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Australia's program of adopting the UN ECE Regulations

Commission for Europe. In the 1990s these regulations gained international significance. The World Trade Organization (WTO) rules promote adoption of international technical standards. A trading nation such as Australia is vulnerable to legal challenge if it imposes national technical standards without providing an acceptance path for compliance with international standards, such as the UN ECE model vehicle regulations. Hence it was imperative for Australia to join this project.

I used the term 'Eurocentric' previously because of the history of this process. For the past 30 years or so the UNECE has been developing global model regulations but the North American countries – USA, Canada and Mexico were not participants. The USA and Canada do not have a 'type approval' vehicle system. The governments in these countries do not issue vehicle manufacturers with approvals to market vehicle models. The UNECE regulations are structured for type approval. To overcome this impediment for the USA and Canada, a series of Global Technical Regulations have been developed. These are technical standards that could be implemented by any country irrespective of the regulatory structure. The GTRs need not be based upon the UNECE Regulations, but often are. Development of the GTRs has been very slow because some requirements are contested between north American and European interests. There are currently 24 released GTRs. In contrast there are about 167 UNECE model regulations.

Australia has a successful truck and trailer manufacturing sector because of its ability to innovate, build quality

equipment and to supply niches that have been opened by liberalisation of length and configuration rules. Price is not the key success factor in the heavy-duty Australian market. Safety and driver comfort is growing in importance here. This is a domain that European truck designers have been leading. The UNECE process can lead to an approval certificate relevant to a particular regulations for a component or vehicle. For example, a seat manufacturer in the USA could obtain approval UNECE certificates for Regulations 14, 16 and 17 issued by a European authority based upon tests conducted in the manufacturer's laboratory that were witnessed by an accredited test authority. These certificates open the market for the USA seat manufacturer into international markets. The UNECE certificates provide the path for international acceptance because participating countries have agreed to accept them.

The Tables show the Australian Design Rules that have been harmonised fully or partly with the UNECE model regulations for heavy freight vehicles only (categories NB2, NC and TD). The project is near complete. Some ADRs do not have a path via a UNECE Regulation because they are mainly specific to Australia (B-double and roadtrain related). Some ADRs are not harmonised, or allow alternate standards, because the Australian heavy vehicle sector has practices and vehicle types that are not found in Europe (such as the brake rules). Some ADRs have been harmonised but provide alternate paths to allow 'traditional' Australian truck practices, such as flat mirrors.

Categories NB2, NC, TD only	ADR base number	Total
Applicable ADRs that are based upon a UNECE Regulation	1/00 (R23), 3/04 (R17), 4/04 (R16), 5/06 (R14), 6/00 (R6), 8/01 (R43), 13/00 (R48), 14/02 (R46), 18/03 (R39), 46/00 (R8), 47/00 (R3), 48/00 (R4), 49/00 (R7), 50/00 (R19), 51/00 (R37), 52/00 (R38), 74/00 (R91), 83/00 (R51), 84/00 (93), 90/00 (R79), 92/00 (R26), 93/00 (R125), 94/00 (R28), 97/00 (R131), 108 (R158),	25
Applicable ADRs that have an UNECE Regulation as an alternate (non-exclusive) path.	30/01 (R24), 35/06 (R13), 38/05 (R13), 62/02 (R55), 80/04 (R83), 96/00 (R54)	6
Applicable ADRs with no UNECE Regulation path	42/05, 43/04, 44/02, 45/01, 61/03, 63/00, 64/00, 65/00.	8

The Australia Regulator for new vehicles is the transport division within the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA). Before additional design regulations are applied to new vehicle suppliers, the Australian Government will usually consult with industry and produce a regulation impact statement (RIS). More onerous regulations must be studied, explained and justified in the RIS. The process involves identification of alternatives to the regulation, costs and benefits. Producing a RIS is a detailed process that can take 24 months or more. The quality of the Regulation Impact Statement must be 'approved' by the Federal Government's Office of Impact Analysis. Ultimately a minister will decide to accept or reject the proposal. New or amended design rules are often introduced with a two-or three-year lead time. Typically, the new requirements are applied to 'new models' (that is new applications in ROVER) before they apply to existing models. Development of a new Australian Design Rule is a five-year project. So what is new from the UNECE and what might be adopted in Australia? There are currently 167 released UN ECEC model regulations and Australia has only adopted/harmonised with about a quarter of them. At present the Federal Regulator is negotiating with industry to allow 2.55m wide new vehicles as are allowed in Europe. There will be additional safety requirements applied to these vehicles and they will be based upon UNECE regulations. The UNECE does the hard

work of developing technical regulations for road (and agricultural) vehicles. Australia is a participant in the process, as it should be. Australia is the world leader in allowing long and heavy vehicles onto metropolitan roads and the UNECE has a lot to learn from Australia's experience. Australia will often vary the regulations to provide for local requirements.

My assessment of the regulations that could possibly be adopted in Australia applicable to heavy-duty vehicles are shown in Box 1. There are many potentially important developments in this list.

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Box 1 - UNECE Regulations that could be adopted for Australian heavy vehicles:

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| 1. Regulation 10 Electromagnetic Compatibility. | 15. Regulation 153 – Fuel System Integrity and Electric Powertrain Safety for Rear-End Collisions. |
| 2. Regulation 34 Fire Risks/Fuel Systems. | 16. Regulation 155 – Cyber Security and Cyber Security Management Systems. |
| 3. Regulation 100 Electric Power Trained Vehicles. | 17. Regulation 156 Software Update and Software Update Management Systems. |
| 4. Regulation 101 CO2 Emission/Fuel consumption. | 18. Regulation 157 – Automated Lane Keeping Systems (ALKS). |
| 5. Regulation 104 Retro-Reflective Markings. | 19. Regulation 158 – Devices for Means of Rear Visibility or Detection. |
| 6. Regulation 118 Fire Resistance of Interior Materials. | 20. Regulation 159 – Moving Odd Information System (MOIS). |
| 7. Regulation 121 Identification of Controls, Tell-tales and Indicators. | 21. Regulation 160 – Event Data Recorder (EDR). |
| 8. Regulation 130 Lane Departure Warning Systems (LDWS). | 22. Regulation 161 – Devices Against Unauthorized Use |
| 9. Regulation 131 Advanced Emergency Braking Systems (AEBS). | 23. Regulation 163 – Vehicle Alarm Systems. |
| 10. Regulation 134 Safety and Related Performance of Hydrogen-fuelled vehicles (HFCE). | 24. Regulation 165 – Reverse Warnings. |
| 11. Regulation 138 Quiet Road Transport Vehicles with Regard to Reduced Audibility. | 25. Regulation 166 – Vulnerable Users in Front and Side Close Proximity. |
| 12. Regulation 141 Tyre Pressure Monitoring Systems. | 26. Regulation 167 – Approval of Motor Vehicles with Regard to Their Direct Vision. |
| 13. Regulation 144 Accident Emergency Call Systems (AECS). | 27. GTR 5 – On-board diagnostic systems (OBD) for road vehicles. |
| 14. Regulation 151 – Blind Spot Information System for the Detection of Bicycles. | 28. Other work is ongoing, such as battery durability requirements for electric heavy-duty vehicles. |