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| **Submission to:** | National Transport Commission |
| **Title:** | Issues paper: Increasing volumetric load capacity where mass is not the constraint |
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# About the Australian Trucking Association

The ATA is the peak body representing the Australian trucking industry. Its members include state and sector-based trucking associations, some of the nation’s largest transport companies, and businesses with leading expertise in truck technology.

# Summary of recommendations

**Recommendation 1**

That the NTC consult states and territories with a view to establishing a systematic national approach to general access for safe, larger prescriptive vehicle combinations with improved volumetric load capacity.

**Recommendation 2**

That NTC ensure that any policy introduced by government to improve volumetric load capacity for heavy vehicles avoids the cost, delay and access barriers encountered by customers of the Performance Based Standards scheme.

**Recommendation 3**

That prescriptive vehicle length be increased for appropriate vehicle classes and types (and excluding devices such as bull bars, marking plates, lift platforms, access steps etc.).

**Recommendation 4**

That prescriptive vehicle width for appropriate vehicle classes and types be increased (excluding equipment such as buckles, chains, grab rails, side mirrors etc.).

**Recommendation 5**

That prescriptive vehicle height for appropriate vehicle classes and types be considered for vehicles on transport routes, regional centre routes and other suitable non-urban locations.

# Introduction

The National Transport Commission (NTC) is seeking industry feedback on the issues paper, *Increasing heavy vehicle volumetric load capacity without increasing mass limits*. This paper is analysing opportunities for allowing physically larger (not heavier) vehicles and trailers on the road. NTC’s goal is to work with stakeholders and identify options (i.e. vehicle, route, and freight types) to achieve wider access to the road network for trucks carrying higher volumes of freight without also increasing legal mass limits.

The NTC paper offers three options for physically increasing a semi-trailer or heavy vehicle combination’s volumetric load capacity and thus freight productivity i.e. (increasing length, height and/or width of vehicle or load space) plus possible benefits, costs and barriers as well as steps for developing a national policy. Each of these three options are discussed below.

The ATA agrees that each option for increasing heavy vehicle dimensions has consequences for how the truck performs and how it fits the road infrastructure. Some obvious benefits of larger not heavier vehicles and certain loads for example, include reductions in traffic volume and lower business and consumer costs through fewer journeys, reductions in fuel use and more efficient logistics outcomes.

**Recommendation 1**

That the NTC consult states and territories with a view to establishing a systematic national approach to general access for safe, larger prescriptive vehicle combinations with improved volumetric load capacity.

# Industry responses to increases in volumetric load capacity

Commercial priorities and transport needs were discussed by industry stakeholders at a workshop held by the ATA and the Queensland Trucking Association on 14 September. Those attending included ATA member associations, NatRoad and the Australian Furniture Removalists Association (AFRA), as well as operators, trailer builders and their customers. The workshop was also attended by the NTC project leader.

This submission answers various questions for industry in the issues paper, and conveys stakeholder perspectives on the opportunity and the importance of increasing a prescriptive heavy vehicle’s length, width and/or height.

The ATA understands the regulatory requirement of seeking access consent from road managers constrains a national effort to widen road access for more productive heavy vehicles. Further it is true, that barriers exist (e.g. public concern) yet benefits (e.g. lower costs, less truck traffic) are not made sufficiently evident. As the issues paper notes, it is likely that costs/barriers rather than benefits have been treated more effectively in government analyses to date. For example, despite the fact a larger truck can mean less risk to safety overall this benefit remains counter-intuitive to many policymakers and the general public.

**NTC issue paper: Rank the three mechanisms by most feasible and commercially attractive:**

1. **Increasing length (high priority)**
2. **Increasing width (high priority)**
3. Increasing height (lower priority)

Australian operators are predominantly generalists with most operating on short-term freight contracts (i.e. not for the life of the equipment lease period). Vehicle specifications may be deliberately kept sub-optimal to ensure the same vehicle will be suitable for the next contract. This can lead to perverse yet commercially flexible freight outcomes such as road train prime movers doing single trailer work**.** Any changes to heavy vehicle dimensions and performance must therefore continue to be optimal and modular to meet the needs of Australian industry to be ultra-flexible.

