistic participation are obstacles to continuous improvement and hold back improvements in safety standards and levels of compliance.

### **5.5 Options for Industry Contribution and Leadership**

The research literature suggests that voluntary self-regulation and compliance-orientated schemes are most effective when backed up with strong monitoring and enforcement (Parker 2002) and this of course has implications for agency resources. The key challenge for states with limited enforcement resources is how industry can assist in this process. The South African experience demonstrates that compliance programs can leverage broader market forces that are effective in shaping compliance behaviour. For example, banks and insurance firms may offer concessions on premiums or lending rates where operators demonstrate and routinely report on continuing compliance with accreditation standards. This helps lift the safety performance of firms and reduces the level of risk associated with their business for banks and insurance firms. It is possible under these programs to draw on the power of key market participants to help enforce rules and compliance standards. RTMS also seeks to do this by more explicitly drawing on the capacity of consignors and consignees to police compliance to scheme standards. For example, working co-operatively with mines and receiving depots can reduce overloading by only accepting or paying for loads up to the legal limit. In the Australian context chain-of-responsibility legislation has a similar effect and encourages larger market players to use their economic power to require firms to join

NHVAS. This reflects an interest in legal protection by ensuring contracted business partners comply with compliance requirements and also an economic interest to ensure firms access the various concessions under NHVAS. Downward pressure from senior market players requiring firms to comply with rules is generally more accepted by industry participants than direct intervention by government and their agencies (Walker 2014). Drawing on market forces is an effective way to shape and redirect truck operator behaviour towards compliance requirements. However, to be effective and more widespread, these mechanisms need explicit industry support. Where government sees industry visibly acting in support of its compliance and safety goals the likelihood of regulatory support for vehicle innovation may be greater.

Regulatory systems are under constant pressure to remove and reduce regulation but also to innovate and modernise. Promoting innovation in an environment of cost constraint requires more input and participation from industry. Research into programs of voluntary self-regulation show that success relies on partnership between industry and government agencies. This framework of cooperative work needs to be supported by a strategic program of enforcement that ensures the ongoing integrity and credibility of commitment to self-regulation. In the absence of abundant state resources industry may need to promote innovative ways in which they can contribute or lead in this traditionally “governmental” task. The reality is that while government rhetoric suggests a reluctance to increase intervention in markets community concern for safety, standards, monitoring and enforcement remain. This acts as an effective break on government support and approval for innovation and change to regulatory limits. There is an opportunity now for industry to step into this regulatory space and influence the shape and design of regulatory practice. Where effective self-regulation programs develop, the option for providing more flexible regulatory systems and responses to changing industry needs increases.

## 6 Conclusion

If industry wants a more responsive regulatory system, getting the *green light* for longer, heavier and more innovative vehicles requires greater assurances to government and the community that the framework of rules and the monitoring of compliance to these rules are well managed. Managing rules requires all parties; industry and government to be active in the process of working for better safety outcomes. The experience of South Africa and Australia demonstrate that robust programs of voluntary self-regulation (RTMS and NHVAS) can be effective ways for achieving this.

## References

- Baas, Peter. 2008. Analysis of the Safety Benefits of Heavy Vehicle Accreditation Schemes. Sydney: Austroads.
- Barlass, Tim. 2013. "Not again: Two Cootes truck tragedies in four years." In Sydney Morning Herald.
- Burrows, N and C Woolfson. 2000. "Regulating business and the business of regulation: The encouragement of business-friendly assumptions in regulatory agencies." In Regulation and Markets Beyond 2000, eds. L Macgregor, T Prosser and C Villiers. Aldershot: Ashgate Dartmouth.
- Calligeros, Marissa. 2012. "Driver seriously hurt after truck-train crash." In Brisbane Times. Brisbane.
- Gilad, Sharon. 2010. "It runs in the family: Meta-regulation and its siblings." Regulation & Governance 4:485-506.

- Holiday, A. 2002. *Doing and Writing Qualitative Research*. Thousand Oaks: Sage.
- Hoy, Greg. 2013. "Fatal truck explosion sparks wider road safety concerns." ABC 7.30.
- Moore, Barry. 2007. "The Australian experience: Background, current regulation and directions." In *Regulating Heavy Vehicles for Safety and Efficiency: Australia as a case study*. International Transport Forum. Paris: International Transport Forum.
- Naveh, Eitan and Alfred Marcus. 2007. "Financial performance, ISO 9000 standard and safe driving practices effects on accident rate in the U.S. motor carrier industry." *Accident Analysis and Prevention* 39:731-742.
- Newnam, Sharon and Barry Watson. 2011. "Work-related driving safety in light vehicle fleets: A review of past research and the development of an intervention framework." *Safety Science* 49:369-381.
- NHVR, National Heavy Vehicle Regulator. 2013. "NHVAS Review." In *On the Road*. Brisbane: National Heavy Vehicle Regulator.
- NHVR, National Heavy Vehicle Regulator. 2014. "News and Events: Early reminder to book auditors as NHVAS booms." National Heavy Vehicle Regulator.
- Nordengen, P. A and N Pienaar. 2007. "The road transport management system (RTMS): A self-regulation initiative in heavy vehicle transport in South Africa." In *26th Annual Southern African Transport Conference*. Pretoria, South Africa.
- NTC. 2007. *Accreditation Review: Draft Policy Proposal*. Melbourne: National Transport Commission.
- OECD. 2011. *Moving Freight with Better Trucks*. Paris: Organisation for Economic Cooperation and Development.
- Parker, Christine. 2002. *The Open Corporation: Effective Self-Regulation and Democracy*. Cambridge; Port Melbourne: Cambridge University Press.
- Poulter, Damian, Peter Chapman, Peter Bibby, David Clarke and David Crundall. 2008. "An application of the theory of planned behaviour to truck driving behaviour and compliance with regulations." *Accident Analysis and Prevention* 40:2058-2064.
- Ralston, Nick. 2012. "'It was just horrific' ...truck crash on bridge claims three lives." In *Sydney Morning Herald*. Sydney: Fairfax.
- Rosenbloom, Tova, Ehud Eldror and Amit Shahar. 2009. "Approaches of truck drivers and non-truck drivers toward reckless on-road behaviour." *Accident Analysis and Prevention* 41:723-728.
- Spielholz, Peregrin, Jennifer Cullen, Caroline Smith, Ninica Howards, Barbara Silverstein and David Bonauto. 2008. "Assessment of perceived injury risks and priorities among truck drivers and trucking companies in Washington State." *Journal of Safety Research* 39:569-576.
- The Technical Working Group. 2006. *Road Transport Management System (RTMS). Strategy Document*. Pretoria: Ministry of Transport, South Africa.
- Tombs, Steve and David Whyte. 2010. *Regulatory Surrender: Death, Injury and the Non-enforcement of Law*. Liverpool: The Institute of Employment Rights.
- Walker, Christopher. 2012a. "Improving safety in the Australian trucking industry: The benefits of voluntary accreditation programs." *Road and Transport Research* 21(4):15-23.
- Walker, Christopher. 2012b. "Regulating the big, the fast and the dangerous. The emergence of dynamic, responsive regulatory learning in the Australian trucking sector." In *School of Social Sciences*. Sydney: Unpublished Thesis, University of New South Wales.
- Walker, Christopher. 2014. "Organizational Learning: The Role of Third Party Auditors in Building Compliance and Enforcement Capability." *International Journal of Auditing* DOI: 10.1111/ijau.12026.