



Image: Direct vision improvements observed during delivery made in Mercedes Eonic Concrete Mixer with Tarmac in London, United Kingdom.

Featured L-R: Michael Holmes (Road Transport Safety Advisor, Sydney Metro) and Paul Adrian Banu (Transport Manager and Owner-Driver, Tarmac).

Safely delivering the growing urban freight task: Learning from international best practice

We've made great strides in improving heavy vehicle safety in Australia. But, as we face increasing demand for freight and development in our cities, it is timely to focus on the safety of our growing urban freight task. The good news is we don't have to reinvent the wheel: much of what works is already happening overseas, and replicating best practice will bring great benefits for us too.

That's the main message of new research that focusses on understanding and addressing road safety challenges with the urban freight task.

As part of the research, Sydney Metro's Road Transport Safety Advisor Michael Holmes looked at how other countries are tackling that challenge, including travelling to the UK, Europe and the US to see first-hand what schemes, policies, training programs, technologies and standards have been put in place to improve urban heavy vehicle safety.

In Australia, population growth and a multitude of major projects – think Sydney Metro and Melbourne Metro Tunnel – is increasing road freight across our major cities. This increases interaction between heavy vehicles and other road users, particularly pedestrians, cyclists and other vulnerable road users, introducing road safety risks for all groups.

While fatal heavy vehicle crashes are declining in Australia, the number of fatal crashes involving heavy rigid vehicles has remained relatively unchanged over the past decade.

Such vehicles are more likely to be involved in fatal crashes in speed zones consistent with urban areas than articulated heavy vehicles, accounting for more than one-quarter (28 per cent) of fatal crashes in speed zones of 60kmh or less.

It's these heavy rigid vehicles that predominantly support the urban freight task, servicing the waste, construction and local distribution sectors, which has grown faster than any other freight task in Australia.

So what did Michael find out?

Michael's research was part of an NRMA-ACT Road Safety Trust Churchill Fellowship to 'Investigate Best Practice to Improve Heavy Vehicle Safety in Urban Environments'.

It brought together a personal road safety passion with Michael's professional work at Sydney Metro, which includes managing the risks of an unprecedented freight task servicing a multi-billion dollar infrastructure project.

The Churchill Fellowship supports projects that could lead to a reduction in deaths and suffering caused by road crashes. Michael presented his research at the 2019 Australasian Road Safety Conference, winning best paper, and his recommendations are included in a full report.

Michael concludes that despite recent measures to improve heavy vehicle safety more broadly in Australia, such as Chain of Responsibility reform and investment in Performance-Based Standards vehicles, we still lag behind international best practice standards.



Image: Attendance at 2019 annual 'Construction Logistics and Community Safety' Conference in Birmingham, United Kingdom.

And that means many preventable fatal and serious injury crashes continue to occur. Michael's research highlighted:

- Effective heavy vehicle safety accreditation schemes in the UK are based on the Safe System approach to road safety and are supported by a robust regulatory framework requiring minimum standards for road transport operators.
- The heavy vehicle fleet across northern European countries is much younger on average and must comply with a range of mandatory passive and active vehicle safety standards and technologies.
- Local regulations to improve the safety of heavy vehicles in urban environments have been introduced in cities like London and New York through requirements for improved driver field of view and underrun protection.
- Professional driver training and competency standards in the European Union (EU) equip drivers with critical safety knowledge and skills, including safety of the urban driving task, to support technical driving skills.
- Reducing, retiming or rerouting heavy vehicle movements in urban environments through sustainable logistics practices has indirect benefits to improving road safety, alongside environmental and community benefits in reducing noise and air quality impacts.



Image: Meeting with Volvo Group in Gothenburg, Sweden to discuss new active and passive vehicle safety technologies in the EU.

Featured L-R: Peter Kronberg (Safety Director, Volvo Group), Michael Holmes (Road Transport Safety Advisor, Sydney Metro), Claes Avedal (Safety Manager, Product Planning, Volvo Trucks), Anna Wrigge Berling (Traffic and Product Safety Director, Volvo Trucks), Carl Johan Almqvist (Senior Advisor, Traffic & Product Safety, Volvo Trucks).

So what now?

Michael made recommendations, based on the findings of his research, as a way for Australian agencies to start looking more closely at reducing preventable fatal and serious injuries associated with the urban heavy vehicle freight task.

Key recommendations (see breakout box) include updating heavy vehicle standards and accreditation schemes, building safety measures into contracts for government-funded projects, improving heavy vehicle visibility in urban environments, and mandating underrun protection and emergency braking systems.

"We have the perfect opportunity in the midst of an infrastructure boom to be learning from and adopting proven best practice examples, which can be achieved by updating and introducing critical vehicle design regulations and reviewing our local laws which are preventing the entry of newer, safer vehicles into Australia," Michael says.

"These measures, together with designing appropriate infrastructure and investing in sustainable approaches to logistics, can improve both the safety and environmental impact of the urban freight task in our cities.

"Models such as the Construction Logistics and Community Safety (CLOCS) Standard could be similarly adopted on **public infrastructure projects and developments** that generate significant urban freight in our cities.

"CLOCS is viewed as a best practice model to procuring safer road transport. It's demonstrated road safety improvements on urban construction projects in the UK, and has created a safety culture in construction that now prioritises road safety to the same level as safety on construction sites.

"In parallel with this we need to fast track life-saving ADRs, which have been mandatory in the EU for many years, and are proven to prevent and reduce the consequences of a heavy vehicle crash, such as blind-spot elimination, side and rear underrun protection, and autonomous emergency braking systems.

"These systems are designed to protect if a driver or other road user makes a mistake that could otherwise cost them their life."

10 ways to improve heavy vehicle safety in urban areas

- Base heavy vehicle accreditation schemes on the road safety management system framework, removing the focus on meeting minimum compliance requirements
- Procurement contracts for Government-funded projects require road transport operators to have road transport safety management systems or an equivalent accredited standard
- Amend Australian design rules (ADRs) to require Class VI mirrors for all cab-over engine heavy vehicles and cross-over mirrors for all conventional heavy vehicles >12t GVM
- State and/or local governments consider local access regulations requiring improved visibility to the front and sides of heavy vehicles in urban road environments
- Current definition of 'fatigue-regulated heavy vehicle' should include all heavy vehicles above 4.5t in Australia and remove exemptions for 'local work' within 100km radius as this is largely carried out in urban environments
- Mandate side and rear underrun protection for heavy vehicles and trailers, where rear underrun protection strength standards of ADR 91/00 should exceed those in UNECE R 58
- Autonomous Emergency Braking (AEB) should be mandatory for all heavy vehicles (AEB must include all rigid vehicles due to higher proportion involved in the urban freight task and most prevalent type in metropolitan crashes)
- Amend width exemptions under the Heavy Vehicle (Vehicle Standards) National Regulation to allow for new safety technology, such as radar sensors
- Expand driver training and competency framework to include issues beyond technical aspects of driving to factors that influence safe operation and aspects critical to the safe urban driving task
- Trial and adopt sustainable methods of transport and logistics to reduce the impacts of construction heavy vehicles in urban environments

Source: *Investigating Best Practice to Improve Heavy Vehicle Safety in Urban Environments*