Overseas trends in transport logistics also tend to have large downstream implications for the road transport industry. The ATA is mindful of the changing nature of transport logistics which for example places pressure on industry to adapt to a rise in containerised volume, and the use of 40-foot and potentially 45-foot boxes. This according to the NTC challenges typical three container 25/26 m B-doubles which have since the eighties replaced semi-trailers as the main way to meet a growing land freight task. As noted above, the characteristics of truck equipment, loads and loading schemes are evolving.

In terms of domestic industry demand for increasing load capacity, it should also be borne in mind that Australia sources all key materials for trucks and trailers, either complete or as a components, from three key regions – NE Asia (Japan) (49.5% of total market), USA (5.3%) and Europe (28.5%) along with some local manufacturers (16.7%) who are still reliant upon technology from these overseas markets.

**NTC issue paper: Which freight types could benefit right now from increasing volumetric load capacity?**

Transport of furniture, empty or lightly laden TEU, and general freight such as refrigerated product as well as other lighter, fast-moving consumer goods were raised in the industry workshop as obvious candidates for volumetric freight load capacity increases.

The refrigerated trailer market is, according to a 2016 report[[1]](#footnote-1), gaining both in Australia and worldwide because of new advanced equipment and technologies. By product type, chilled was the largest segment for the refrigerated trailer sector, accounting for 61.3 per cent market share in 2014 with the Asia-Pacific, namely China and Australia, is considered ‘a key growth driver for the future’. As a result, demand for refrigerated transport equipment is predicted to grow strongly in our region over the next five years.

Of course, not all sectors of the road transport industry can capitalise on pure volumetric increase because their freight type reaches maximum mass limits well before payload space is an issue. Such sectors (e.g. dry bulk freight haulage of gravel or sand) already have the opportunity to participate in a productivity scheme called the Performance-Based Standards Scheme but it represents a slow, non-prescriptive path to access.

**NTC issue paper: How do we make a case for public expenditure on upgrades to support productivity?**

The case is similar for volumetric and mass increases. Higher capacity, stronger, divided road infrastructure is needed to host a 21st century fleet of modern higher productivity vehicles. Industry welcomes opportunities to use longer and/or wider vehicles but not if forced to proceed through the long, expensive and often ultimately disappointing PBS scheme.

Nevertheless, industry demand is clearly there for the access that the PBS scheme offers but does not always achieve, so the right network infrastructure is needed to support it.

For example, in 2014 Ron Finemore Transport commenced using semi-trailers in certain locations that were slightly longer than the prescriptive 19 metres. The company was approved under the PBS scheme to operate 20 metre semi-trailers for carrying 26 pallets or “up to six more pallets than standard semi-trailers”[[2]](#footnote-2). These trucks began delivering freight to supermarkets and large specialty stores in the ACT and surrounding regions. At the time, the NHVR stated that a benefit of the increased load-carrying capacity of these trucks was to reduce the number of truck trips required for the same work by an average of 10 per cent. According to the national regulator, additional direct benefits expected included ‘fuel savings of 304,000 litres of diesel per year and 820 fewer tonnes of CO2 emitted’.

**NTC issue paper: Which schemes, trials or access arrangements currently support use of heavy vehicles with increased load capacity?**

As noted above, the PBS scheme now managed by the NHVR is first and foremost a freight productivity initiative whereby new vehicle designs that exceed prescriptive mass and/or dimension limits and yet meet certain performance requirements can be granted access to the road. Other state-based schemes such as NSW SPECTS also exist and are welcome locally, but in the new national transport environment, schemes for national access under notices or ‘as of right’ access should be the objective not a patchwork of schemes.

Unfortunately, despite promising cases such as more productive semi-trailers above, and eye-catching headlines such as ‘The end of regulation’[[3]](#footnote-3) or ‘Can the PBS A-double change the trucking industry’[[4]](#footnote-4)?, the PBS process[[5]](#footnote-5) has not delivered the end-to-end outcomes that industry desires and at a cost it can widely bear. Despite huge investments by the industry in design, engineering and build processes, the PBS approval process is not speedy and thus not cost-effective, and the absence of guaranteed access for otherwise better performing vehicles has been and remains a major stumbling block to higher scheme uptake.

