National Heavy Vehicle Inspection Manual

Amendment Summary

Version 2.4 (February 2020) to Version 3 (October 2021)

The Heavy Vehicle Inspection Manual has been reviewed and updated to align with amendments to the *Heavy Vehicle National Law* and Regulations effective from 18 October 2021. Version 3.0 includes multiple amendments which are highlighted below.

Section 1 - Vehicle Identification

1.1 Check the identity of the vehicle

Reasons for rejection

c) VIN/chassis number/secure vehicle identification marking has been removed, altered or tampered with

f) A motor vehicle manufactured from 1 August 1972 and has not been previously registered in Australia and is not:

- fitted with an Australian Identification (compliance) Plate:
- Second Stage of Manufacture plate,
- Low Volume plate,
- RAWS Import plate, or
- is not listed on the Register of Approved Vehicles (RAV).

g) A heavy omnibus (ME category) or trailer is not fitted with a vehicle plate

~~h) For a vehicle that is used in a road train or B-double combination, the vehicle plate does not include the words~~

- ~~"ROAD TRAIN" and/or "B-DOUBLE"; and for a trailer~~
- ~~designed for use in a road train, the words "ROAD TRAIN~~
- ~~TRAILER"~~

i.) A motor vehicle that is used in a road train or B-double combination, is not:

- Fitted with a vehicle plate include the words "ROAD TRAIN" and/or "B-DOUBLE"
- Fitted with a modification plate certifying the modification, or
- listed as Road Train and/or B-Double on the RAV

~~i) For a vehicle that has been modified for use in a road train or B-double combination, the vehicle is not fitted with~~

- ~~a modification plate certifying it to code S8 (Road Train~~
- ~~Prime Mover), S9 (B-double Prime Mover) or S11 (Road~~
- ~~Train Trailer) of VSB6.~~

j) A trailer that is used in a road train combination, is not:

- Fitted with a vehicle plate include the words "ROAD TRAIN"
- Fitted with a modification plate certifying the modification, or
- listed as Road Train on the RAV

Section 2 - Brakes

2.1 Check brake components

Reasons for rejection

d) Vehicle is not equipped with an effective mechanical park brake

Mechanical park brake refers to the engagement of the brake and not the activation method. Some late model vehicles are equipped with an electric park brake control switch and not a traditional lever. These electronic park brake control switches are considered to comply.

q) Air or hydraulic cylinders, hoses or chambers on sliders leak

It is acceptable to have normal weeping of hydraulic seals

r) Brake components are mismatched on the same axle i.e. booster size and volume

~~s) In the case of hydraulic, or air-over-hydraulic brakes, the reservoirs, master cylinders or servo units are loose, cracked, broken, or excessively worn or are damaged so that leaks are likely~~

s) Brake components are mismatched on the same axle i.e. booster size and volume.

u) Hydraulic or air-over-hydraulic brake system components, such as reservoirs, master cylinders or servo units, are loose, cracked, broken, or excessively worn or are damaged so that leaks are likely.

~~u~~x) ~~In the case of~~ hydraulic, or air-over-hydraulic brake~~s,~~ system ~~the fluid level in a~~ master cylinder reservoir fluid levels are ~~is~~ below the minimum level.

y) There are any air/vacuum or hydraulic leaks

z) The brake controls of the towing unit do not cause the corresponding trailer brake to work when they are operated

2.2. Check brake adjustment

Additional information and diagram added

The push or pull rod may travel further on long stroke brake chambers. Further information on long stroke brake chambers can be sought from the brake component manufacturers or industry advisory documents

2.3. Check air compressor/vacuum pump

Reasons for rejection

d) ~~For vehicles fitted with compressed air brakes, the air compressor~~ The air compressor of a compressed air brake system does not build up air pressure to at least 80% of the vehicle's governor cut-out pressure in five minutes after the compressed air reserve is fully used up.

2.4. Check air filters

Reasons for rejection

a) Any air compressor or vacuum pump filter units are not fitted, or are loose, blocked or damaged.

2.6. Check vacuum assisted brake system integrity

Reasons for rejection

e) Vehicle fitted with a vacuum braking system is not fitted with at least one vacuum storage reservoir or tank

f) The reservoir or tank for vacuum or air storage is not protected by a check valve with manual function

g) Reservoirs are not secured or their mountings are deteriorated

~~g~~h) Vacuum ~~is not available as soon as the engine starts, or~~ build up time to reach the low vacuum mark (to deactivate the warning device) is longer than 30 seconds from starting engine.

