Vehicle Standard (Australian Design Rule 105/00 – Blind Spot Information Systems) 2023

Made under section 12 of the *Road Vehicle Standards Act 2018*

Explanatory Statement

Approved by the Hon Catherine King MP, Minister for Infrastructure, Transport, Regional Development and Local Government

September 2023

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1. LEGISLATIVE AUTHORITY

1.1. National Road Vehicle Standards

The Vehicle Standard (Australian Design Rule 105/00 – Blind Spot Information Systems) 2023, which may also be cited as the Australian Design Rule 105/00 – Blind Spot Information Systems or ADR 105/00, is made under section 12 of the *Road Vehicle Standards Act 2018* (the RVSA). The RVSA enables the Australian Government to establish nationally uniform standards that apply to new road vehicles or road vehicle components when they are provided to the market in Australia. The RVSA applies to vehicles or components whether they are manufactured in Australia or imported.

The making of the vehicle standards necessary for the RVSA's effective operation is provided for in section 12, which empowers the Minister to "determine standards for road vehicles or road vehicle components".

1.2. Exemption from Sunsetting

ADR 105/00 is exempt from the sunsetting provisions of the *Legislation Act 2003*.

Source of the Exemption

A standard made under section 12 of the RVSA is not subject to the sunsetting provisions of section 50 of the *Legislation (Exemptions and Other Matters) Act 2003* through section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015 (table item 56C). A similar exemption was previously granted in respect of national road vehicle standards made under section 7 of the *Motor Vehicle Standards Act 1989* (MVSA) (item 40, section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015). This exemption is important to ensure that Australian Design Rules (ADRs), including ADR 105/00, continue to remain in force and available to regulators and industry.

Intergovernmental Dependencies

The exemption concerns ADRs which facilitate the establishment and operation of the intergovernmental vehicle standard regime that Commonwealth, state and territory governments rely on to regulate the safety of vehicles on public roads.

The Commonwealth uses the ADRs as the basis on which approvals to supply types of road vehicles to the market are granted under the Road Vehicle Standards Rules 2019. States and territories and the National Heavy Vehicle Regulator use the ADRs as the primary criteria on which vehicles are assessed for road worthiness. This 'in-service' aspect is dependent on the date of manufacture, which determines the applicable version of the ADRs against which the vehicle can be assessed. The ability to rely on national standards is particularly relevant given the long service life of vehicles – the average age of vehicles in Australia is over 10 years.

While the ADRs are regularly updated to reflect changes in technology, it is not possible to apply these new standards retrospectively to vehicles that are already in use. With former ADRs kept on the Federal Register of Legislation, state and territory governments can use them to ensure vehicles continue to comply with the ADRs that were in force when they were first supplied to the market.

In the event that the Commonwealth could not justify the maintenance of the ADRs, state and territory governments would be compelled to create their own vehicle standards. Whilst this could mean adopting the substance of the lapsed ADRs as an interim measure, the differing needs and agendas of each state and territory government may result in variations to in-service regulations. Having different vehicle standards across the states and territories would make the scheme operate contrary to the underlying policy intent of the RVSA which is to set nationally consistent performance-based standards.

Commercial Dependencies

The effect on vehicle manufacturers to redesign existing models to comply with new ADRs would present a burden and be a costly and onerous exercise. Manufacturers should not be expected to continually go back to redesign existing vehicles. Furthermore, ongoing product recalls to comply with new ADRs would undermine consumer confidence with significant financial impact to manufacturers. This exemption allows vehicle manufacturers to focus their efforts to ensure new models supplied to the market continue to comply.

Reviews of Australian Design Rules

ADRs are subject to regular reviews, as resources permit, and when developments in vehicle technology necessitates updates to requirements. Reviews of the ADRs ensure the ongoing effectiveness of a nationally consistent system of technical regulations for vehicle design, which are closely aligned, wherever appropriate with leading international standards such as United Nations (UN) regulations. This method facilitates the rapid introduction of the latest safety devices and technological advances into the Australian market, while also contributing to the industry's cost competitiveness in the domestic market. Where a review results in a new or amended ADR, these changes are subject to full parliamentary scrutiny.

