

The Pastoralists & Graziers Association of WA (Inc)

Submission to

**Main Roads WA
on the**

Roll Coupling Policy



3 July 2026



Introduction

The Pastoralists and Graziers Association of Western Australia represents agricultural producers who rely on heavy vehicle combinations daily across regional and remote WA.

In developing this submission we have consulted a range of industry stakeholders, including experienced heavy vehicle designers and operators, in response to the proposal to mandate roll-coupled rear connections for road trains.

While we acknowledge the intent to improve safety, we believe the proposed policy is narrowly focused on a single hardware solution. Our primary concern is that it addresses a symptom of a broader systemic problem rather than the root causes of instability, which are deeply embedded in the existing regulatory framework, vehicle design constraints, and, critically, human factors.

The PGA is concerned that a contract to develop an engineering solution was awarded **prior to any industry consultation** on the full range of contributing factors – including regulatory design constraints, vehicle geometry, operational practicality and human factors.

We offer the following points for consideration, grounded in practical engineering and substantial operational experience.

1. Engineering and Regulatory Factors

1.1 Transparency and Conflicts of Interest

The PGA is concerned that this policy is being presented as a *fait accompli*, with little evident consultation on alternative solutions. We respectfully request access to the research and investigations that informed the determination that an engineering hardware solution is the most appropriate response to the rollover problem.

Given that a patent exists for the specific roll-coupling device under consideration, **we seek assurance that all potential conflicts of interest have been identified, declared, and made public**. Transparency in this matter is essential to maintain industry confidence in the policy development process.

1.2 The Impact of Current Design Rules on Stability

The current regulatory environment inadvertently forces vehicle designers to build instability into road train combinations. The combined effect of prescriptive rules regarding overall length, axle spacing for bridge loading, and rear under-hang significantly constrains the designer's ability to optimise the vehicle's geometry.



The position of the rear articulation point relative to the trailer's axle group is a primary determinant of a trailer's tracking behaviour. A rearward coupling position creates a long lever arm, which generates significant lateral "whip" at the rear of the trailer. This movement is then amplified by each subsequent trailer in a multi-combination, leading to poor tracking and a tendency to "walk" or sway. Conversely, positioning the coupling closer to the axle group minimises this lever effect, dramatically improving stability and true tracking.

Feedback from numerous experienced operators and trailer builders confirms that to comply with overall length limits and bridge loading requirements, designers are often forced to position axle groups in a way that pushes the articulation point further rearward. The current prescriptive rules lock the designer into a geometry that is inherently less stable, effectively mandating the conditions that contribute to rollover incidents.

It is counter-productive for the same regulations that force this instability upon the design to then be used as a basis to mandate a costly hardware fix. **The fundamental issue is the geometry of the vehicle, which is a design problem, not a coupling problem.**

1.3 Limitations of the TigerSpider Analysis

The engineering analysis cited to support this policy appears to rely on a narrow set of assumptions that may not be representative of the wider fleet. For example, it appears to use a single, generic Centre of Gravity (CofG) figure. This value may be suitable for certain vehicle types, such as those carrying dense commodities where the load is low and concentrated over the axles.

However, it is not representative of the diverse operating conditions in Western Australia. For instance, vehicles transporting bulk commodities like grain typically have a much higher Centre of Gravity, making them inherently more susceptible to rollover. By using a single averaged figure, the analysis fails to capture the true risk profile of the higher-CofG vehicles.

We formally request that the full data, assumptions, and methodology behind this analysis be made available for independent industry review. A webinar presentation of the final decision is not sufficient. A robust evidence base must account for load type, trailer design variations, and operational context. Without this transparency, it is difficult to accept the conclusion that one specific hardware solution is the only answer.

1.4 Operational Practicalities and Suitability

The proposed system raises significant practical concerns. It is not suitable for all road train configurations. Experienced operators advise that while it may suit specific applications like side-tippers, it is inappropriate for road trains used for livestock or general freight.

