

30 August 2021

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s 9(2)(a)

REF: OIA-8581

Dear s 9(2)(a)

Request made under the Official Information Act 1982

Thank you for your email of 2 August 2021 requesting information under the Official Information Act 1982 (the Act) regarding cab cut-outs on motorhomes.

I will respond to each of your questions in turn.

*1. It states in the VIRM (updated version April 2021) that an acceptable overseas proof of modification is a European Community Whole Vehicle Type Approval (eg e11*2007/46*). This Stage 2 EC Type Approval for a Class M vehicle has absolutely no relevance to Occupancy Protection; across all of Europe a cab cut-out in a motorhome is not deemed a risk to occupancy safety. Despite this, the VIRM assumes a vehicle with a cab cut-out with Stage 2 type approval is safe for the occupants whereas a motorhome without a Stage 2 type approval might not be. Please clarify.*

Waka Kotahi NZ Transport Agency has for some time accepted certain overseas certifications in lieu of local New Zealand certification. This includes European whole-of-vehicle type approval on the basis that this jurisdiction has relatively robust regulation. The Land Transport Rule: Vehicle Standards Compliance 2002 (the Rule) requires that modifications to a cab structure are certified to ensure the vehicle is within safe tolerance of its state of manufacture. Waka Kotahi is aware that there is inconsistency between the NZ requirements and those of Europe. It is currently working with industry to develop a code of practice for certifying cab modifications to determine what requirements are appropriate, including for motorhomes or horse floats.

2. Technical Bulletin 20, and NZTA's stance on cab cut-outs posing a risk to occupancy safety contradicts the European and US directive for motorhomes, which is based on extensive testing and recognized worldwide. New Zealand is the only country to require certification for a cab cut-out in a motorhome. Where is the evidence which supports this specific risk? Upon what basis should the rules be different for vehicles in New Zealand?

Technical bulletin 20 is intended to guide Heavy Vehicle Specialist Certifiers (HVSCs) on how they can meet the existing Rule requirements, i.e. for the vehicle to stay within safe tolerance of its state of manufacture. The testing detailed in technical bulletin 20 shows the effect of certain types of cab modification, giving an indication of the extent to which the stiffness and energy absorption of cabs can be reduced by removing parts of the cab structure. Broadly speaking, reducing the cab stiffness and capacity to absorb the energy of a rollover will increase the risk to occupants of the cab as the survival space would be reduced.

As part of the work Waka Kotahi is undertaking on the cab modifications code of practice, it is considering how best to align the NZ requirements to those of overseas jurisdictions.

3. Please provide data from Coachworks Central Ltd and Sandbox Consulting's crash testing of cabs. Did these companies carry out crash tests on motorhomes with bodies or simply on stripped cab chassis which are not comparable structurally?

No crash testing has been carried out. I am therefore refusing this part of your request under section 18(e) as the information requested does not exist.

To provide context, Sandbox Consulting carried out load testing of some cabs using methodologies based on those of UN/ECE R29. The cabs tested were stripped down to only include the main structural elements, such as no glazing and internal trim. This was in line with the objective of the testing, which was to give a better understanding of the comparative effect of typical modifications.

Full test overview and result of the load testing can be accessed here:

<https://vehicleinspection.nzta.govt.nz/virms/hvsc/tb/modifications-to-trucks-cabs#heading4-for-tab1>

4. Why were Coachworks Central Ltd and Sandbox Consulting remunerated by NZTA to carry out crash tests when neither company are specialists in crash testing? Is the results from these tests the only evidence upon which NZTA stipulates there is a safety concern surrounding cab cut-outs? If there is other evidence, please supply the reports / data.

They were used because of their experience both as an HVSC and in the design of forestry/construction equipment rollover protection structures (ROPS). The standards for ROPS use a similar methodology to UN/ECE R29 in that they are both based on the use of quasi-static loading.

Waka Kotahi is not of the view that there is a particular safety concern around cab cuts. However, load testing results show in the link provided above, removing structure from the cab reduces the protection offered to occupants.

Waka Kotahi has not carried out any other testing on this.

4. Does New Zealand currently have Occupancy Safety Standards for heavy vehicles?

Yes. The NZ requirements for various occupant protection systems differ depending on the vehicle's class, use and date of manufacture, for example:

- Land Transport Rule: Head Restraints 2001
- Land Transport Rule: Interior Impact 2001
- Land Transport Rule: Frontal Impact 2001
- Land Transport Rule: Seatbelt and Seatbelt Anchorages 2002

Heavy vehicles such as commercial buses also need to meet the requirements of the Land Transport Rule: Passenger Service Vehicles 1999 (the PSV Rule).

5. Why do commercial bus fleets carrying multiple passengers (sometimes without seatbelts) and no specific reinforcement around the cab comply, when motorhomes with structures around the cab cut and nothing directly behind the cab do not?

Commercial bus fleets in New Zealand fall within the large/heavy Passenger Service Vehicles (PSVs) category. All PSVs must meet the requirements of the PSV Rule. The purpose of the PSV Rule is to ensure that all PSVs meet general safety requirements and vehicle standards, for

example: stability and strength requirements. As per section 7.2(1) of the PSV Rule, the structural strength of a passenger service must be sufficient to provide reasonable protection for occupants in the event of roof or wall deformation resulting from the vehicle rolling over.

PSVs have to be inspected to make sure they meet the requirements of the PSV Rule and have on-going regular checks, namely the Certificate of Fitness (CoF) inspections. All PSVs must have a current CoF.

The PSV Rule includes some requirements for specialist certification. For instance, the roll-over strength requirement and the safety of any equipment for people with special mobility needs must be checked by specialist certifiers appointed by Waka Kotahi.

6. Why is Occupancy Safety in motorhomes not assessed in the same manner as it is in busses? The strength is proven to exist in the door pillars. If that is accepted for busses, where a large number of passengers are carried, why is this not the basis for analysis in motorhomes where only 3 passengers exist in the cab?

Most PSVs have very different structures to motorhomes, which have been modified from van or truck base vehicles. The rollover strength requirements in the PSV rule were determined specifically for application in PSVs. PSVs typically have a number of pillars along their length which are of a form that can be readily analysed by engineering hand calculations as required by the PSV rule.

This approach is not always appropriate for truck cabs as, whilst the pillars do form part of the structure, significant stiffness and strength is provided by the rear wall in particular.

7. Is frontal impact compliance required for specialist use heavy vehicles, Yes or No?

No. While heavy vehicles do not need to meet any frontal impact standard to provide protection in a frontal crash, they must still meet the general safety requirements as per the Land Transport Rule: Frontal Impact 2001. Where a vehicle's frontal impact performance is affected by a modification, this would need to be certified by an HVSC.

Under section 28 of the Act, you have the right to ask the Ombudsman to review my decision to refuse part of your request. The contact details for the Ombudsman can be located at www.ombudsman.parliament.nz.

If you would like to discuss this reply with Waka Kotahi, please contact Robbie Stephen, Senior Engineer Vehicle Standards, by email to robbie.stephen@nzta.govt.nz.

Yours sincerely



Hayley Evans
Senior Manager Systems Integrity