

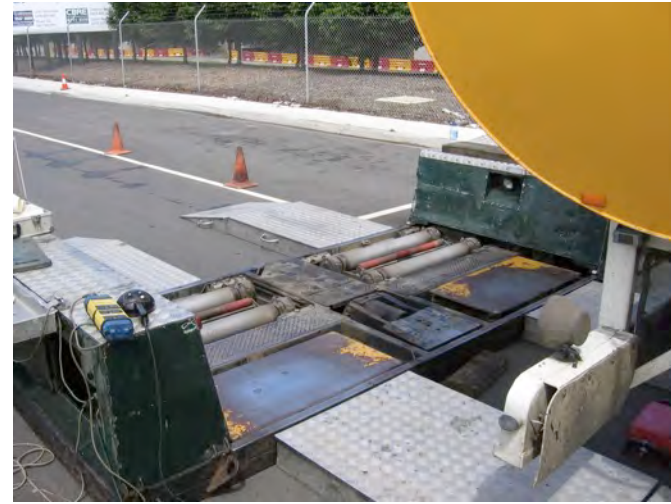


HV INSPECTIONS WHERE TO ??

Ross McArthur – VicRoads Manager Vehicle Safety and Policy



keeping victorians connected



OPERATION TRICULA



Operation Tricula

- Operations were led by VicRoads and included support from
 - Victoria Police
 - Worksafe
 - Sheriff's Office
- Focus: Heavy Vehicle Compliance roadworthiness, registration and fine collection



Defect Notices Issued

OPERATION TRISHULA						
	12/11/12 BRAESIDE	13/11/12 CLAYTON	14/11/12 LILYDALE	15/11/12 LYNDHURST	16/11/12 DANDENONG	Totals
Defect Notices						
Major	26	28	21	38	37	150
Minor	16	25	31	20	10	102
Total defective	42	53	52	58	47	252
Total Checked	65	67	65	69	54	320
Percentage of Defective Vehicles	65%	79%	80%	84%	87%	79%



**VICROADS OFFICER
TRAINING
and
Transition to NHVR**





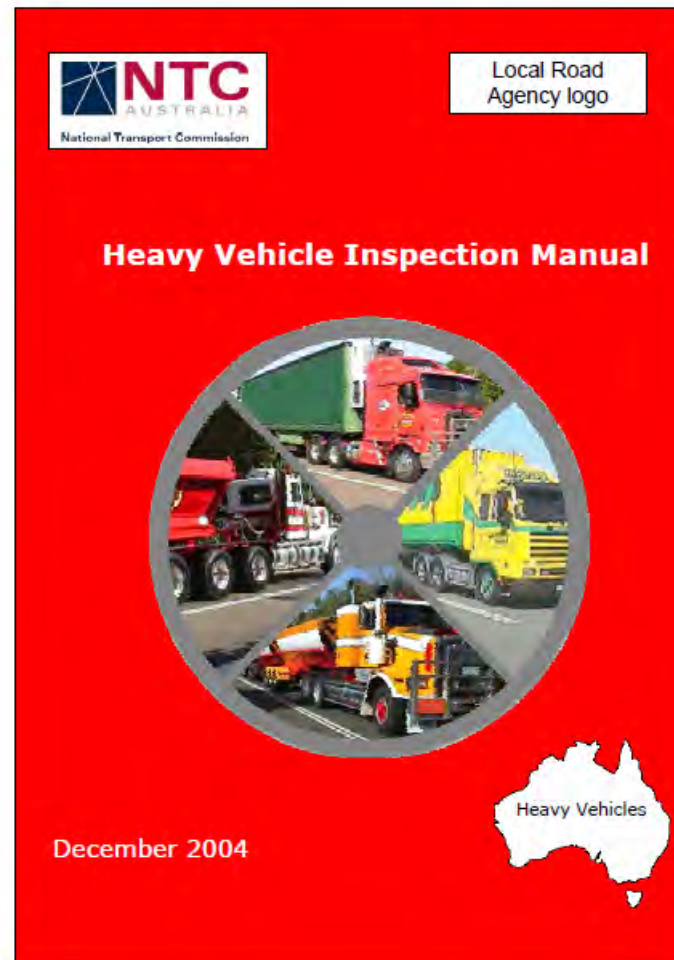
NATIONAL HEAVY VEHICLE REGULATOR



NHVR

-
- 21 January 2013, NHVR will commence operations
-
- Initially providing NHVAS (National Heavy Vehicle Accreditation Scheme) accreditations and PBS approvals
-
- Delivery of a comprehensive suite of regulator services expected by mid *2013*
- Call 1300 MY NHVR – on 21 January 2013 full inquiry service will be available
- Visit www.nhvr.gov.au for detailed information
-