1.3. International Harmonisation

A majority of Australian road vehicle standards, including ADR 105/00, are closely harmonised with internationally based UN regulations, which are developed by the UN World Forum for Harmonization of Vehicle Regulations. Harmonisation ensures that vehicles built to the most recent safety, environmental and anti-theft standards are supplied to the Australian market at the least cost and that Australia has access to the latest vehicle technologies. In contrast, more Australian specific standards would require vehicles to be designed, developed and produced specifically for the relatively small Australian market. Unless needed to achieve legitimate policy objectives, a market specific standard would generally result in a significantly lower net benefit and benefit-cost ratio, than if costs were amortised over a number of markets, such as occurs with UN regulations.

2. PURPOSE AND OPERATION

2.1. Overview of the Regulatory Framework

The RVSA establishes a regulatory framework to regulate the importation and first supply of road vehicles to the market in Australia. The core principle of this framework is that vehicles which comply with appropriate standards are suitable for provision to the market in Australia. The ADRs have set out those standards since the early 1970s. At that time, they were applied cooperatively by the Australian Motor Vehicle Certification Board representing the Commonwealth and state and territory governments. In 1989, this arrangement was replaced by the MVSA and the Australian Design Rules were determined as national standards. The RVSA commenced in full and replaced the MVSA on 1 July 2021. A two-year transition period was provided between 1 July 2021 and 30 June 2023.

Under the RVSA, the ADRs are National Road Vehicle Standards intended to make vehicles safe to use, control the emission of gas, particles or noise, secure vehicles against theft, provide for the security marking of vehicles and promote the saving of energy. The ADRs are applied to vehicles as criteria for approval under various regulatory pathways set out in the Road Vehicle Standards legislation. Vehicles approved under these regulatory pathways can be provided to the market in Australia for use in transport.

2.2. Overview of the ADR

The purpose of ADR 105/00 is to specify requirements for a Blind Spot Information System (BSIS) fitted to medium and heavy goods vehicles, to inform the driver of a possible collision with a bicycle on the near side and therefore avoid or mitigate the severity of a collision between a turning vehicle and a bicyclist. This is achieved through the early activation of an optical information signal, when a bicycle enters a critical area on the near side (passenger's side) of the goods vehicle, where a collision could occur if the goods vehicle were to initiate a left-turn towards the bicycle, including situations where a counter-turn (away from the bicycle) is necessary to negotiate the turn. A different signal (which may be an optical signal, acoustical signal, haptic signal or any combination of these signals), must be provided when the risk of collision increases, for example, when a clear turn on the steering wheel or the operation of the left-turn indicators is detected, while a bicycle is in the critical area.

Clause 3.1 requires goods vehicles over 8 tonnes Gross Vehicle Mass (GVM) with an Overall Width exceeding 2,500 mm to comply with ADR 105/00 from 1 November 2025 for new models and 1 February 2027 for all new vehicles. This ADR is one of a package of ADRs implemented together with an increase in the Overall Width limit for goods vehicles over 4.5 tonnes Gross Vehicle Mass, from 2,500 mm to 2,550 mm, through the commencement of the Vehicle Standard (Australian Design Rule) Safer Freight Vehicles Amendment No. 2 2023. For further detail, including on the package of ADRs, refer to the Safer Freight Vehicles Impact Analysis published as supporting material for this ADR. The objective of the Safer Freight Vehicles package is to allow wider heavy goods vehicles (up to 2,550 mm overall width) if fitted with additional safety systems or features, one of which is a BSIS.

Clause 5.1 requires all vehicles to be fitted with a BSIS and meet the requirements set out in Appendix A of this standard, as varied by clause 6 (Exemptions and Alternative Procedures); or the alternative standard under clause 7.1. Appendix A is the UN Regulation No. 151 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE BLIND SPOT INFORMATION SYSTEM FOR THE DETECTION OF BICYCLES, incorporating up to supplement 4 to the original version of this regulation (the 00 series of amendments).

Clause 6.1 provides exemptions from the requirements of Appendix A which relate to gaining a UN R151 Approval. This is because it is not a requirement to gain a UN Approval for vehicle supply to market in Australia, where the Commonwealth administers approvals through the RVSA and the ADRs.

Clauses 6.2 to 6.9, include a series of variations, exemptions, alternative procedures and supplementary requirements for particular paragraphs of Appendix A (UN R151). These have been included to enable vehicle manufacturers to demonstrate compliance to ADR 105/00 for the Australian market, without being required to obtain a UN R151 Approval.