It is also important that, as part of the PBS marketplace review that is currently and separately being conducted by the NTC, the issue of why the scheme’s outcomes since 2007 have in the main encouraged non-roll-coupled bulk freight combinations such as trucks and dogs (not innovative B-double or B-triple configurations) that do not typically haul general, container and other key non-bulk linehaul freight.

**NTC issue paper: Which key freight routes should be targeted?**

Major national land transport routes (such as the Hume Highway, Bruce Highway and others) should be targeted for access, with a focus on connecting with other important freight routes underpinning export and import logistics chains to and from major rural centres.

**Recommendation 2**

That NTC ensure that any policy introduced by government to improve volumetric load capacity for heavy vehicles avoids the cost, delay and access barriers encountered by customers of the Performance Based Standards scheme.

# Increases in length

A possibility of longer trucks to allow for more payload space received explicit support from industry stakeholders as offering a huge opportunity for certain space-challenged sectors of the road transport industry (e.g. furniture removalists) whose loads typically cube out well before they reach mass limits.

Benefits may include better axle spacing to protect bridges and other sensitive infrastructure. However, a longer vehicle can compromise the ability to cross intersections or change lanes within a reasonable time.

Possible technology solutions and issues include use of steerable axles, which improve swept path. However, this equipment is also expensive and heavy. Wider use of lift axles is also an option because they help reduce tyre scrub and other damage to the road. However, transitional mass limits are generally too low to be useful for solving the subsequent rear overhang issues.

**Recommendation 3**

That prescriptive vehicle length be increased for appropriate vehicle classes and types (and excluding devices such as bull bars, marking plates, lift platforms, access steps etc.).

# Increases in width

Australia and Japan share a maximum vehicle width limit of 2.5 metres, which is otherwise unique in the world. This allows for an extra 25 mm overhang on each side of the vehicle to account for items such as buckles on curtain-siders. Mirrors and other equipment such as tyre inflation systems extend physical vehicle width further again but are not treated as part of the 2.5 m parameter.

However, the width standard in the USA is 2.6 m and in Europe, refrigerated bodies are allowed 2.6 m and others 2.55 m, again with allowances made for load restraint devices. An increase in allowable width means hard-walled refrigerated trucks can have thicker internal insulated walls and new equipment potentially added, without a loss of payload. Wider walls help these operators mitigate the effects of hot weather in transit that so easily spoils fresh and chilled goods.

As this NTC project progresses towards a set of options for volumetric load capacity increase, industry will be keen to learn how non-freight equipment such as aerodynamic devices (e.g. ‘Airtabs’), cameras, blind spot mitigation devices and crash protection equipment (e.g. bull bars, front underrun protection devices) will be treated as part of any width or length increases.

**Recommendation 4**

That prescriptive vehicle width for appropriate vehicle classes and types be increased (excluding equipment such as buckles, chains, grab rails, side mirrors etc.).

# Increases in height

At present, 4.3 metres (or 4.6 m on permit) vehicle and combination height is allowed and recent feedback suggests this is considered largely sufficient. Some ATA members noted that increasing vehicle/load height would make access more difficult on some existing infrastructure featuring catenary wires, overpasses, tunnels and railway bridges.

The ATA’s Industry Technical Council also noted that any vehicle’s ‘centre of gravity’ is a technical safety matter and doubts were expressed about possible changes in performance that could lead to vehicle rollovers. Nevertheless, no outright objection to an increase in vehicle height was received due to the possibility of suitable geographic locations where infrastructure and network type allows.

**Recommendation 5**

That prescriptive vehicle height for appropriate vehicle classes and types be considered for vehicles on transport routes, regional centre routes and other suitable non-urban locations.

# Increasing freight vehicle productivity

Government’s ongoing consideration of options for safely increasing payload volume *and* mass (through PBS) is welcome and needs to keep evolving. For example, the ATA has progressively raised with ministers and transport agencies the options for wider access by safe, modern high productivity vehicles such as   
36.5 m and 30 m A-doubles[[6]](#footnote-6).

