

To Hayley Evans, Senior Manager Systems Integrity

From Neil Cook, Deputy Director of Land Transport

Date 28th September 2021

Subject Heavy Vehicle Passenger Cabin Modifications

Purpose of Memo

In July 2021 the Vehicle Standards Team submitted a memo Redacted - Out of scope to you presenting options for addressing a long-standing issue with heavy vehicle passenger cabin (cab) modifications. That memo, with annotations from Waka Kotahi legal counsel was reviewed by you, discussed in various fora, and found to warrant further clarification and depth of analysis before a final decision could be made. I was requested to facilitate the necessary further work.

This memo clarifies the options available by providing further detail and expanding on those discussed in the July 2021 memo. It makes a recommendation on a preferred option and identifies key considerations for implementation. The process by which a preferred option was arrived at is explained and can be explored further should you wish to test the sensitivity to any, or all, of the evaluation criteria.

Background

Since 2002 heavy vehicles have been required to have cab modifications certified, this requirement comes from the Vehicle Standards Compliance Rule. However, between 2002-2018 the Vehicle Inspection Requirements Manual (VIRM), which provides guidance to the inspection industry on implementing the Land Transport Rules, did not specifically address cab modifications. In 2018 the VIRM was updated to provide specific guidance on cab modifications.

This ambiguity in the guidance between 2002-2018, and variable regulatory scrutiny, meant that the requirement for certification was applied inconsistently throughout this period. This resulted in a large number of heavy vehicles (i.e. over 3.5 tonnes) having cab modifications between 2002-2018 without receiving any form of certification. In many cases the affected vehicles have been in service and receiving a Certificate of Fitness (CoF) for years without this requirement being raised with the vehicle owners.

Since the VIRM was updated with specific guidance on cab modifications in 2018, any vehicle without a certification for its cab modification should have been refused a CoF. This change has caused considerable angst amongst vehicle owners. Several complaints have been received by Waka Kotahi and the office of the Minister of Transport. There has been considerable media scrutiny around this issue and increasing pressure is being applied from vehicle user groups and individuals.

Unfortunately, data on the number of affected vehicles is poor (mainly because when vehicles are imported and then modified without being certified, the modification is not captured in the motor vehicle register). But reports from industry and user groups suggest it is likely to be a large number, with the New Zealand Motor Caravan Association (NZMCA) estimating that tens of thousands of vehicles could be affected. Searches of available data in the motor vehicle register suggest that this number is plausible, however there is a high degree of uncertainty.

Any reduction in cab structural strength can create an increased safety risk to occupants. However, not all cab modifications reduce the structural strength of the cab. If done correctly, a cab cut out will not reduce the structural

strength of the cab or jeopardise the effectiveness of the seat belt mounts or expose the user increased risk. To date, Waka Kotahi is unaware of any instances where the risk of poorly completed modifications has eventuated. Within Waka Kotahi's Crash Analysis System (CAS) there is no evidence of any deaths or serious injuries (DSIs) where poorly executed, or uncertified cab modifications were recorded as a contributing factor. Consultations within Waka Kotahi and with industry have also not uncovered any anecdotal evidence of harm caused directly or indirectly by this risk. This apparently low risk could be why there are no requirements in Europe for cab modifications of motorhomes, which as a vehicle type, represent the most common type of vehicle with a modified cab in New Zealand.

The lack of statistical or even anecdotal evidence on the risks posed by uncertified cab cut outs over the last 20+ years suggests that these uncertified vehicles pose a very low risk to public safety. In addition, the nature of the vehicle types in question e.g. motorhomes, modified goods vehicles and horse trucks, are not typically high speed vehicles.

Cab cut out modifications are only a sub-set of the wider activity known as cab modifications, however complaints being received, are overwhelmingly related to cab cut out modifications. So whilst the term 'cab cut outs' and 'cab modifications' are often used interchangeably; it is an important distinction that cab modifications do not necessarily involve a cab cut out. For example, strengthening a cab by adding in extra reinforcing is a cab modification which may require certification.