Clause 7.1 specifies the technical requirements of the United Nations Regulation No. 151 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE BLIND SPOT INFORMATION SYSTEM FOR THE DETECTION OF BICYCLES, incorporating the 00 series of amendments, including at least supplements 1 to 3 to the 00 series of amendments, as an acceptable alternative standard to ADR 105/00.

To meet UN R151 as incorporated in Appendix A, a BSIS must at least operate for all forward vehicle speeds from standstill to 30 km/h, for ambient light conditions above 15 Lux. The performance of the BSIS is assessed in a series of dynamic tests in which both the subject vehicle (test vehicle) and a bicycle dummy are moving, as well as two different types of statics tests in which the subject vehicle (test vehicle) is stationary and a bicycle dummy is moved. These simulate scenarios in which a bicyclist moves in a parallel direction along the near side (passenger's or kerb side) of a moving or stationary heavy vehicle, or crosses from the near side in front of a stationary heavy vehicle (e.g. at traffic lights). In the series of dynamic tests, the bicycle dummy is moved at either 10 (±0.5) km/h or 20 (±0.5) km/h, along a straight path with a lateral separation between the bicycle and the test vehicle near side of either 1.25 m or 4.25 m, with the test vehicle moving at either 10 (±2) km/h or 20 (±2) km/h in a parallel direction. In the type 1 static test, the bicycle dummy is moved at a speed of 5 (± 0.5) km/h from the near side along a straight path perpendicular to the longitudinal median plane of the stationary test vehicle, and 1.15 m in front of the most forward point of the test vehicle. In the type 2 static test, the bicycle dummy is moved at a speed of 20 (± 0.5) km/h along a straight path parallel to the longitudinal median plane of the stationary test vehicle, with a lateral separation between the bicycle and the test vehicle near side of 2.7 (± 0.2) m. Each dynamic and static test is considered passed if the blind spot information signal is activated in accordance with the specified pass/fail criteria for each of these test types.

There is also a failure warning signal test for system failures and an automatic deactivation tests for sensor contamination. The blind spot information signal must only be deactivated automatically in case of contamination of the sensors or a system failure – manual deactivation must not be provided. The additional warning signal may be deactivated manually or automatically; and must be deactivated together with the information signal in case of a sensor contamination or a system failure.

3. MATTERS INCORPORATED BY REFERENCE

3.1. Legislative Instruments

Clause 4.1.1 includes a reference to the Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005 (which may also be cited as the Australian Design Rule – Definitions and Vehicle Categories). This sets out definitions for many terms used in the ADRs, including the vehicle categories used in ADR applicability tables.

In accordance with paragraph 12(2)(b) of the RVSA, this ADR is incorporated as in force or existing from time to time.

The ADRs may be freely accessed online through the Federal Register of Legislation. The website is www.legislation.gov.au.

3.2. Other Documents

International Organization for Standardization

Clauses 6.2 and 6.4.1, include references to ISO 19206-4:2020. Clause 6.2, and paragraphs 2.12 and 5.3.2 of Appendix A, include references to ISO [CD] 19206-4:2018. These documents specify the properties and performance requirements of a bicyclist target that represents a human bicyclist in terms of shape, movement, reflection properties, etc. for testing purposes. The bicyclist target is used to assess the system detection and activation performance of active safety systems.

In accordance with paragraph 14(1)(b) and subsection 14(2) of the *Legislation Act 2003*, each of these documents are incorporated as in force on the date this national road vehicle standard is made.

ISO standards are all available for purchase only from the ISO and various associated national standards bodies. While not freely available, these ISO standards are all readily accessible and widely used by vehicle manufacturers.

Section 12 of the RVSA allows the Minister to incorporate a broad range of documents, including as in force or existing at a particular time or as in force from time to time, when making national road vehicle standards. This ensures that Australia's legislative framework is well-prepared for future developments in the international road vehicle space.

United Nations

Clause 7.1 includes a reference to the United Nations Regulation No. 151 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE BLIND SPOT INFORMATION SYSTEM FOR THE DETECTION OF BICYCLES, incorporating the 00 series of amendments, including at least supplements 1 to 3 to the 00 series of amendments. This is an international standard for BSIS fitted to omnibuses, and goods vehicles over 3.5 tonnes.

Paragraphs 2.5 and 4.5.1 of Appendix A, as well as Table 1 in Annex 4 to Appendix A, include footnote references to the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6.