Standards and Inspection Approach



DEFECT GUIDELINES

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Overview	1
1.2 Risk of Serious or Fatal Crash Due to the Presence of Defects	1
1.3 Related Regulations	2
2. DEFECT CATEGORIES	3
3. PROCEDURES FOR ASSESSING DEFECTIVE VEHICLES	5
4. OVERALL CRASH RISK	6
4.1 Factors Contributing to Crashes	6
4.2 Factors Affecting Crash Risk.....	6
4.3 Other Factors Affecting Assessment.....	7
4.4 Overall Crash Risk (Not Taking Into Account the Presence of Defects).....	7
5. INDIVIDUAL DEFECTS	8
5.1 The Effects of Defects.....	8
5.2 Circumstances Where a Defect Contributes to the Likelihood of a Crash.....	8
5.3 Classification of Defects.....	9
6. OVERALL RATING	11
6.1 Overall Rating of the Vehicle	11
6.2 Defective Systems.....	11

IMMINENT

Defects that do not have an effect until the component is subjected to higher than normal demands, when a catastrophic failure might occur.

EXAMPLES

- a cracked suspension component which breaks completely under heavy braking;
- severely worn brake linings or contaminated brake fluid leading to brake fade on a long descent;
- structural rust resulting in collapse of the occupant space in a severe crash;
- bald tyres which result in skidding in the wet;
- missing/broken wheel studs;
- imbalanced brakes.

DELAYED

Defects that do not have an effect until they degrade (wear) further to the point where a catastrophic failure might occur.

EXAMPLES

- a brake cam going over-centre due to wear in several components;
- semi-trailer king-pin/jaw wear;
- worn seat-belt webbing.

These DELAYED defects are likely to be affected by abnormal demands (see IMMIDENT). The difference is that further wear is necessary before there is any risk of failure.

GRADUAL

Defects that degrade gradually, resulting in a progressive reduction in the performance of a safety system or environmental damage. The effects might not be evident until abnormal demands are placed on the vehicle safety systems.

EXAMPLES

- contamination of brake linings;
- worn brake linings;
- out-of-balance rear brakes;
- wear/looseness in steering system;
- windscreen damage affecting driver's vision.

Table 1: General Classification of Defects

Effect of defect (5.1)	Circumstances where effects arise (5.2)			
	IMMEDIATE	IMMINENT	DELAYED	GRADUAL
a) Driver's view	Major (ground)/ Major	Major	Major/Minor	Minor/Warning
b) Conspicuity	Major (ground)/ Major	Major	Major/Minor	Minor/Warning
c) Control of vehicle	Major (ground)	Major (ground)/ Major	Major/Minor	Minor/Warning
d) Other road users	Major (ground)/ Major	Major (ground)/ Major	Major/Minor	Minor/Warning
e) Crash protection	Major/Minor	Minor	Minor	Warning
f) Post-crash	Major/Minor	Minor	Minor	Warning

Attachment D provides some examples of classification of defects, taking into account the overall crash risk and the effect of the defect.



