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A bug deflector that is installed on the front top lip of a truck engine bonnet will alter the driver's view of the road ahead of the truck. How much of the road in front of a heavy truck should the driver be able to see when a bug deflector is installed? The answer will determine whether a truck that has a bug deflector on the front of the bonnet (or a low sunvisor), is 'legal'. It is also relevant to the safety of pedestrians and cyclists when they are close to the front of the truck, and the vulnerability of the driver to sanction, should a collision occur. Truck manufacturers must comply with the Australian Design Rules (ADRs). ADR 42 General Safety specifies visibility requirements to the front and sides. ADR 42 requires that the vehicle be constructed "so that the driver has an adequate view of traffic on either side, and to the front of the vehicle". There is no measurable specification, and it is left to the discretion of the manufacturer to decide what an "adequate view" of the road is. This type of rule cannot be applied to in-service vehicles because there is no measurement limit to be met. The ADRs were never developed to be in-service rules. Section 85 of the heavy vehicle national law requires that modifications be approved. The approval can be made by an

Is your bug deflector legal?

accredited engineer (called an AVE) or by the National Heavy Vehicle Regulator (NHVR) via a declaration. A modification is defined as a change to the vehicle outside the manufacturer's specification. While the NHVR can declare a modification as minor, bug deflectors (and sunvisor) installations have not been excluded, so unless the vehicle owner installs the original equipment manufacturer's bug deflector (or the sunvisor), the modification must be approved by an AVE and a certificate obtained. There is also no guidance given about forward visibility in the National Heavy Vehicle Inspection Manual (NHVIM) that has been 'authorised' by the NHVR and is widely used by roadworthiness inspectors. Neither this inspection manual nor the heavy vehicle national law or its regulations provide a specification for forward (or side) field of view. The Truck Industry Council (TIC) has a code of practice for forward visibility, but it has no legal status. In summary, there is no regulated specification that can be applied to determine whether a bug deflector (or a low sunvisor) causes an unacceptable field of view at the

front or side of a heavy truck. It is likely that a stainless-steel (opaque) bug deflector, which is commonly observed on bonneted trucks, is not legal. The driver is vulnerable in the event of a collision with a pedestrian or cyclist. This unsatisfactory situation is the result of visibility immediately in front of a bonneted truck being largely ignored in the design rules and road worthiness rules. Technology now exists that allows the visibility problem to be solved. The rules should be changed to ensure that the driver has a view immediately in front of the truck by providing a measurable specification applicable to all trucks.

Dr Peter Hart,
Chairman, ARTSA-i

UNCOMING ARTSA EVENTS

- 24 July, 2024 – Auburn Hotel, Auburn, Vic. Dinner meeting with guest speakers.
- 12 September, 2024 – Life Saving Victoria, Port Melbourne. State of Industry Day.
- ARTSA membership is free for the remainder of 2024. See the website at:



Figure 1: An opaque bug deflector on a bonnet truck is probably illegal.

the requirement that a 300mm diameter cylinder that is 1200mm high must be at least partially visible to the driver in the space 2000mm in front of the vehicle. This rule could be met by a Cab-Over-Engine (COE) truck, for which the driving position is forward, and the windscreen is at the front. As written, this rule cannot be met by most bonneted truck models. However, if the rule allowed using a bonnet mirror or a front facing camera system, the specification could be met using alternate methods.

Truck manufacturers have not been forced to deal with the road visibility issue because the design rules are completely inadequate in this context. The Federal Government has not adequately considered the public interest involved with road visibility. The ADRs should require all trucks to be constructed so that the roadway immediately in front of the truck can be seen by the driver using either direct or indirect vision methods.

Section 85 of the heavy vehicle national law requires that modifications be approved. The approval can be made by an accredited engineer (called an AVE) or by the National Heavy Vehicle Regulator (NHVR) via a declaration. A modification is defined as a change to the vehicle outside the manufacturer's specification. There are a few minor modifications, such as fitting a CB radio aerial or installing an air conditioner, that the NHVR has declared to be excluded from the approval requirements. Bug deflectors and sun visors have not been excluded by the NHVR, so unless the vehicle owner installs the original equipment manufacturer's bug deflector (or the sunvisor), the modification must be approved by an AVE and a certificate obtained. Either the selling dealer, the installer or the owner is obliged to get the installation of a bug deflector (or a sunvisor) approved, unless an OEM option is installed. It is very rare for an AVE to be engaged to approve a bug deflector or sunvisor installation. How should the AVE assess the visibility implications?

The Truck Industry Council (TIC) attempted to fill the void created by the lack of a practical ADR visibility specification, in its '*code of practice to ensure an adequate field and clarity of view*' (currently at version 4, 2019). This requires that the roadway can be seen at 11m in front of the driver's eye position, or otherwise not further than the original equipment manufacturer's design allows (which could be 20m). It also requires

that a bug deflector have a 70% visible light transmission level. This TIC code has no legal status and has not been 'registered' by the NHVR.