Australia has a long history of innovation in road transport. A major step forward occurred in 1991 when   
23 metre B-doubles (aka “B-trains”) were allowed on the Hume Highway between Melbourne and Sydney for the first time. Introducing the B-double to the freight task from then on meant an immediate increase in freight productivity. Today, after much innovation in vehicle design, loading systems, pavement strength and road architecture, there is less immediate scope left to make similar gains in productivity.

It should be noted that ‘regulatory attitude’ has played its part, since the extra 2 m in length that was allowed (i.e. to create today’s 25/26 m B-double) made the use of a second tri-axle group feasible. As a consequence, B-doubles are now estimated to have carried almost the entire increase in the national road freight task from 1999 to 2007.

Wider use of larger vehicles such as modern A-doubles offers a rare area of productivity gain, particularly for volumetric freight according to some Australian trailer-makers. Some claim these vehicles are now a ‘game-changer’ because they offer considerably more productivity in the transport of fresh produce, 40 foot shipping containers and bulk freight yet also produce lower emissions, less traffic congestion and high levels of safety. Twenty five years after the B-double was introduced to our highways, it is time to introduce the A-double to interstate highways and advance national network productivity again.

In 2010, there were approximately 60,000 semi-trailers, 10,000 B-doubles and 5,000 road trains operating on the road. Bureau of Infrastructure, Transport and Regional Economics (BITRE) figures in 2014 predict a 50 per cent rise in the number of trucks on the road in the next 15 years. To meet the growing national freight task but to avoid an explosion in truck numbers, each truck trip has to become safely more productive and once again, this means the adoption of the latest high productivity vehicles. Increasing volumetric load capacity in strategic geographic areas and for strategic types of freight as discussed above, offers one of the few remaining opportunities to improve national freight productivity significantly.

1. *Study reveals major growth potential for refrigerated trailer market*. Trailer Magazine. April 2016. “The Asia-Pacific region could play a key role in the growth of the refrigerated trailer market, according to a new report by Persistence Market Research.” URL: <http://www.trailermag.com.au/news/article/study-reveals-major-growth-potential-for-refrigerated-trailer-market> [↑](#footnote-ref-1)
2. *Finemore Gets The Ok To Run PBS-Approved Trucks.* ATN June, 2014. URL: <https://www.fullyloaded.com.au/industry-news/1406/finemore-gets-the-ok-to-run-pbs-approved-trucks> [↑](#footnote-ref-2)
3. *PBS: A Game of Regulation*, published December, 2015. Global Trailer Magazine, republished as *The end of regulation,* Global Trailer Magazine, 2016. URL: <http://www.primemovermag.com.au/featured/article/pbs-a-game-of-regulation> [↑](#footnote-ref-3)
4. *Can the A-double change the trucking industry?* Prime Mover magazine. April, 2011.

   URL: <http://www.primemovermag.com.au/featured/article/can-the-a-double-change-the-trucking-industry> [↑](#footnote-ref-4)
5. *PBS: A Game of Regulation*, published December, 2015. Global Trailer Magazine, republished as *The end of regulation,* Global Trailer Magazine, 2016. URL: <http://www.trailermag.com.au/featured/article/pbs-a-game-of-regulation> [↑](#footnote-ref-5)
6. A-doubles are also called type 1 road trains, A123T23 or A123T33 etc. Before the 1980s (and introduction of B-doubles) these configurations were also commonly referred to as a double road train (or road train double) but they are all the same vehicle configuration. ‘A-double’, ‘type 1 road train’ and ‘double road train’ are generic terms, each referring to a single articulated vehicle towing a dolly which supports a semi-trailer. The fourth term, A123T23 or A123T33, is also the same but refer to the particular axle configurations of an A-double (or double road train etc.), which can be described as an 11 axle A-double and a 12 axle A-double. In theory, an A-double could have single axles, and hence it would be called a 5 axle A-Double or an A111T11. In essence these HPV are an articulated vehicle towing a trailer with two axle groups which may consist of a dolly supporting a semi-trailer. Today, the modern A-double combination is popular, productive and safe but also greatly underutilised so it is interesting to note the alphabetical Glossary on page 36 of the Issues paper begins at ‘B-double’, thus ignoring this HPV with a [bright freight future](http://www.primemovermag.com.au/featured/article/can-the-a-double-change-the-trucking-industry). [↑](#footnote-ref-6)