2.7 Check air brake system integrity (including air over hydraulic)

Reasons for rejection

i) Air reservoir drain valves on reservoirs do not work properly cannot be readily operated by the driver/ operator or the valve is not fitted at the lowest point of the reservoir

~~2.14 Check trailer brakes and breakaway protection~~

~~The examiner should seek the assistance of another person in order to make a thorough check of the breakaway protection. Reasons for rejection~~

~~a) A truck trailer interconnecting flexible hose and coupling is not properly mated or secured~~

~~b) The trailer brakes are not capable of being applied and released from the normal driving position~~

~~c) For a towing vehicle that is configured to tow a trailer with air or vacuum assisted brakes, there is no visible or audible warning device to alert the driver of the towing vehicle, while the driver is in a normal driving position, of~~

~~a lack of air or vacuum~~

~~d) In an air operated brake system when any trailer hose coupling or connection is disconnected to simulate a breakaway situation, the rate of loss in air pressure in the towing vehicle's service brake system is more than 15kPa per minute after stabilisation.~~

~~Note: If an invasive inspection of brake components is necessary, it should be carried out in accordance with the procedure in Australian Standard AS 3617 Parameters for the machining and reconditioning of brake drums and discs~~

2.9 Brake testing & 2.10 Parking brake test for vehicle designed to ADR 35

dot points combined into brake testing and park brake testing sections

2.11. Advanced Braking Systems

Reasons for rejection

~~2.15~~ 2.11 b) An advanced braking system component (wheel speed sensor, etc) is missing or damaged or substituted (e.g. manual slack adjuster in lieu of auto slack adjuster) to an extent where it does not perform its intended function.

Section 3 – Couplings

3.1 Check fifth wheels and turntables

Reasons for rejection

e) Fifth wheel or turntable mounting plate or sub- frame assembly securing bolts are not ISO Class 8.8 (SAE Grade 5) or manufacturer's specification

h) ~~There is more than 5mm~~ horizontal movement exceeds manufacturer's specification, or 5mm where unknown between:

- the pivot bracket pin and bracket, or
- a slider bracket and slide base.

3.2. Check pin couplings, ball couplings and pintle hooks

Reasons for rejection

b) The ~~tow~~ ball coupling or hook assembly (e.g 127mm or hook type) is not legibly and indelibly marked with the manufacturer's name or trademark and the rated 'D-value'

c) Any fasteners or welds are deformed or cracked ~~fasteners including welds~~

e) The area that the ~~pin coupling or pintle hook~~ coupling is mounted on is loose or cracked or any locking mechanism is not fitted or is inoperative

~~f) The pin coupling or pintle hook welds have cracks~~

g) ~~Pin couplings or pintle hooks~~ Couplings are worn beyond the manufacturer's limits. If the manufacturer's limits are not known, any dimension on a wear surface of the horn of a pintle hook or pin coupling is worn more than 5% of the original diameter (see Figure 3.3)

~~h~~g) Any coupling pin or drawbar eye bush has wear ~~on the diameters of each of the coupling pin and the drawbar eye bush greater than~~ exceeding manufacturer's specification, or 1.5mm where unknown, at any point on their diameter.

~~i~~h) ~~Any transverse or circumferential welds on the~~ A drawbar eye block has any transverse or circumferential welds

3.3. Check towbar

Reasons for rejection

c) ~~Where ADR 62 applies, the towbar and towing ring~~ A towbar or towing ring, where ADR 62 applies, does not display:

- the manufacturer's name/trademark,
- the rating and
- the make and model of the vehicle/s for which it is designed

3.4. Check towing attachments

Reasons for rejection

~~e) The tow coupling capacity does not equal or exceed the aggregate trailer mass (ATM) of any trailer being towed (if applicable).~~

3.5. Additional information – Safety Chains

Reasons for rejection

All fixed or rigid drawbar ~~pig~~ trailers (other than a converter dolly) and any other trailers without breakaway brakes, require safety chains to be fitted.

Section 4 - Steering and Suspension

4.3. Check steering components under the bonnet/cab and under the vehicle

Reasons for rejection

o) Play at the end of the idler arm exceeds manufacturer's specification, or 8mm where unknown

q) ~~Any noticeable movement due to wear in any component exceeds~~ Steering components are worn beyond manufacturer's specification, or 3mm where this is unknown

r) ~~Tyres come into contact with any part of the vehicle through normal range of travel.~~ Any tyre fouls on any part of the vehicle through the normal range of travel.

4.4 Check suspension components

Superficial crazing is acceptable on rubber bushes. This is often present on rubber suspension components even when new. Some vehicle suspensions are designed to move within their rubber bushing considerably.

In some cases, suspension manufacturers utilise "voided" style bushes which allow significant articulation of suspension arms, etc. Where "voided" bushes are fitted please refer to the suspension manufacturer's inspection requirements

Reasons for rejection

b) Any bolts or fasteners do fully engage all threads of the nut

g) Any walking beam type suspension has signs of damage to beam

Shock absorber mountings or bushes are not secure or damaged.