Paragraph 5.2.1 of Appendix A includes a reference to the UN Regulation No. 10 (R10). This is an international standard for electromagnetic compatibility for vehicles and vehicle components.

In accordance with paragraph 14(1)(b) and subsection 14(2) of the *Legislation Act 2003*, each of these UN documents are incorporated as in force on the date this national road vehicle standard is made.

UN Regulations and Resolutions may be freely accessed online through the UN World Forum for the Harmonization of Vehicle Regulations (WP.29). The WP.29 website is www.unece.org/trans/main/welcwp29.html.

Paragraph 6.5.3 of Appendix A includes a reference to sign C14 as defined in the Vienna convention on road signs and signals, with a footnote reference to document ECE/TRANS/196 on the Convention on Road Signs and Signals of 1968 European Agreement Supplementing the Convention and Protocol on Road Markings, Additional to the European Agreement. For ease of reference, sign C14 in these documents is as reproduced below:

4. CONSULTATION

4.1. General Consultation Arrangements

It has been longstanding practice to consult widely on proposed new or amended vehicle standards. For many years, there has been active collaboration between the Commonwealth and the state/territory governments, as well as consultation with industry and consumer groups. Much of the consultation takes place within institutional arrangements established for this purpose. The analysis and documentation prepared in a particular case, and the bodies consulted, depend on the degree of impact the new or amended standard is expected to have on industry or road users.

Proposals that are regarded as significant need to be supported by an Impact Analysis (IA) meeting the requirements of the Office of Impact Analysis (OIA) as published in the *Australian Government Guide to Policy Impact Analysis* or the *Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies*.

4.2. Specific Consultation Arrangements

Public comment was sought on the Safer Freight Vehicles package, of which BSIS forms an integral part, from 27 April 2021 to 30 June 2021.

A draft ADR 105/00 – Blind Spot Information Systems based on the United Nations Regulation No. 151 was released together with a discussion paper, other draft ADRs proposed for the Safer Freight Vehicles package, and a feedback form on the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the department) website.

The department provided two ways to comment: 1) Emailing the feedback form to the Vehicle Standards Section email address; or 2) Mailing the provided feedback form to the Vehicle Standards Section postal address.

An email was also sent on 27 April 2021 to inform senior representatives of state and territory governments, and representative bodies for heavy vehicle manufacturer's, operators, and road users. In addition, a notice was published in the Office of Road Safety newsletter in May 2021. The department also held two targeted consultation meetings in June 2021, to explain the proposed regulatory changes contained within the discussion paper and the draft ADRs to other government and industry stakeholders.

Formal feedback was received from members of the public, state government agencies, industry, road user groups and road safety advocates. There was broad support for the implementation of a new ADR mandating BSIS on trucks to be included in the Safer Freight Vehicles reforms.

Following the public consultation, the feedback and agreed outcomes from a series of ADR consultative forum meetings between July 2021 and November 2022 were used by the department to improve and refine the proposed Safer Freight Vehicles package of ADRs, including implementation related aspects. These consultative meetings involved nominated senior and technical representatives of government (Australian and state/territory), the manufacturing and operational arms of the industry and of representative organisations of consumers and road users.

5. REGULATORY IMPACT

5.1. Impact Analysis

An IA (refer Volume 2) was completed on options to increase the overall width limit for Safer Freight Vehicles meeting a package of additional ADRs harmonised with UN vehicle regulations, including a new ADR 105/00 on BSIS. The OIA reference number for the IA is 21-01048.

5.2. Benefits and Costs

There are both benefits and costs associated with mandating BSIS for goods vehicles that are over 8 tonnes GVM and have an overall width exceeding 2,500 mm. In the benefit-cost analysis for the IA, the Australian Road Research Board estimated that a BSIS reduces the risk of a heavy vehicle having a fatal or serious injury crash by 0.6 per cent and costs $500 per vehicle to fit.

6. STATEMENT OF COMPATIBILITY WITH HUMAN RIGHTS

The following Statement is prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011.*

6.1. Overview

ADR 105/00 specifies requirements for BSIS fitted to medium and heavy goods vehicles, to inform the driver of a possible collision with a bicycle on the near side and therefore avoid or mitigate the severity of a collision between a turning vehicle and a bicyclist.

6.2. Human Rights Implications

ADR 105/00 does not engage any of the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

6.3. Conclusion

ADR 105/00 is compatible with human rights, as it does not raise any human rights issues.