Australian Government

Department of Transport and Regional Services

Regulation Impact Statement for

New Definition for Twinned Wheels for Inclusion in Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005

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Prepared by: Vehicle Safety Standards
Department of Transport and Regional Services

CONTENTS

1. Introduction

Road vehicles are currently categorised according to certain characteristics including configuration (number and arrangement of wheels), engine size, top speed capability, seating capacity, and mass. In particular, there is a clear distinction between motorcycles which have two wheels and motorised tricycles which have three. Generally, Australia's vehicle categorisation codes are mostly aligned with those adopted by other countries and have not presented any difficulties in relation to international trade of motor vehicles.

However, recently the European Union (EU) has adopted a refinement to the definition of motorcycles that blurs the line between motorcycles and motorised tricycles by declaring a new definition:

> 'twinned wheels' means two wheels mounted on the same axle, the distance between centres of their areas of contact with the ground being less than 460 mm. Twinned wheels shall be considered as one wheel.

The net effect of the second sentence of the above definition is that some vehicles previously regarded as motorised tricycles become motorcycles. This has implications mainly for the installation of lighting equipment, licensing and registration. The noise and braking system standards are not affected.

One of the latest innovations in motorised scooter design is a three-wheeled vehicle (two wheels at the front – one at the rear and fits the "twinned wheels" definition above) with an active front suspension, which allows the vehicle to lean into curves much like a two-wheeled motorcycle. This provides significantly improved stability while negotiating turns at normal speeds (the limitations of three-wheeled vehicles with conventional rigid suspensions are well known), while at lower speeds, the suspension can be electronically locked to revert to a rigid configuration to ensure the vehicle remains in an upright position without any effort from the rider. This design combines the best of both worlds, with the agility inherent in two-wheeled motorcycles and the static stability (low speed and while stationary) of three-wheeled vehicles. This means riders can keep their feet on the foot pegs even while stationary.

Under the current vehicle categorisation codes, this vehicle would be classed as a three-wheeler and would be required to comply with certain lighting requirements, which would be difficult to contend with for a narrow track vehicle. In particular, since the front end has two wheels the lighting requirements applying to a car rather than a motorcycle would be applied. Lateral separation and symmetry requirements for headlamps have already been identified as problems areas. Modifying the vehicle to comply would be an expensive option.

1.1. International Standards

There is currently no internationally recognised regulation that addresses vehicle category codes. The United Nations Economic Commission for Europe (UNECE) does not regulate in this area, it merely makes recommendations and a full list of recommended vehicle categorisation codes are published in a document called Consolidated Resolution No 3 (CRE 3). CRE 3 is a useful guide and contracting parties of the UNECE 1958 Agreement (Australia is a signatory) are encouraged to follow the recommended categorisation codes.

While CRE 3 does not have the status of an international regulation, the vehicle category codes are used in the UNECE Regulations to specify which vehicle types are subject to the requirements of particular UNECE Regulations. Therefore, contracting parties that stray too

far from the codes referenced in CRE 3 would find it increasingly difficult to apply the UNECE Regulations in a consistent manner and would have trouble with international trade.

By adopting the "twinned wheels" definition as detailed above, the EU has effectively avoided any conflict with the UNECE vehicle category codes, while providing a sensible solution for the treatment of narrow track vehicles. However, it is quite reasonable to expect that the UNECE may consider adopting the EU's definition in CRE 3 to put the matter beyond doubt and Australia would be inclined to support such a move.

2. Options

The available options are:

- **Option 1** - Taking no action
- **Option 2** - Adopt the EU's definition for twinned wheels and treat such vehicles as motorcycles rather than three-wheeled vehicles
- **Option 3** - Make minor amendments to particular ADRs to accommodate such vehicles where the overall width of the vehicle makes it difficult to comply with the three-wheeled vehicle requirements.

3. Analysis

3.1. Taking No Action

Twinned wheel vehicles would continue to be treated as three wheeled vehicles. This option would require expensive modifications of such vehicles that are accepted in other major markets such as the EU, to relocate the headlamps to comply with the symmetry and lateral separation requirements for three wheeled vehicles. This may cause suppliers to overlook the Australian market.

3.2. Adopt the EU's Definition of "Twinned Wheels"

This option would allow twinned wheel vehicles to be categorised as motorcycles rather than tricycles, obviating the need for expensive modifications of the type mentioned in Option 1. The performance standards for motorcycles and motorised tricycles are similar therefore; there would be no adverse impacts in re-categorising these vehicles as motorcycles in the areas of brake system performance and noise emissions.

Allowing twinned wheel vehicles to use motorcycle lighting arrangements, within the boundaries inherent in this proposal (confined to vehicles with wheels spaced no more than 460mm apart), should not have any adverse effect on safety. Currently, motorcycles are subject to a maximum width requirement of 1000 mm and this limit would apply to twinned wheel vehicles (ref ADR 43/04 see extract below).

6.5.2.	The *'Overall Width'* of an L-Group vehicle must be as follows :
6.5.2.1.	In the case of a two wheel vehicle (LA or LC), the maximum width must not exceed 1,000 mm.
6.5.2.2.	In the case of a three wheel vehicle (LB or LE) or a motor cycle with a side car (LD), the maximum width must not exceed 1,850 mm.