Section 5 Wheels, Tyres and Hubs

New ADR's listed

ADR 42 General safety requirements
ADR 92 External Projection
ADR 95 Installation of Tyres
ADR 96 Commercial Vehicle Tyres

5.1. Check wheels and rims

Reasons for rejection

a) Any wheel or rim:

- is loose
- is missing
- is cracked
- is buckled
- has pieces of casting missing
- has elongated stud holes
- has weld repairs not in accordance with relevant industry practice.

5.4 Check tyres

Reasons for rejection

c) A tyre (including sidewalls) has deep cuts, exposed wire or cords, chunking, bumps, bulges or other signs of carcass failure

~~f) The vehicle has been fitted with a non-OEM front wheel (i.e. rim and tyre) that has not been approved as a modification~~

~~Note: For further information on modifications refer to Appendix B – Vehicle Modifications~~

Note: Tyres with the UNECE M+S or 3 Peak Mountains Snow Flake marking are manufactured to provide increased traction in mud or snow but are not considered to be fitted with cleats or a gripping device for the purposes of this document

Section 6 - Structure and body conditions

6.1 Check exterior body panels and fittings

Reasons for rejection

a) Any item ~~that is fitted to the tyre/rim/wheel (other than tyre pressure monitoring or inflation)~~ which is not technically essential to the vehicle, protrudes from any part of the vehicle so that it is likely to increase the risk of bodily injury to any person

b) Any item ~~that is fitted to the tyre/rim/wheel~~ which is technically essential to the vehicle, is not designed, constructed and affixed to the vehicle in a way that does not minimise the risk of bodily injury to any person

6.4 Check cabin and body condition

~~f) Any item that is fitted to the tyre/rim/wheel (other than tyre pressure monitoring or inflation) which is not technically essential to the vehicle, protrudes from any part of the vehicle so that it is likely to increase the risk of bodily injury to any person~~

Section 9 – mirrors

Reasons for rejection

d) Side Mirrors are not fitted to both sides of the motor vehicle

g) Folding side mirrors protrude more than:

• 230mm beyond the overall width of the vehicle when not folded

• 150mm beyond the overall width of the vehicle when folded

h) a blind spot mirror protrudes more than 150mm forward of the vehicle

Section 12 LPG, NG, Hydrogen and Electric Vehicles

Updated Figure 12.3 Acceptable LPG, NG, Hydrogen or Electric number plate label examples

For vehicles using electricity as a means of propulsion:

• The metal plate and label size shall be an equilateral triangle shape each side of which is 30mm in length

• The label colour shall be retroreflective blue, complying with AS/ NZS 1906.1, Class 2

• Is marked 'EV' in a white capital letters that are at least 10mm in height

12.2 Visually inspect for the presence of an approved hydrogen number plate label

Visually inspect for the presence of ~~an~~ approved hydrogen number plate labels.

12.3 Visually inspect for the presence of an approved electric vehicle number plate label

Reasons for rejection

a) A vehicle manufactured or modified from 1 January 2019 does not have an acceptable, durable and reflective number plate label fitted to the front and rear of the vehicle indicating it is hydrogen fuelled.

Section 13 – Busses

13.4 Check emergency exits

Reasons for rejection

h) The emergency exit is covered with a film and the vehicle no longer complies with, or cannot provide evidence of continued compliance with, ADR 44/.. Specific Purpose Vehicle Requirements or ADR58/.. Requirements for Omnibuses Designed for Hire or Reward (as applicable).

Note: Refer to Vehicle Standards Guide 8 (VSG8), for more information about the requirements that apply to applying films (advertising, vandal proofing, tinting and other films) to bus emergency exits.

~~h~~i) There is no 'EMERGENCY EXIT' sign displayed on the exit both inside and outside the bus

Section 14 – Trailers

Figure 14.2 Skid plate flatness limits

Note: The above diagram has been extracted from AS/NZS 4968.3:2011. The dimension of 960 mm is indicative only and is not the design size of the skid plate.

14.14 Check tyres

Reasons for rejection

a) A tyre does not have at least 1.5mm tread depth in the principal groove, in a continuous band which runs around the whole circumference of the tyre and extends across at least 75% of the width of the tyre

Note: Tread wear indicators are built into the principal groove of most tyres to indicate when tread depth reaches about 1.5mm. The depth of the tyre tread above these indicators is not included in the assessment of tread depth around the circumference of a tyre.

14.21. Additional information – Safety Chains

Reasons for rejection

All fixed or rigid drawbar ~~pig~~ trailers (other than a converter dolly) and any other trailers without breakaway brakes, require safety chains to be fitted.