A2B Trailers Pty Ltd
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24/01/2025

ADR Harmonisation review 2024/2025

We are writing to support and advise direction on the implementation of the Road Vehicle Standards Act (RVSA) ADR harmonisation review between the states and the federal government. Australia has its unique road system and rules, creating a complex landscape for harmonization and compliance in heavy road vehicles, road vehicles, and trailer systems across different fields of expertise.

The UNECE regulations have pushed the boundaries with new safety technologies, and European suppliers have developed their vehicles to comply with these regulations. The international agreements underpinning the development of "world vehicle regulations" date back to 1958. However, there is concern about the lack of consistency in the implementation and understanding of the RVSA and Australian Design Rules (ADRs), as well as the acceptance of UNECE harmonization between states.

State Cohesion

There are inconsistencies and non-acceptance of the RVSA and existing harmonization rules across different states. State road regulations have been cited and enforced above the RVSA and ADRs. Although the federal government has ratified an agreement with Europe for Australia, individual states can refuse any agreement or ruling, regardless of its legitimacy.

Rear Overhang

There is a challenge regarding definitions and dimensions that requires clarification. According to the ADRs, the rear overhang is measured from the centre of the rear axle group. However, European trailers constructed under UNECE regulations have a maximum rear overhang defined as 3600mm for tandem axle trailers and 3350mm for tri-axle trailers, which are considered non-compliant under the ADR definition.
The UNECE definition of "rear overhang" states:
“Rear overhang means the horizontal distance between the vertical plane passing through the last rear axle and the rearmost point of the vehicle; where the vehicle is fitted with a coupling that is not removable, the rearmost point of the vehicle is the coupling point.”
The Australian equivalent definition specifies that:

1. The rear overhang of a vehicle is the distance between the rear of the vehicle and the rear overhang line.
2. For a vehicle with a single rear axle, the rear overhang line runs along the axle's centre line.
3. For a vehicle with two rear axles, one fitted with twice the number of tires as the other, the rear overhang line runs parallel to the axles and is located one-third of the distance between the two axles, closer to the axle with more tires.
4. For other axle configurations, the rear overhang line runs parallel to the axles down the centre of the axle group.

Clarity is also needed regarding the type of axle system used—straight, torsion, or other—as these have differing centre positions. Since the design and loading of a vehicle directly relate to braking and load transfer, we assert that the definitions of wheelbase and rear overhang should align with UNECE regulations and that the definitions of UNECE terms should be accepted.

Comparison of Standards

Given that the braking system is approved under UNECE regulations, it implies that the design—including axle placement and rear overhang—aligns with comprehensive safety standards, justifying consideration under alternative standards.

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Rear Tail Swing

In design or type approval, the safety of tail swing should be acknowledged. 'Rear swing-out' or 'tail swing' calculations and standards are applied within UNECE designs of vehicle trailer certification.
Towbar Systems
Most towbars on European trailers imported into Australia are not designed for the heavy gauge shackles required for chains. In 2021, over 2.3 million new European vehicles landed on Australian roads. These vehicles have engineered chassis designed to tow trailers at specific tare weights (hitch loads). Therefore, it is advised to use only manufacturer-specific towbar systems.
These systems are designed to tow European-engineered trailers with European emergency breakaway braking systems. The difference lies in the certified 8mm single brackets used on European towbars to attach the emergency breakaway cable. In Australia, compliance requires chains to be attached to certified brackets with 10mm-13mm holes (10mm single up to 2500kg, 13mm for up to 3500kg).
Given that shackles must be rated to suit reciprocal chains, there is no suitable shackle that will fit a single 8mm hole on these brackets and correspond to the weight-rated trailer. As Japan, China, and Korea strive to meet European standards, this could bring an additional 5 million vehicles (based on 2021 figures) onto Australian roads. Compliance with UNECE should be an immediate correction, as many European and Asian vehicles are not designed to tow Australian trailers due to specifically designed low tow ball weights.

Chain and Chain Attachments

The existing VSB1, sections 16.2 and 16.3 (ADR 62/01 Clause 14), requires chains to be mounted, including attachments. This ruling is suitable for standard Australian design coupling heads/bodies and drawbars. However, applying this chain requirement to a European overrun-braked coupling/drawbar increases safety risks for all road users.

1. Chain and Emergency Brake System Conflicts: The emergency breakaway brake system is designed to stop the trailer if it disconnects from the towing vehicle. Due to chain attachments, a breakaway brake cable may never engage, preventing vehicles from stopping as the chains become taut before this can happen.
2. Distance Implications: The European coupling head/overrun device extends further from the drawbar/A-frame than the standard Australian coupling. The distance from the chain attachment point to the ball connection is 200mm longer. This may cause longer chains to allow unrestricted turning, leading to potential accidents at speed if the coupling protection device reaches the ground before the chain catches the drawbar.
3. Design Compliance: Under ECE compliance, European trailers are designed as complete systems to ensure safety. Negating the use of the emergency brake or any individual component undermines UNECE approval and contravenes harmonization principles.

The enforcement of the chain/attachment ruling VSB1 (16.2/16.3) as it currently stands contradicts the harmonization between ADRs and UNECE. With the new ROVER, harmonization, international compliance, and trading bridges being established, this requires immediate attention.

ADR62/02 Compliance
ADR62/02 states:
14.3. Safety chains must be affixed to a substantial structural member on every trailer that is not fitted with an 'Emergency Brake System' in accordance with ADR 38/… and on every 'Drawbar' of a rigid 'Drawbar' trailer except a 'Converter Dolly.'
In the case of a UNECE approved trailer, the emergency brake system is negated by the use of chains, thus breaching ADR38/05-5.4.
ADR38/05 Design Requirements

1. Every trailer must be equipped with an efficient 'Service Brake System'.
2. Trailers over 2 tonnes must operate the brake system on all wheels.
3. Trailers up to 2 tonnes may actuate brakes via the overrun.
4. Trailers over 2 tonnes must have an efficient 'Emergency Brake System' that activates if they disconnect from the towing vehicle.
5. Trailers up to 4.5 tonnes 'ATM' are exempt from subsequent sections of this standard.

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Collaboration with NZ Authorities

In collaboration with New Zealand authorities, it is possible to import a certified, 3500kg rated trailer from the European Union. An application for exemption from non-compliance with local standards can be submitted to the NZTA if the trailer cannot be modified to comply with braking regulations.

Net Zero

Through advanced engineering and a focus on safety, European trailers have significantly reduced tare weight, thereby decreasing the risk of accidents. The prevalence of lightweight trailers under 3500 kg on Australian roads can contribute to emission reduction and help advance Australia toward net zero. The ability for more vehicles to tow lighter trailers will also increase.

Thank you for your time and consideration

Regards Eamon Colress