It is important to note that the changes to the VIRM in 2018 only affected vehicles over 3.5t (i.e. Heavy Vehicles). Vehicles under 3.5t were required to get all cab modifications certified during the 2002-2018 period in accordance with the Low Volume Vehicle Code, administered by the Low Volume Vehicle Technical Association (LVVTA). Any recommended option should consider how the outcomes align or could be aligned with the requirements for vehicles under 3.5t. This point is not specifically addressed in the Multi Criteria Analysis as it is not considered a key driver but is discussed in the Implementing the Preferred Option section.

Options

The options considered as a part of this assessment are outlined in the table below. Where the options have been changed or are additional to the original memo, it is indicated in the option name. A Go/No Go requirement for each option was introduced to ask if the option complied with the rule, this is also shown in the below table.

Option Name	What	How	Compliant with the rule?
Option A (original)	Status Quo	All vehicles with modifications prior to 2018 have to be certified as per the rule.	Yes
Option B (original)	Temporary relief for all vehicles with modifications until a Code of Practice (CoP) is introduced.	Amendment to the VIRM causing a conflict between the VIRM and the Rule.	No
Option B (revised)	Temporary relief for all vehicles with modifications via a class exemption until a CoP is introduced.	Vehicles modified prior to 2018 are exempted via a class exemption until a CoP is introduced. Once the CoP is introduced, vehicle owners will have a set period to comply before the class exemption is withdrawn. This period will need to be well defined and communicated and allow plenty of time for vehicle owners and certifiers to do what is required. The Director of Land Transport (DoLT) has the power to issue a class exemption.	Yes

Option Name	What	How	Compliant with the rule?
Option C (original)	Permanent relief for all vehicles with modifications prior to 2018.	Amendment to VIRM causing a conflict between the VIRM and the Rule (until such time as the Rule can be amended or a class exemption issued).	No
Option C (revised)	Permanent relief for all vehicles with modifications prior to 2018 via a class exemption.	Vehicles modified prior to 2018 are exempted via a permanent class exemption. The DoLT has the power to issue a class exemption.	Yes
Option D (original)	Issue individual exemptions from certification requirement to vehicles.	Individual exemptions issued via inspections by CoF inspectors or Waka Kotahi Certification Officers, either permanently or until such time as a CoP is established.	Yes
Option E (additional)	Vehicle Inspectors (VIs) deem vehicles either high risk or low risk via certain criteria.	Low risk vehicles receive an automatic exemption until a CoP is introduced, high risk vehicles have to go through an exemption process. This option is an extension of Option D but attempts to reduce potential workload on inspectors, as well as admin and time requirements. Risk assessment would need to be easy and quick to determine for VI's e.g. cut outs by certain high volume manufacturers might be automatically deemed low risk.	Yes
Option F (additional)	Remove the requirement in the Rule that requires any certification of cab cut outs.	Alter the Rule so that no cab cut outs require any form of certification given the low risk profile - this might only be applied to certain vehicle types e.g. motorhomes.	Yes

Key points on options:

- Currently, the Code of Practice (CoP) is at least one year away from being completed (e.g. September 2022 at the earliest). Giving legal effect to any new code may take considerably longer depending on how the code is developed and what means of giving legal effect is selected.
- The CoP could be developed to have two categories - one that addresses retrospective modifications, and one that addresses future modifications.
- Either a temporary exemption or a permanent exemption (class or individual) can be granted by the Director of Land Transport.

Assessment Method

Options were assessed using a Multi Criteria Analysis (MCA) matrix (see Appendix A, Figure 1 for details of the full assessment). In addition to the key requirement that the option be compliant with the Rule, the options were all assessed against the following criteria, termed 'Key Drivers':

Key Drivers	Detail
Speed/ease of implementation	Effective/efficient to deliver
Owner acceptance	Cost and effort likely to be seen as reasonable by owners
Limiting chance of legal action being taken	Reduces legal risk to Waka Kotahi (directed more at the short term)