The proposal does not adequately address the practical implications for drivers. Drivers are sometimes required to couple and uncouple trailers multiple times per day. A more complex system introduces new Occupational Health and Safety risks and increases the time and effort required for these routine tasks. The additional weight, maintenance, and interoperability challenges with existing fleet equipment are also significant and unresolved concerns.

2. The Human Factor: A Critical Missing Element

2.1 Root Cause Misidentification

The proposed policy treats a mechanical symptom while largely ignoring the human factors that our members identify as significant contributors to rollover incidents. You cannot engineer your way out of a problem rooted in human performance and limited training.

2.2 Experience and Competency

There is a troubling correlation between rising incident rates and the growing proportion of drivers who do not have the foundational experience that Australian conditions demand. This is a problem with many international drivers now employed in the Western Australian trucking industry. Most experienced Australian truck drivers develop an intuitive understanding of how a combination responds to wind, camber, load distribution, and emergency braking – skills that are honed over years on WA's demanding and often unforgiving road network. This knowledge is not learned in a classroom; it is gained through years of on-road experience.

This foundational knowledge cannot be fast-tracked. It requires structured, supervised training. However, we recognise that implementing effective training models incurs real costs for operators. Many smaller companies cannot afford dedicated supervisors, and there is also the sobering reality that a single incident during training could result in two fatalities instead of one. These constraints must inform any meaningful training reform.

2.3 The Value of Simulator Training

Consultation with a regional Western Australian logistics and training company reveals the immense value of high-fidelity simulators in developing competent, safe drivers. However, the prohibitive cost—approximately \$1 million per unit—places this technology far beyond the reach of most training providers. Government investment to subsidise or support the wider adoption of simulator-based training in WA would deliver a direct and measurable return on investment in safety. This would be a far more effective use of public funds than



mandating complex new engineering standards designed to compensate for inadequate driver training.

2.4 Human Factors Data

We are not aware that the crash data analysis has examined driver demographics, licensing history, language proficiency, or training backgrounds. Without this information, it is premature to conclude that a hardware solution is the most effective or appropriate intervention. **We strongly recommend a comprehensive human-factors review before any mandate is imposed.**

Recommendations for a More Effective Approach

We recommend a holistic, root-cause approach that addresses the real issues, including:

A. Reform of Design Regulations: Revisit the prescriptive design rules that inadvertently force instability into trailer designs. The key is to allow designers to optimise vehicle geometry, particularly the position of the articulation point, to create inherently more stable combinations. This single change would have a more significant impact on stability than a hardware mandate.

B. Human Factors and Competency: Prioritise investment in developing robust, practical training pathways for multi-combination vehicle operators. This should include graduated competency pathways, models for practical supervision that account for operator costs and safety, and support for a culture of continuous learning and safety. Critically, government should invest in making high-fidelity simulator training more accessible across Western Australia. The proven effectiveness of simulators—demonstrated by operators such as Fenix Newhaul in Geraldton—is beyond question, yet the prohibitive cost of approximately \$1 million per unit places this essential training tool out of reach for most providers. Public funding to subsidise or support shared simulator facilities would deliver a tangible safety dividend and represent a far more effective investment than mandating costly hardware solutions designed to compensate for inadequate training.

C. Enhanced Data Collection: Improve the collection of data on rollover events to include critical human and operational factors such as driver experience, licensing history, language proficiency, load type and distribution, and road conditions. A proper evidence base is essential for developing effective, targeted solutions.

D. Genuine Industry Consultation: Engage comprehensively with experienced operators, designers, and engineers to develop practical, evidence-based solutions. The industry is committed to safety and possesses the practical knowledge necessary to improve it.



Conclusion

The proposed roll-coupling policy is a costly and ill-targeted "band-aid" solution for a complex problem. It ignores the primary engineering cause of instability—a geometric design problem embedded in the current regulatory framework—and fails to address the significant human factors that drive incident rates. We oppose the mandate in its current form and urge the authorities to pursue a more thorough, collaborative, and effective approach to improving the safety of Western Australian road trains. We are prepared to assist in gathering data and contributing practical insights to support a more robust and evidence-based path forward.

Yours faithfully



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