

**AA Submission: Vehicle Dimensions and Mass Amendment
(24 July 2009)**

24 July 2009

Vehicle Dimensions and Mass Amendment
Rules Team
NZ Transport Agency
PO Box 5084 Lambton Quay
WELLINGTON 6145

Dear Sir/Madam

VEHICLE DIMENSIONS and MASS AMENDMENT 2009 (Rule 41001/5)

Introduction

The New Zealand Automobile Association (NZAA) welcomes the opportunity to provide comment on the Vehicle Dimensions and Mass Amendment Rule.

The NZAA is an incorporated society with over 1.2 million members. It represents the interests of road users who collectively pay over \$2 billion in taxes each year through fuels excise, road user charges and GST.

As road users, our Members have an interest in proposals in the Rule to permit heavier and longer trucks to operate on public roads, and the affect that may have on road safety, including increased damage to the road surface.

We circulated the draft Rule for comment to our 17 District Councils. The NZAA District Councils are representative of the membership and deal with policy issues. A summary of the feedback from our District Councils is provided below.

Overview

Firstly, the NZAA wants to acknowledge the principle and desirability of the amendment Rule. We recognise the potential productivity and efficiency gains that have been described in the heavy vehicle productivity trials, and support improving efficiency in transport, including freight, with attendant flow-on benefits for the economy at large. We also recognise the safety and environmental benefits that can result from fewer truck movements. We do not dismiss these benefits in any way but our comments focus on minimising any risks or costs associated with increasing the weight or length of trucks.

Overall, the NZAA does not oppose the three proposals in the draft Rule:

1. to increase the maximum mass and certain dimension limits for vehicles operating up to 44 tonnes without the need for a permit;
2. to allow road controlling authorities to issue permits for standard size vehicles to operate above 44 tonnes and up to 53 tonnes on specified routes; and
3. to allow the NZTA to issue permits for increased overall vehicle length and associated dimensions for vehicles to operate above or below 53 tonnes on specified routes.

We consider the changes in Proposal 1 are incremental and may enhance productivity without significant detrimental effects, although it is difficult to comment without data on the number of trucks that will benefit from these changes and the consequential pavement damage. If

overweight permits for standard size vehicles are to be issued, then the NZAA endorses giving RCA's the powers to assess and issue permits for weights up to 53 tonnes in Proposal 2. Likewise, any weight permits above 53 tonnes, or over-sized vehicle permits should be issued by the NZTA as per Proposal 3, with the express consent of local authorities as implied in section 5.3 of the draft Rule.

Our preference is not to support a single permit issuing authority for all permits (including up to 53t) as this may not adequately take into account the knowledge of the local road network and concerns of affected RCA's. However, in recognition that not all RCA's may have sufficient expertise to undertake route assessments, these could be deferred to the NZTA at the request of the local authority and in consultation with them.

Notwithstanding, our submission focuses on three key issues: vehicle safety; pavement quality; and assessing and apportioning costs imposed by heavier trucks, which we consider have not been sufficiently evaluated in the draft Rule. We address these issues separately below.

Vehicle safety

The NZAA proposes that freight operators seeking 'high-productivity motor vehicle permits' must meet higher standards than the current fleet in order to obtain permits, as a way of incentivising operators to maximise safety. Our view is that permitted trucks must be the safest on the road to reassure other road users and to encourage the uptake of truck safety technology and procedures in the fleet.

Data from Land Transport NZ (now NZTA) shows that 23% of CoF failures in 2007 were due to brake problems, and 21% of roadside inspection failures were due to brake faults, while 13% of heavy vehicles ordered off the road in 2007 were lacking basic maintenance. The pre-amble to the Heavy-vehicle Brakes Rule (2006) notes that brakes were the single most important factor in reported heavy vehicle crashes between 1997-2002.

While heavy trucks make up 2.5% of the fleet and 7% of vehicle kilometres travelled, they are represented in 18% of fatal and 7% of all injury accidents¹, although not all truck crashes are due to truck or truck driver faults. 86% of fatalities, and 66% of injuries involving trucks are not truck occupants, reflecting the higher vulnerability of other road users regardless of fault.