The term "L-Group" refers to two and three wheeled vehicles. The lighting requirements take account of the need to signal to other road users the presence and dimensions of vehicles at night or in poor lighting conditions. This helps road users make vital decisions about passing, overtaking, turning against traffic and entering intersections. For pedestrians, being able to judge the width of a vehicle would be particularly useful in deciding whether to cross a road (at other than at controlled/pedestrian crossings).

In relation to vehicle width, the established threshold for what constitutes a vehicle of appreciable width is one that exceeds 1000mm (corresponds with the maximum allowable width of two wheeled vehicles). Therefore, 1000mm is the width beyond which vehicles would need lighting systems capable of assisting with judging that dimension.

Since the twinned wheel definition does no more than bring such vehicles under the umbrella of motorcycles, they would not be allowed to exceed the 1000mm maximum width currently permitted for motorcycles and there would be no adverse effects from allowing twinned vehicles to use the same lighting systems required for motorcycles.

3.3. Make Minor Amendments to Existing ADRs

Since it is known that the difficulties lie with meeting the lighting equipment installation requirements for three wheeled vehicles, another approach could be to make minor amendments to the ADR for the installation of lighting equipment on three wheeled vehicles. As with the option 2, this option avoids the need for costly modifications but would continue to treat these vehicles as three wheeled vehicles.

The ADR for the installation of lighting equipment on three wheeled vehicles is a derived ADR, which borrows from the corresponding requirements for two and four wheeled vehicles. For a vehicle that has one wheel at the front and two at the back, the lights at the front would have to comply with the same requirements as for a motorcycle, while the lights at the back would have to comply with the same requirements as for cars. Vehicles with two wheels at the front and one at the rear would have to meet car requirements at the front and motorcycle requirements at the rear. This makes for a very complicated standard and adding another criterion for assigning the applicability of particular lighting requirements to what is effectively a new sub category of vehicle would only make it more complicated.

3.4. Non-Regulatory Options

There are no long-term viable non-regulatory options.

The established regulatory framework makes it an offence to offer non-compliant road vehicles to the Australian market. Under the *Motor Vehicle Standards Act 1989* the Minister may determine national standards and must approve road vehicles that comply with the applicable national standards. Vehicles of a particular type as defined under existing vehicle category codes contained in the ADRs must comply with the relevant ADRs before the Minister can approve them for supply to the Australian market.

However, Section 10A(2) of the Act provides for the Minister to approve non-complying vehicles if the Minister is satisfied that such non-compliance is only in minor and inconsequential respects. Currently, these provisions are only invoked for limited numbers of vehicles and where there is a clear expectation that the relevant standards are about to be amended so that such vehicles would no longer be noncompliant.

In this case, a more enduring strategy is required as the number of affected vehicles and models will increase with time.

3.5. Cost to Business

The current new vehicle certification system administered by DOTARS imposes several costs on industry. Before a new vehicle can be issued an identification plate (allowing it to be supplied to the market) evidence must be provided to prove that the vehicle meets all relevant ADRs. Primarily this evidence is summaries of tests preformed on various components or the whole vehicle.

The introduction of the new ADR definition for twinned wheel vehicles or amending the lighting ADRs (options 2 and 3) will have the same effect of not imposing additional costs to industry. Both options are designed to avoid costly modifications that would otherwise be required to comply with three wheeled vehicle lighting requirements.

If option 1 were contemplated, affected vehicles originally designed with motorcycle front lighting arrangements would have to be modified. Most likely, the fully integrated headlamp/front fairing assembly would have to be replaced with one resembling a car headlamp assembly to comply with the spacing and symmetry arrangements. This option has bot been costed in any detail because it is not the favoured option. However, it is bound to be significant compared to the no-additional-cost options 2 and 3. Furthermore, for the relatively small volumes likely to be sold in Australia, option 1 would most likely lead to a decision not to enter the Australian market.

Business fully supports option 2.

3.6. Trade Facilitation

As mentioned there is currently no international UNECE regulation for vehicle categorisation codes nor is the proposed definition included in the UNECE recommended vehicle category codes. Adopting option 2 will most likely place Australia in position of readiness should the UNECE adopt the EU's definition in its list of recommended vehicle category codes.

4. Consultation

The proposal to introduce the new definition of twinned wheels was put to the Technical Liaison Group (TLG) at its last meeting on 25 July 2007. The TLG is the consultative committee for the development of the ADRs and is comprised of representatives from governments, industry and consumer groups. TLG voted unanimously in favour of **Option 2** - Adopt the EU's definition for twinned wheels and treat such vehicles as motorcycles rather than three-wheeled vehicles.

TLG members also agreed that no further consultation was necessary. The State and Territory representatives were confident that they represented the views of their jurisdictions and that further consultation with agency chief executives or transport ministers was not necessary.

5. Conclusions and Recommendations

Options 2 and 3 are both viable options. However, Option 2 is regarded as the most effective and least complicated. Furthermore, the TLG agreed that option 2 is the best option.

6. Implementation and Review

The amendment to the relevant ADRs would be determined by the Minister for Local Government Territories and Roads under section 7 of the *Motor Vehicle Standards Act 1989*.

The ADRs are constantly under review and should there be any concerns at any time in the future, this matter can reviewed.

7. References

Australian Design Rules are available from
http://www.dotars.gov.au/roads/motor/design/adr_online.aspx

- *Motor Vehicle Standards Act 1989*
- Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005

- UNECE Consolidated Resolution Number 3 (CRE 3) – see Annex 7 - can be found at

http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29re3.html