Key Drivers	Detail
Maintaining regulatory integrity	Striking the right balance in the job Waka Kotahi has as the regulator
Public safety	Assurance of public safety
Realistic expectation of inspectors	Vehicle Inspectors/Inspecting Organisations/ Waka Kotahi Certification Officers
Certification capacity	Ability of heavy vehicle certifiers to meet demand
Reputation	Establishes confidence in managing this issue
Improving Waka Kotahi data	Attaining better data on vehicles with cab modifications

During the assessment process, Option F (remove certification requirement from the rule) was removed from consideration as it was agreed that a rule change would be required across a range of options therefore it was not a stand-alone option; rather, it was more a part of the 'how' for a number of options. Because the original Option B and Option C didn't pass the Go/No Go criteria, they were also removed from consideration leaving five options in the mix (see Appendix A, Figure 2).

Note: Where Options B and C are referred to for the rest of this document, the reference is to the revised options and not the original.

Each option was assessed against each Key Driver and scored either High, Medium or Low depending on how well the option achieved each Key Driver. The scoring of the MCA was conducted during a Teams meeting on Monday 13 September. The following people attended this session and contributed to the scoring:

- Neil Cook (in part)
- Robbie Stephen
- Phillip Ottow
- Davey Uprichard
- Andrew Thompson
- Ivan Torstonson
- Mark O'Connor

As shown in Appendix A, Figure 2, the preferred option at the end of this scoring session was Option C. However, the difference in the final scores between Option B and C was negligible. Given the relatively subjective nature of this type of assessment, it would only take slight changes in the scoring and /or weighting of a key driver for the preferred option to flip to Option B. This is discussed further in the Sensitivity Analysis section below. A clear outcome of this session was that Options A, D, E and F can be dismissed for the time being. Option A – the Status Quo, is clearly the least preferred option. This provides further justification that action on this issue is required.

The weightings applied to each Key Driver have an important, but not dominant bearing on the final outcome i.e. it generally requires the weighting on one key driver to be elevated to 1.0, and all of the others to be reduced in order to see a change in the preferred option. Small adjustments to the weightings tend to not effect the final outcome. To highlight how weightings only have a marginal effect on the final outcome, when all Key Drivers are weighted the same (1.0), the overall ranking for each option is nearly the same – the only difference being Option D and E are equal rather than ranking third and fourth respectively.

The final weightings used, and the reasoning for each is explained in the table below. The weightings are simply relative to each other and have no meaning outside of the specific evaluation. A weighting of 1.0 is considered twice as important as a weighting of 0.5.

Key Drivers	Weighting	Reasoning
Speed/ease of implementation	1.0	It is important that a quick resolution is identified due to increasing public pressure and the impact on

Key Drivers	Weighting	Reasoning
		vehicle owners of not being able to use their vehicles.
Owner acceptance	0.6	This is an important element but not a primary driver.
Limiting chance of legal action being taken	0.6	Whist Waka Kotahi should look to reduce the chance of legal action, it should not be a primary driver.
Maintaining regulatory integrity	1.0	It is important that Waka Kotahi strikes the right balance in its job as the regulator
Public safety	1.0	This should always be a primary driver for any decision Waka Kotahi makes as a regulator.
Realistic expectation of inspectors	0.4	The preferred option needs to ensure that Vehicle Inspectors are not being asked to go beyond their remit. This driver also encompasses the capacity of Waka Kotahi Certification officers to conduct inspections.
Certification capacity	0.6	It is important that the preferred option is not unrealistic/unachievable for the certification industry to achieve.
Reputation	0.6	It is important that Waka Kotahi re-establishes confidence in managing this issue
Improving Waka Kotahi data	0.2	Essentially this is a 'nice to have' and does not have much bearing on the final decision.

Sensitivity analysis

It is important to conduct some form of sensitivity analysis on an MCA and explore if the outcomes change when different weightings are applied to Key Drivers. Essentially, the analysis tests different scenarios of which criteria are more or less important than others.

Public Safety

When a weighting of 1.0 is applied to 'Public Safety' and a weighing of 0.4 is applied to all other drivers, then Option B is the preferred option by a slight margin. However, as discussed in the background section, the risk to public safety from this issue appears to be very low, so this needs to be viewed in that context.

