

New Initiative Form

This form must be used to socialise new proposals to the NHVR Technical Working Group (TWG) and will be used to seek views and gain the understanding of and input from members and key stakeholders. It will be used to ensure new proposals are well articulated so they can be properly assessed by the TWG to progress to the NHVR's Forward Work Implementation Proposal phase.

Completion Responsibility	NHVR Vehicle Safety and Performance Unit
Proposal Name	Impact of safety chains during coupling separation
Date	21 October 2016

Initiative Purpose/ Problem Addressed

Trailer separation incidents occur relatively frequently and have the potential to result in death, serious injury and damage to property and infrastructure.

Under current regulations, safety chain attachment points must be fitted to every towbar that is fitted to a heavy vehicle, excluding vehicles designed for use in Road Trains. Additionally, safety chains must also be affixed to the drawbar of all rigid drawbar trailers (excluding converter dollies) and any other trailer that is not fitted with an emergency brake system. Despite these mandatory fitting requirements on individual vehicles, there are no in-service regulations that mandate that safety chains, when fitted, are used.

The intent of requiring safety chains to be fitted and used, is to provide a secondary method of attachment between a trailer and the towing vehicle that prevents separation of the trailer in the event the primary coupling fails. The NHVR is of the opinion that given the safety benefits that safety chains offer, mandatory use of safety chains for all couplings between heavy vehicles, excluding where a fifth wheel is used, should be investigated through a detailed cost-benefit analysis and regulatory impact assessment.

Historically, concerns have been raised over whether a combination would become unsafe to operate should the primary coupling fail and safety chains kept the trailer in tow. To address this, the NHVR believes that research should be undertaken to determine what impacts safety chain engagement has on vehicle control.

Recently, research has been undertaken to investigate the performance of a combination in the event of a primary coupling failure. This research, which used a rigid body truck with an automatic pin coupling connected to a dog trailer with a hinged drawbar, demonstrated that a combination can be safely controlled and stopped in the event of a coupling failure when safety chains are used.

Because of the combination used in this research, the findings may not be able to be extended to other combinations that use different component vehicles and coupling types. If correctly configured, the coupling in the tested combination would not be subject to significant vertical loads as the dog trailer would support its own weight and the hinged drawbar should impose minimal vertical load on the connection.

To complete this package of work, the NHVR proposes that additional research is undertaken on different types of combinations and couplings. This may include a combination where the trailer does not totally support its own mass, such as a pig trailer, and a coupling that is subject to notable vertical loads, such as a ball type coupling.

Out of Scope

- Any amendments to the heavy vehicle standards regulation or Australian Design Rules relating to couplings or safety chain and their attachments.
- Investigation of introducing mandatory use of safety chains on any type of trailer.

Cost-Benefit Analysis

The ability of heavy vehicles to safely tow a trailer is essential to road safety and the community as well as operators and drivers should be confident that industry is safe and systems and components have in-built redundancy.

The economic consequences of crashes is well known and although obtaining data associated with trailer separations as a cause of heavy vehicles crashes is difficult we can estimate that there are significant community savings to be made by ensuring heavy vehicles couplings are secure.

The social implications of heavy vehicle road crashes affect operators, drivers and their families and the community through road trauma and dealing with the aftermath of such events can be life-long. Efforts to reduce these incidents contribute greatly to improving social outcomes within many communities of interest.

Estimated Duration

Given the need to seek funding for this research, completion of this project would not be likely prior to December 2017.

Estimated Proposal Cost

Due to the design and testing involved in this project, it is likely that the services of a consultant engineer would need to be engaged. The NHVR estimates this consultancy, including associated vehicle testing, is likely to cost up to \$250,000 to complete. Depending on the level of in kind support from industry through contributions such as providing vehicles and components for testing, this cost could be reduced.

Estimated Resource Required

The NHVR estimates that a part-time equivalent resource of .25 is required to manage and completed this proposal. The NHVR is unable to ascertain what industry requirements might be but can assume that it would be equivalent to that of the NHVR's for those organisations actively participating over the projects life-cycle.

External Consultation/ Engagement Require

There is a requirement for ongoing consultation with industry, operators and equipment manufacturers and it is the NHVR's expectation that industry associations on the TWG will provide members with updates on the progress of the project. The NHVR will keep jurisdictions apprised of the progress as well as general information through our industry updates and newsletter. It is expected that equipment manufacturers will be advising clients of the projects progress where required. A communication plan will be required to alert industry, operators and drivers to any new testing requirements and a call to action about how they can assist with any potential change.

Industry Expectations

- That the NHVR considers the safety of all policy proposals and ensures that regulatory action is justified by evidence, improves safety and/or productivity.
- That the NHVR approaches research in a collaborative manner that leverages the expertise of industry associations and vehicle operators.

Community/ Stakeholder Expectations

- That robust regulatory requirements are implemented that ensure the safety of heavy vehicles that tow trailers.
- That policy proposals promote best practice and are justified by evidence, improves safety and/or productivity.

Estimated Proposal Size (if known)

Small

Medium

Large

Chair Recommendation

The TWG are encouraged to support the adoption of this proposal. The establishment of a TWG sub-group is recommended to progress this proposal to assist the NHVR deliver in a timely manner. The sub-group might consist of:

- industry associations – ATA, NBTA, BIC
- vehicle and trailer manufacturers – HVIA, TIC, ARTSA.

The NHVR is unaware of any other work or projects being undertaken either in Australia or internationally in regards to this or a similar like proposal.

Approval to proceed to Forward Work Implementation Proposal

Technical Working Group Chair

<input checked="" type="checkbox"/>	Approved	Name: Geoff Casey	Title: Chair Technical Working Group
<input type="checkbox"/>	Rejected	Signature:	Date: 18 November 2016