Vehicle Standard (Australian Design Rule 99/00 – Lane Departure Warning 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 99/00 – Lane Departure Warning Systems) 2023, which may also be cited as the Australian Design Rule 99/00 – Lane Departure Warning Systems or ADR 99/00, is made under the *Road Vehicle Standards Act 2018* (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 99/00 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 99/00, 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 99/00, 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 framework to regulate the importation and first provision 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 99/00 is to specify requirements for Lane Departure Warning Systems (LDWS) fitted to medium and heavy goods vehicles, to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane.

LDWS typically use a forward-facing camera to constantly monitor lane markings on the road ahead to detect any unintentional drift of the vehicle out of its lane. When an LDWS detects an unintentional lane departure, it will warn the driver using an escalating combination of visual, audible, and/or haptic (e.g. steering wheel vibration) alerts. LDWS will not provide a warning and will automatically deactivate, when the direction indicator is used. LDWS will usually also automatically deactivate when the vehicle is travelling along a road where it cannot detect lane markings.

Clause 3.1 requires goods vehicles over 4.5 tonnes Gross Vehicle Mass (GVM) (ADR sub-category NB2 and category NC vehicles) with an Overall Width exceeding 2,500 mm to comply with ADR 99/00 from 1 October 2023. This is the same date from which the Overall Width limit for goods vehicles meeting a package of ADRs (including this ADR 99/00), increases 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 LDWS.

Clause 3.2 exempts vehicles with four or more axles and vehicles designed for off-road use (as defined in Appendix B) from having to comply with ADR 99/00. These exemptions are based on the rationale in the introduction of the relevant international standard, the UN Regulation No. 130 (R130), as well as similar exemptions applied in the European Union and other markets. LDWS are principally designed to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane, particularly under monotonous highway driving conditions (e.g. linehaul freight operations), and would therefore be likely to have much less benefit for the exempt vehicles. Further these exempt vehicles can also have technical features that make LDWS installation more difficult and are generally produced in lower volume, which means any extra development and testing costs would have to be amortised over much fewer vehicle sales.

Clause 5.1 requires all vehicles to be fitted with an LDWS 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. 130 (R130) – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE LANE DEPARTURE WARNING SYSTEM (LDWS), incorporating up to supplement 1 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 R130 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 6.7, allow the Australian lane markings identified in Appendix C of this standard to be used in the lane departure warning tests, as an alternative to the lane markings identified for other countries in Appendix A. Where the Australian lane markings are used for the lane departure warning tests, no further documentation is required to show the LDWS would meet the test requirements with other countries lane markings.

Clause 7.1 specifies the technical requirements of the United Nations Regulation No. 130 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE LANE DEPARTURE WARNING SYSTEM (LDWS), incorporating the original version of the regulation (00 series of amendments), including at least supplement 1 to the original version of the regulation, as an acceptable alternative standard to ADR 99/00.

To meet UN R130 as incorporated in Appendix A, a LDWS must be active at vehicle speeds above 60 km/h (unless manually deactivated). If a means (e.g. switch) is provided to manually deactivate the LDWS, the LDWS function must be automatically re-instated at the start of each new ignition on (run) cycle, and a constant optical warning must be provided to inform the driver when the LDWS is deactivated. The LDWS is required (when active) to warn the driver if the vehicle crosses over a visible lane marking, when there has been no purposeful demand to do so (including for both straight sections, and curved sections having an inner lane marking with a radius ≥ 250 m). The performance of the LDWS is assessed in a series of four tests conducted at a speed of 65 ± 3 km/h. Two of these tests are performed by gently drifting the vehicle to the left, so that the vehicle crosses the lane markings at two different rates of departure within the range 0.1 to 0.8 m/s. The other two tests are performed by gently drifting the vehicle to the right, so that the vehicle crosses the lane markings at two different rates of departure within the range 0.1 to 0.8 m/s. In all tests, the required lane departure warnings must be provided before the outside of the tyre on the front wheel closest to the lane markings passes more than 0.3 m beyond the outside edge of the lane markings. There are also failure warning signal and deactivation warning signal tests for the LDWS.

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

Clause 7.1 includes a reference to the United Nations Regulation No. 130 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE LANE DEPARTURE WARNING SYSTEM (LDWS), incorporating the original version of the regulation (00 series of amendments), including at least supplement 1 to the original version of the regulation. This is an international standard for LDWS fitted to omnibuses, and goods vehicles over 3.5 tonnes.

The introduction, and paragraphs 1 and 4.4.1 of 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. This includes definitions for the UN vehicle category classifications used in Appendix A and the alternative standard under clause 7 of ADR 99/00.

Paragraph 5.1.2 of Appendix A includes a reference to the United Nations (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.

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 and 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 LDWS forms an integral part, from 27 April 2021 to 30 June 2021.

A draft ADR 99/00 based on the United Nations Regulation No. 130 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 LDWS 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 99/00 on LDWS. The OIA reference number for the IA is 21-01048.

5.2. Benefits and Costs

There are both benefits and costs associated with mandating LDWS for goods vehicles that are over 4.5 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 LDWS reduces the risk of a heavy vehicle having a fatal or serious injury crash by 4.4 per cent and costs $2,560 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 99/00 specifies requirements for LDWS fitted to medium and heavy goods vehicles, to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane.

6.2. Human Rights Implications

ADR 99/00 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 99/00 is compatible with human rights, as it does not raise any human rights issues.