In an earlier proposal to increase mass and dimensions (2001), the NZAA randomly surveyed 1000 Members, with 70% opposing the proposal, and only 12% supporting a change to the current limits. This reflected the level of concern motorists have with larger or heavier trucks on the road. The latest statistics still do not give other road users confidence in the safety of the heavy transport industry, its vehicles, or drivers. While the braking faults were the impetus for the revised Heavy-vehicle Brakes Rule, the revised semi-laden testing procedure is still being rolled out nationally and so the impact on heavy vehicle (brake) safety is yet to be determined.

A heavier truck will require increased braking distances, while heavier or larger loads (within existing dimensions) may affect the vehicle's centre of gravity and consequently cornering ability compared to what drivers are used to under existing weight limits. This is especially so for tankers, which have a higher centre of gravity than curtain-side or flat-bed container trucks. Slightly longer loads will also compromise the ability of trucks to track within their lane, which poses a risk to other road users, particularly if trucks pass through urban areas, including vulnerable users like cyclists, and also risk causing damage to roadside furniture like signs.

¹ *Crash statistics for the year ended 31 December 2007*, Ministry of Transport

For overweight trucks to simply meet the existing transport regulations – which significant numbers of heavy transport operators fail – is not good enough. A permit should be a concession granted, not a right, and we think operators who have invested in safe vehicles, drivers and systems, should be rewarded by being able to obtain a high-productivity permit.

Consequently, the NZAA proposes minimum safety standards that must be met in order for operators to be issued with high-productivity motor vehicle permits for nominated vehicles:

- a) operators must earn the maximum 5-star rating under the new Operator Rating System, with vehicles that have not failed inspections for key safety items including brakes, and not employing drivers who have poor driving records or breaches of driving regulations. While the ORS is still in its infancy, this requirement could be deferred until enough data is collected;
- b) vehicles must meet minimum safety standards, including the fitment of equipment such as ABS brakes, electronic stability control, steerable auxiliary axles (for improved tracking of over-dimension trucks in particular), speed limiters, in-cab monitoring systems, spray skirts and side and rear under-run barriers;
- c) permitted vehicles to be identified by a special 'overweight' sticker or sign, like those used for hazardous loads;
- d) vehicles nominated for permitted routes must be brake tested under the new Heavy Vehicle Brake Code to assess their performance at the proposed overweight load, and issued with a corresponding Certificate of Loading, before permits can be activated;
- e) permitted vehicles to have load anchorages and towing connections re-assessed for the proposed increased weights;
- f) drivers of permitted vehicles to undergo specialised training in braking, cornering, and loading of vehicles in order to adjust driving habits to recognise the impact greater mass has on braking distances and centre of gravity. We understand specialised courses in stability and braking are already offered to the transport industry;
- g) permitted vehicles be fitted with GPS to monitor route compliance, speed and driving hours compliance, and also to collect data to attribute road damage to specific freight movements over time.

The fitment of on-board monitoring devices has been successfully trialled in Australia² under a voluntary programme to ensure trucks are complying with the agreed conditions of operation, and we propose a similar system should be implemented for permitted vehicles. The NZAA supports a voluntary move towards an electronic Road User Charges system, and a permit regime is one way of encouraging its introduction and to assist with monitoring.

The NZAA is concerned that the current Heavy-vehicle Brakes Rule requires truck brake performance to be tested at 60% of maximum gross vehicle mass (GVM) or gross combination mass (GCM), which in the Vehicle Dimensions and Mass Rule is up to 44 tonnes without a permit. As the high-productivity motor vehicle permits provided for in this draft amendment are intended for existing (unmodified) trucks, they will not have been tested at 60% of the proposed weight. For example, the current Rule requires trucks to stop within 7m from 30km/h at a maximum weight of 26.4t (60% of 44t), whereas a truck with a 53t permit should demonstrate the same stopping ability at 31.8t. We accept that operators would be reluctant to re-code their trucks without assurance that permits will be approved, so upon such approval, the operator must re-code the truck at the permitted weight *before* the permit can be *activated*. The 60% semi-laden test recognises that trucks are often not fully laden even when carrying a load, but given the trucks issued with overweight permits are expected to be fully laden for at least half the journey, there is therefore some merit in requiring the brake test to be conducted at 100% of the GVM instead.

