



**ROAD TRANSPORT FORUM NEW ZEALAND INC  
SUBMISSION  
ON  
Heavy Vehicle Brakes Rule Amendment**

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## **SUBMISSION BY ROAD TRANSPORT FORUM NEW ZEALAND TO NZTA ON THE PRELIMINARY HEAVY VEHICLE BRAKES RULE AMENDMENT**

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- 1.0 The pre-draft rule consultation document (the document) primarily focuses on mandating electronic braking technologies within the Heavy Vehicle Brakes rule (the rule). To a lesser extent the document invites comments on heavy vehicle brake specialist engineer Memo's which address historic issues.
- 1.1 The document gives the impression that there are two primary concerns that NZTA wish to address through the rule's amendment:
- The minimum level of braking sophistication that should be mandated in New Zealand; and
  - Addressing concerns associated with under performing existing vehicles.

### **Electronic brake technology introduction**

- 2.0 As electronic technologies improve the profile of the New Zealand fleet will change accordingly. This change will potentially be gradual as all likelihood is that brake upgrades will be made through new vehicle purchases rather than through the retro-fitting of improved technologies onto existing vehicles.
- 2.1 It will be impractical to retrospectively impose electronic braking requirements on existing vehicles. Given the costs associated with upgrading it is reasonable to expect that the vast majority of existing heavy vehicles in New Zealand will not be improved. Considering the length of time that vehicles remain in service in New Zealand it is also reasonable to assume that these comparatively underperforming vehicles will remain in service for quite some time.
- 2.2 Future rule amendments must therefore accommodate for future braking enhancements while also ensuring that brake performance on existing vehicles does not diminish. Given the technological advantages that electronic brake systems offer over non-electronic systems and that future vehicles will take advantage of these

technologies greater concern rests with ensuring existing vehicles in the heavy vehicle fleet perform to their optimum capability.

### **Inter-vehicle compatibility**

- 3.0 The brake rule references international standards and to a large extent mirrors international brake testing practices. However, the full range of international best testing practices is not being emulated in New Zealand. Most noticeable is the lack of inter-vehicle compatibility inspection.
- 3.1 The document mentions under the “End of Line Testing” section that a co-regulatory approach is to be taken with the industry and that NZTA will not act as the gate keeper and check that every vehicle meets rule and manufacturer requirements during entry certification. We support this position. This position is similar to the treatment that is given to other certified items. Brake certification policies should be no different to other types of certification.
- 3.2 However, unlike inspection policies for other certified items the periodic inspection of brake system compliance is comparatively limited. Brake system inspection does not ensure that inter-vehicle compatibility remains within compliance. The document’s writers reason that adopting electronic braking technologies will improve inter-vehicle compatibility. Nothing in the rule at present or within the document seeks to address inter-vehicle incompatibility for non-electronically controlled vehicles.
- 3.3 IRU members have recognised and have been discussing that brake compatibility between truck/tractor and trailers is enhanced by narrowing the limits for control line pressure versus brake rate in the area below 200kPa where most common brake events occur<sup>[\*]</sup>. Their aim is to reduce the occurrence of too frequent exchange and disposal of not worn down brake pads due to sleeping and glazed

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[\*]The reduction the European threshold pressure band from 30-100 Kpa to 50-85 Kpa which is the current requirement in New Zealand is being discussed for amendment to ECE R13

brake linings thereby ensuring the presence of adequate brake performance throughout brake lining life.

3.4 For verification purposes, including pre-trip inspection, European transport operators are required to fit towing vehicles with an easily accessible test connection for periodic inspection of control line pressure.

3.5 Given the agency's desire to replicate international policies the question arises why international best practice for inter-vehicle inspection has not been adopted in New Zealand.

#### **Mandating electronic technologies**

4.0 The document prompts feedback on mandating ESC, EBS and ABS and also notes that in 2011 ESC became mandatory for UN ECE R13 compliant vehicles. The suggestion is also made to mandate electronic braking technologies for New Zealand manufactured (predominately trailers) vehicles.

4.1 The document claims that the introduction of electronically controlled directional and stability systems could help to address the rollover crash rate in New Zealand. The activation of these systems is not a guarantee that poor driver decision making will be fully negated. As a vehicle safety feature these systems have considerable merit but they should not be relied upon to mitigate driver responsibility when navigating tenuous road infrastructure.

4.2 We support suggestions to provide full evidence on full system functionality during end of line testing. Ensuring functionality should however not be limited to end of line testing only. Mechanisms will be required to address in service system tampering. This support should not be misconstrued as overall support for mandating these technologies as proposed in the document.

4.3 Currently vehicles must be fitted with ABS or other alternative systems to enable compliance with Schedule 5 of the rule. There are

a large number of heavy vehicles that have been set up to comply with Schedule 5 without using ABS. The rule also exempts certain vehicles from having to be fitted with ABS.

- 4.4 The load sensed braking alternative has not been without concerns. The lack of discussion regarding load sensed braking and the insistence for forms of electronically controlled brakes suggests a marked change in direction for future heavy vehicle braking. There are unresolved issues with load sensed braking system compliance. Mandating electronically controlled brake systems will do little to address these issues.
- 4.5 Given that vehicles are currently not required to be set up with ABS<sup>[2]</sup>, which coincidentally is the least expensive and technologically advanced of the three options discussed; mandating ESC or EBS at this stage would conflict with the natural progression of technology uptake and would be viewed by the industry as taking one step too far ahead at this present time.
- 4.6 ECE 13 is not the only brake standard that is referenced in the rule. ECE 13 has also not been universally adopted by all manufacturers. Overseas vehicles that are manufactured to standards other than ECE 13 do not require ESC or EBS compliance. New Zealand's transport operators are offered a variety of vehicle purchasing options, of which vehicles of European (and therefore ECE 13 compliant) origin make up a small portion.
- 4.7 It would be sensible to continue to recognise the relevant international braking Standards referenced within the rule and adopt the most common of the minimum braking standards mandated. There is no reason that heavy vehicle brake policy could not also enable the voluntary use of more advanced technologies if vehicle purchasers wished to adopt them.

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<sup>[2]</sup> Through Standards compliance, or in accordance with Schedule 5.

4.8 ABS seems the obvious choice for the minimum braking standard in New Zealand.

4.9 While we support mandating ABS in the next iteration of the rule we do have reservations surrounding the extent of positive impact that this will have if braking regulations don't also address existing comparatively poor performing vehicles within the fleet.

**Mandating ESC for other vehicle types**

5.0 The question is raised in the document whether other vehicle types (or classes) should have vehicle stability functions mandated. Given that the document has been released to discuss the Heavy Vehicles Brake rule this may not be the forum to discuss the effect of mandating electronic brake technologies on non-heavy vehicles.