Ease of Implementation

When a weighting of 1.0 is applied to the 'Speed/Ease of implementation' driver, and a weighting of 0.4 is applied to all other drivers, Option C is the clear preference. It's important to point out that for this scenario that Option A, B and C all scored High for this key driver, so the outcome is based on the other key drivers rather than on the higher weighting put on 'Speed/Ease of implementation'.

Maintaining Regulatory Integrity

When a weighting of 1.0 is applied to the 'Maintaining regulatory integrity' driver, and a weighing of 0.4 is applied to all other drivers, then Option B is the preferred option, but again by a very slight margin. It would not be without merit to argue that this key driver is really covered off by the sum of the others. However, it is useful from a sensitivity analysis perspective to be able to specifically address this aspect.

Overall, the sensitivity analysis shows that in terms of a preferred option, there is very little separating Option B and C. It really comes down to which weightings are applied and whether Waka Kotahi is willing to accept that the risk posed to public safety from the cab modifications to these vehicles is low enough to offer a permanent class exemption.

Note that in addition to the substantive recommendation below, I recommend that prior to finalising your decision you arrange a briefing from Mark O'Connor about the MCA model. Mark can work through the model with you and you can satisfy yourself as to the sensitivity of the outcome to the possible weightings that can be applied to any, or any combination, of the evaluation criteria.

Recommendation

The sensitivity analysis of the Multi Criteria Analysis shows that there is very little separating Option B and C. Whilst the risk to public safety involved with a permanent class exemption (Option C) is very low, there are other risks with this option which need to be considered. The most important being that once a permanent class exemption is issued, it would be very difficult for Waka Kotahi to pull back from this position without considerable loss of reputation i.e. if Waka Kotahi were to ever need to rescind the class exemption due to an increase in crash statistics related to these vehicles or other pertinent information coming to light (such as the Code of Practice work identifying remedial work that really is necessary), it would possibly be put in a worse position than it is currently. For this reason, an option somewhere in between B and C is recommended. The details for this are as follows:

- A class exemption is granted to all affected vehicles as quickly as possible for a period of five years. This will allow vehicle owners to attain a Certificate of Fitness and be able to use their vehicles. Note: cab modifications would still be inspected as a part of the CoF test and Vehicle Inspectors can still refer a vehicle to get an LT400 should they have any safety concerns.
- The messaging around this exemption needs to clearly state that because the Code of Practice (CoP) for cab modifications is still in its infancy, Waka Kotahi needs more time to get it established before it can say definitively if the requirements in the Code of Practice will be applied retrospectively (to vehicles modified between 2002 and 2018). The CoP could be developed with categories for retrospective certification and for future certifications. It also needs to be clear that in addition to, or in place of the CoP, there may be other avenues which Waka Kotahi explores in order to get assurance that these cab modifications are safe. This messaging can also allude to the possible outcome that the CoP will not apply to retrospective certifications at all and that the class exemption is made permanent or the Rule is changed to omit these vehicles from any further certification requirements for existing cab modifications.
- In addition, messaging around this option could assure vehicle owners that any future retrospective compliance requirement will endeavour to balance safety and public interest as much as possible i.e. keep compliance costs and requirements to a minimum.
- Integral to this option, is that assurance is given to vehicle owners that any future requirement to adhere to the CoP or any other compliance requirements related to existing cab modifications will be gradually introduced to allow vehicle owners sufficient time to comply i.e. all efforts will be made to ensure owners will be able to continue to use their vehicles whilst working toward compliance.

While the intention should be that these vehicles adhere to the CoP in some way, components of option D or E could still be explored as well e.g. the idea of having Waka Kotahi Certification Officers doing inspections on uncertified vehicles in place of their having to comply with the CoP may be valid. Indeed, this approach may be what the CoP ends up requiring for retrospective certification. The point being, using Waka Kotahi Certification Officers to check vehicles which have had modifications between 2002-2018 (as described in Option D) may still form part of the solution.