² *Intelligent Access Programme, Austroads*

Further, the NZAA recognises that upon obtaining a permit, the truck(s) will be issued with a new Certificate of Loading (CoL), but this may not trigger a brake test at the higher weight until the next CoF, thus we cannot be confident that until then, the trucks braking performance is not compromised by the increased load, which may be 20% or greater than required under the Heavy-vehicle Brakes Rule. In addition, we consider the Heavy-vehicle Brakes Rule (e.g. clause 2.3) is unclear that the brake test must be performed at the higher CoL and not the 44t maximum GVM or GCM currently allowed without permit.

Finally, the NZAA observes that guidelines for brake force imbalance under the new semi-laden test has increased from 20% to 30% between wheels on the same axle³. While the brake test is now semi-laden, we consider this imbalance increase to be a retrograde step, and at the very least should be no more than 20% at lock-up. The greater the imbalance the greater the risk of loss of control during hard braking, the consequences of which are multiplied for heavier, laden vehicles.

In addition, we propose that routes assessed by the RCA's or NZTA for permits should:

- h) not have high KiwiRAP risk ratings, but have good star ratings;
- i) consider the performance level of wire rope median barriers (where fitted) to stop heavier trucks crossing the centre line.

According to the NZTA, the minimum performance standard for wire-rope median barriers in NZ⁴ is TL-3, which is designed to stop a vehicle weighing 2000kg travelling at 100km/h (at a 25° angle) from entering the opposing lane. Some newer wire-rope barriers in NZ are designed to TL-4 (e.g. Centennial Highway), which can withstand 8000kg at 80km/h, and we understand there is only one TL-5 level barrier (36,000kg at 80km/h) in NZ, on the Auckland Southern Motorway at Otahuhu. In other words, there are no wire-rope barriers in NZ that are capable of preventing a 53 tonne truck or heavier from crossing into a lane of opposing traffic. If overweight trucks are permitted on routes with wire-rope median barriers, then the increased risk to safety of other road users must be considered in the route assessment.

Allowing trucks to carry heavier loads will also mean they will be slower on hills and slopes, leading to greater frustration by other road users stuck behind trucks in these situations, and increasing the risk of unsafe overtaking manoeuvres. Approved routes should, therefore, include passing lanes or slow vehicle bays.

Pavement quality

New Zealand has a wide variety of roads of varying surface quality, built on base material ranging from river gravel in Canterbury, where some of the trials were conducted, to softer sand and peat in the Horowhenua. The best quality pavement surfaces are predominantly our State Highway network, particularly in metropolitan areas, with rigid pavements constructed of asphaltic concrete, and most capable of withstanding higher loads. Country portions of the State Highway network, and local provincial and rural roads, constructed of flexible chip seal, are more vulnerable to heavier weights and comprise the bulk of New Zealand's road network. The narrower geometry of these roads is also less conducive to larger, heavier vehicles, with the risk of increased damage to edgelines and gutters from over-tracking, or rutting from trucks following the same line.

The NZAA is concerned that roads under the control of local authorities will be at much greater risk of surface damage under the proposed high-productivity motor vehicle permit regime. In terms of damage to the road surface, one fully laden truck is equivalent to 10,000 cars. The

³ *Myth Busters and Change to service brake imbalance*, Heavy Vehicle Brakes Rule factsheet, May 2009

⁴ *Specification for road safety barrier systems*, NZTA M23 notes, 2009

majority of damage to roads is done by heavy vehicles; cars contribute just 0.03% of pavement loadings based on equivalent standard axle/kilometre travelled. Under the Road User Charges regime, weight damage is calculated according to the fourth power rule. That means a 20% increase in axle loads is equivalent to doubling the strain on the road surface, depending on axle configuration, and a halving of pavement life. While some of this may be offset from fewer truck movements, it must be acknowledged, as noted in the draft Rule, that the freight task is expected to double in the next 20 years. In real terms then, there are unlikely to be fewer truck movements even with productivity gains from heavy vehicle permits, although the increase may be less than predicted. The greater efficiency of heavier trucks could also lead to more freight movements by road instead of rail or sea. Research completed for the Bureau of Transport Economics (Australia) shows that a 2% decrease in road freight prices, yields a 1.5% increase in road freight carried. These permits will lead to an increase in damage on all roads in the routes, particularly roads outside metropolitan areas, although it can take five years or more for the full extent of road damage to appear and for costs to be recognised.