There is no guidance given about forward visibility in the National Heavy Vehicle Inspection Manual (NHVIM) that has been 'authorised' by the NHVR and is widely used by roadworthiness inspectors. Neither this inspection manual nor the heavy vehicle national law or its regulations provide a specification for forward (or side) field of view.

Furthermore, the indirect visibility (mirror rule) ADR 14 has a path that allows bonneted trucks to not comply with the UN ECE visibility specification to the sides and rear of a heavy vehicle. The non-UNECE path should be deleted. I wrote about this back in Prime Mover - March 2021.

In summary, there is no regulated specification that can be applied to determine whether a bug deflector (or a low sunvisor) cause an unacceptable field of view at the front or side of a heavy truck. In this situation, uncertainty reigns and enforcement officers will apply discretion. It is likely that a stainless-steel (opaque) bug deflector, which is commonly observed on bonneted trucks, is not legal. Additionally, a stainless steel sunvisor that is lower at the centre-front of the windscreen than the 'shadow band' is probably not legal. The driver is vulnerable in the event of a collision with a pedestrian or cyclist. This unsatisfactory situation is the result of visibility immediately in front of a bonneted truck being largely ignored in the design rules and road worthiness rules. Technology now exists that allows the visibility problem to be solved. The rules should be changed to ensure that the driver has a view immediately in front of the truck by providing a measurable specification applicable to all trucks.

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Figure 1 – The red cylinders, which are 1200mm high, must be at least partially visible to the driver (ADR 93).

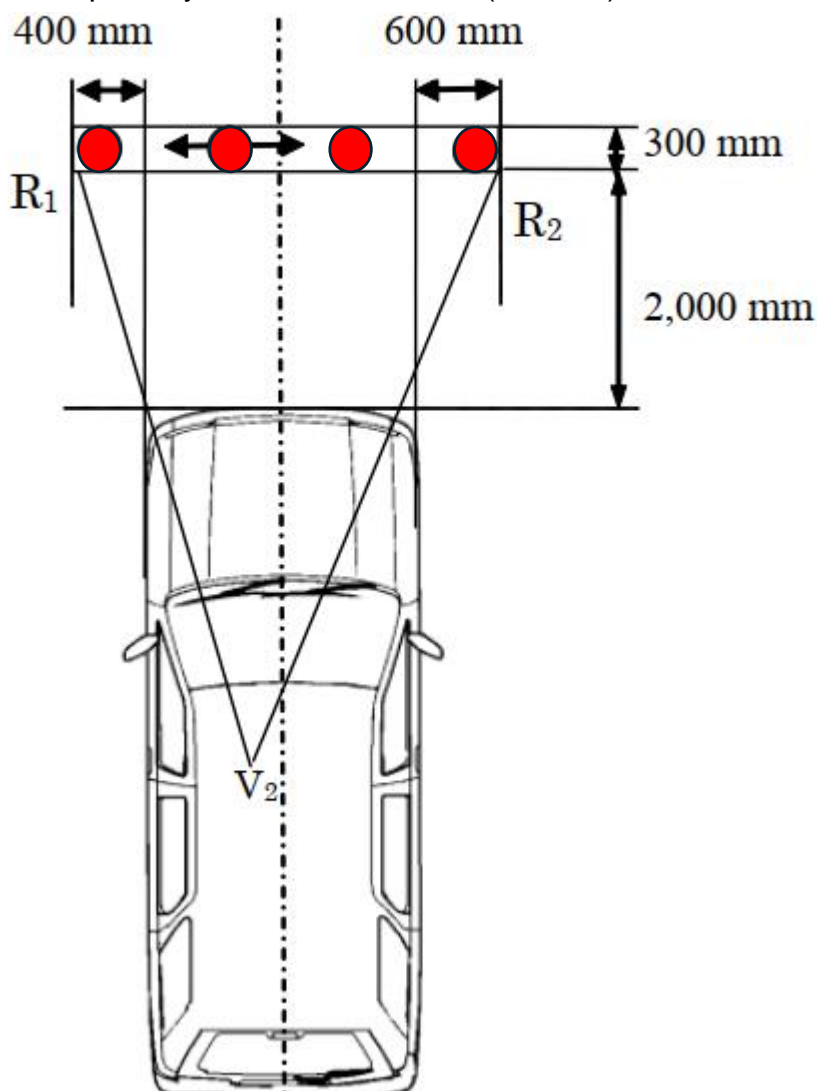


Figure 2 – An opaque bug deflector on a bonnet truck is probably illegal.