Implementing the recommended option

Class exemption

The initial class exemption is the key aspect of this recommendation. For that reason a draft s 18(d) has been prepared for you to submit to the DoLT if you choose to pursue the recommended option. Please engage with Waka Kotahi legal counsel to finalise the class exemption at the appropriate time. Essentially the class exemption process will work as follows:

- In the Short Term; a class exemption will be granted to all vehicles which have had uncertified cab modifications between 2002 and 2018. This will allow vehicle owners to get a CoF providing they pass all other CoF requirements, including the aspects of the CoF inspection which cover cab modifications. The initial class exemption for these vehicles will be for five years.
- In the Medium Term; if when the CoP is introduced there is a requirement for retrospective compliance, then affected vehicles will need to meet these requirements. The length of the class exemption may be reviewed at this time to align with the CoP requirements e.g. if the CoP allows two years for uncertified vehicles to comply, then the class exemption may be revised to align with that time frame.
- Longer Term; if the CoP does not require retrospective certification, then a rule change may be required. This will likely be needed if the CoP becomes the long term solution, as amending the class exemption to be 'open ended' ought not to be the approach when the appropriate way to deal with the issue is through a Rule change.

The high level process for processing and publishing the class exemption is:

- Consultation as necessary
- DoLT reviews and signs class exemption
- MoT notified of class exemption decision
- Notify the making of the exemption in the *Gazette* (including the date it takes effect)
- Publish the exemption on the Waka Kotahi website
- Present the exemption to the House of Representatives before the 16th sitting day after the exemption is granted

Communications

The decision on cab modifications will need to be clearly communicated to impacted parties in a proactive manner, following up on promises made to ensure updates are provided. Key messages will be developed as part of a communications plan.

In summary, the approach will be to:

- Provide a full briefing to the Minister.
- Provide clear communications to internal teams interacting with industry providers.
- Phone or meet with key industry members/individual vehicle owners that have contacted Waka Kotahi on numerous occasions regarding the issue.
- Email an update to industry bodies and other individuals who contacted Waka Kotahi.
- Provide clear information and any required instructions on the Waka Kotahi website.
- Update the VIRM and provide clear information and links to in-service providers. This includes clarifying that Vis/IOs should still inspect all cab modifications as they would normally during a CoF inspection and refer vehicles to get an LT400 if they have any safety concerns. A clear process will need to be developed for Vehicle Inspectors should they need to fail a vehicles CoF inspection due to a poor cab modification.
- Publish the approved memo on the Waka Kotahi website via the Official Correspondence Unit.

Code of Practice

- Adopting this recommended option will mean that a lot more focus and expectation is put on the completion of the CoP. It will therefore be critical that the CoP project is well structured and resourced to ensure it delivers a fit for purpose CoP in a timely manner.
- An important consideration of the CoP is that it will need, where possible, to get vehicle modifiers and certifiers on board with the proposals and have them prepared to implement the CoP when it is introduced.
- Some certifiers and HV engineers have already been reluctant to engage with the CoP process on account of wanting to protect the intellectual property that they have developed in relation to cab modifications. Waka Kotahi may need to consider how it might compensate certifiers for this information if it is incorporated in the CoP. It may help expediate the process if some entities have already developed processes and compliance frameworks which can be adopted into the CoP.
- Where possible, the CoP should try to achieve alignment in requirements between vehicles over 3.5t and under 3.5t.

Risks

A list of risks and suggested mitigations for the recommended option are shown in the table below. This is not intended to be an exhaustive coverage of risks but it will give you and your team something to build on in subsequent phases.