While research commissioned by Land Transport NZ suggests that for high strength pavements, the fourth power rule could be reduced for trucks able to increase their mass limits, the same research notes that “low strength low volume pavements should use higher values than 4 for damage law exponents.”⁵

Additionally, there is a risk that once high productivity permits have been approved for certain routes, based on assessing pavement, bridge and culvert strength for a specified number of truck movements at a specified weight, that further permits could be issued for the same route on the basis it has already been assessed, but without taking into consideration the effect of additional heavy truck movements on pavement strength.

Assessing and apportioning costs

While the NZTA has estimated the cost of strengthening bridges and culverts on the State Highway network to accommodate heavier vehicles will be around \$85-100 million, it is most disappointing the MoT have not estimated this for local authority roads that may be included in permitted routes. The greater vulnerability of local roads to higher loads means they will need repairing more often, and while the benefits have been estimated, it is not possible to assess whether these offset the various unquantified costs.

The NZAA is concerned the costs of repairing local authority roads will be borne by those authorities, and ultimately by ratepayers, as the additional RUC collected from overweight trucks is directed into the National Land Transport Fund. In addition to not estimating local roading costs, the MoT has not yet identified a mechanism for diverting the additional RUC collected to local authorities to offset the costs incurred.

Therefore, it is our proposition that the Financial Assistance Rate to local authorities from the NLTF be increased to offset the additional costs, at least until a more targeted mechanism is developed. Local authorities must be reassured that they will not incur costs by issuing permits, even though some benefits (fewer truck movements, emissions) may accrue to them locally.

Furthermore, the greater efficiency of larger trucks is likely to see modal transfer from rail or sea to road (where alternatives exist), as has been experienced overseas. According to the Bureau of Transport Economics (Australia), a 2% reduction in truck freight prices results in a 1.5%–5.2% decrease in rail freight. The NZAA believes there is merit in encouraging more freight to be transported by modes other than road, as this will also reduce truck movements with attendant road safety, emissions and efficiency benefits as this Rule also claims (for

⁵ *Effect on pavement wear of increased mass limits for heavy vehicles*, Land Transport NZ Research Report 281, 2005, p. 13

example, rail is four times more energy efficient than road transport). Productivity savings to truck operators should not outweigh the benefits of shifting freight off roads instead. We suggest a weighting factor should be applied before issuing an overweight permit, where competing transport modes exist, in order not to erode the current levels of competitiveness.

In essence, permits should not be approved for routes that might replace rail or sea freight, but only for existing road transport routes that can become more efficient under a high-productivity motor vehicle permit.

In addition, we note that the fee for issuing an overweight permit is prescribed in Schedule 4A of the Heavy Motor Vehicle Regulations 1974, which is currently set at \$54.55 for a standard continuous permit. This is unlikely to cover the cost of assessment, even for multiple vehicle permits for the same route, so a new fee will need to be established (as the Rule overview suggests) in consultation with RCA's – before this Rule is introduced.

Conclusion

Overall, the NZAA is generally supportive of the principle to extend the over-weight and over-dimensional permit regime, but we are concerned that the focus appears to be on assessing benefits and not modelling costs. There is also continuing concern by road users at the number of crashes involving heavy trucks, and the need to improve safety of the transport industry before rewarding it with productivity savings. At this point in time there is insufficient evidence that those benefits exceed the costs and until detailed information is released we consider it premature to adopt the amendment Rule in its current form.

Yours sincerely

Mike Noon
General Manager Motoring Affairs