Risk	Suggested Mitigation
Vehicle owners trying to sell their vehicles may still be aggrieved with the uncertainty around future compliance requirements.	Commitment that any future compliance requirements via a CoP will, where possible, not immediately impede vehicles from attaining a CoF i.e. gradual introduction. Also, that Waka Kotahi will endeavour to balance safety and public interest in any retrospective certification requirement within the CoP.
CoP working group cannot develop a fit for purpose retrospective inspection in the CoP and new evidence comes to light on sub-standard modifications.	Use Waka Kotahi Certification Officers to perform inspections on any sub-standard modifications. The issue will be identifying which vehicles need to have inspections, this could be done in conjunction with Inspecting Organisations and having Vehicle Inspectors identify vehicles and referring them on for further inspection.
Vehicle owners remain aggrieved at the prospect of their vehicle still having to be certified for retrospective cab modifications.	A well run communications campaign to vehicle owners (and via representative groups) which clearly outlines the reasoning behind this option and provides assurance that every effort will be made to be fair and reasonable.
Class exemption may prompt vehicle owners who have had their vehicles certified post the VIRM update in 2018 to litigate.	Waka Kotahi will need to be prepared for dealing with these events on a case by case basis.

Legal Advice

s 9(2)(h)

Appendix A:

Figure 1: Complete Options Assessment

		Activity options							
		Option A (original)	Option B (original)	Option B (revised)	Option C (original)	Option C (revised)	Option D (original)	Option E (additional)	Option F (additional)
What:									
	Status Quo	Temporary relief for all vehicles with modifications until a code of practice is introduced.	Temporary relief for all vehicles with modifications via a class exemption until a code of practice is introduced.	Permanent relief for all vehicles with modifications prior to 2018.	Permanent relief for all vehicles with modifications prior to 2018 via a class exemption.	Issue individual exemptions from certification requirement to vehicles.	Vehicle Inspectors deem vehicles either high risk or low risk via certain criteria.	Remove the requirement in the rule that requires any certification of cab cut outs.	
Go/No Go	100%								
Compliance with The Rule	1	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Total Cost		1.00	-1.00	1.00	-1.00	1.00	1.00	1.00	1.00
Key Drivers	100%								
Speed/ease of implementation	1.0	H	H	H	H	H	L	L	L
Owner acceptance	0.6	L	M	M	H	H	M	M	L
Limiting chance of legal action being	0.6	L	M	M	H	H	M	M	L
Maintaining regulatory integrity	1.0	L	L	H	L	M	M	M	L
Public safety	1.0	H	H	H	M	M	H	M	L
Realistic expectation of inspectors	0.4	L	H	H	H	H	L	M	L
Certification capacity	0.6	L	M	M	H	H	M	M	L
Reputation	0.6	L	M	M	H	H	L	L	L
Improving Waka Kotahi data	0.2	H	M	M	L	L	H	H	L
Overall Score		83.7	36.2	87.8	37.2	88.0	84.3	83.8	80.0
Overall Ranking		5	8	2	7	1	3	4	6

Figure 2: Reduced Options Assessment

		Activity options					
		Option A (original)	Option B (revised)	Option C (revised)	Option D (original)	Option E (additional)	Option F (additional)
What:							
Status Quo		Temporary relief for all vehicles with modifications via a class exemption until a code of practice is introduced.	Permanent relief for all vehicles with modifications prior to 2018 via a class exemption.	Issue individual exemptions from certification requirement to vehicles.	Vehicle Inspectors deem vehicles either high risk or low risk via certain criteria.	Remove the requirement in the rule that requires any certification of cab cut outs.	
Go/No Go	100%						
Compliance with The Rule	1	Yes	Yes	Yes	Yes	Yes	Yes
Total Cost		1.00	1.00	1.00	1.00	1.00	1.00
Key Drivers	100%						
Speed/ease of implementation	1.0	H	H	H	L	L	L
Owner acceptance	0.6	L	M	H	M	M	L
Limiting chance of legal action being	0.6	L	M	H	M	M	L
Maintaining regulatory integrity	1.0	L	H	M	M	M	L
Public safety	1.0	H	H	M	H	M	L
Realistic expectation of inspectors	0.4	L	H	H	L	M	L
Certification capacity	0.6	L	M	H	M	M	L
Reputation	0.6	L	M	H	L	L	L
Improving Waka Kotahi data	0.2	H	M	L	H	H	L
Overall Score		83.7	87.8	88.0	84.3	83.8	80.0
Overall Ranking		5	2	1	3	4	6