VICROADS NEWOFFICER TRAINING PACKAGE



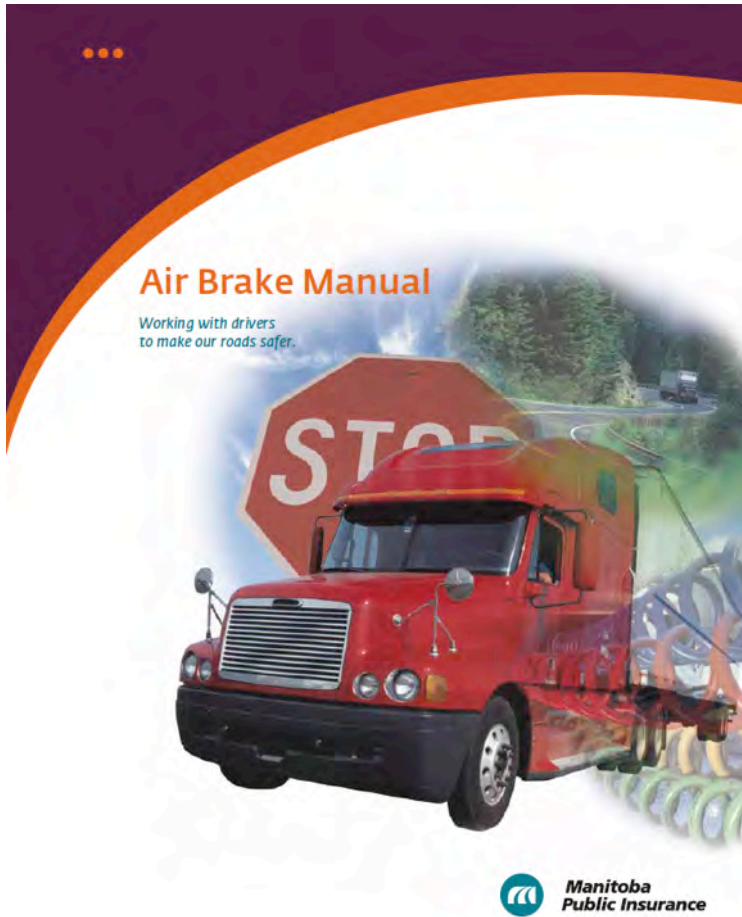


TRAINING CURRICULUM

- Consistent with National Standards
- Consistent with National Inspection Manual
- Consistent with National Defect Guidelines
- Capitalise on:
 - Industry Codes eg tyres and Brakes
 - US Driver Airbrake Examination
 - US out of service standards
 - UK Vehicle Operator Service Agency
 - Other Jurisdictions Codes and guidelines



Reference Material for Driver Braking examination



Heat-Energy-Traction-Friction

For a vehicle to move along the highway, an internal combustion engine must convert its heat energy into mechanical energy. This mechanical energy goes from the engine to the driving wheel via by means of a series of connecting links, shafts and gears. The final factor that moves the vehicle is the amount of traction the tires have on the road surface.

Friction is the force that exists everywhere between two surfaces in contact with each other. To stop a vehicle, the brake shoe linings are forced against the mechanical surface of the brake drums, causing friction. This friction produces heat.

The engine converts the energy of heat into the energy of motion, the brake shoe converts this energy of motion back into the energy of heat. The friction between brake drums and linings generates heat which reduces the mechanical energy of the incoming brake drums and wheels. The heat produced is absorbed by the metal brake drums, which dissipate the heat into the atmosphere. The amount of heat the brake drums can absorb depends on the thickness of the metal. When enough friction is caused between the brake lining and the drums, the wheels stop rotating. The final factor that stops the vehicle is the friction between the tires and the road surface.

If a 200-horsepower engine accelerates a vehicle to 100 km/h in one minute, imagine the power needed to stop this same vehicle. Also, consider that the vehicle might have to stop in an emergency in as little as six seconds (just 1% the time it took to reach 100 km/h).



To stop the vehicle in 1% the time it took to accelerate would require a stopping force of 10 times the acceleration force—the equivalent of approximately 2,000 horsepower. If the vehicle had no wheels, which wheel would have to provide 1% the braking force. If one of two of the wheels had failed that would not properly adjust, the other wheels would have to do more than their share of the braking, and that might be more than their brakes were constructed to absorb. Excessive use of the brakes would then result in a buildup of heat greater than the brake drums could absorb and dissipate. This much heat results in brake damage and possible failure.

Most brake linings operate best at around 250°C and should not exceed 425°C. It is important to understand that the power needed to stop a vehicle that is moving could damage the brakes.

Brake Drums

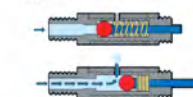


1 - Air Brake Manual

Safety Valve

A safety valve (4) prevents over-pressures from building over pre-set limits and locking if the governor malfunctions and does not close the compressor in the retarding stage. The valve contains a spring-loaded ball that will allow air to exhaust from the reservoir into the atmosphere. The valve's pressure setting is controlled by the force of the spring. A safety valve is normally set at 150 psi. If the pressure in the system rises to approximately 150 psi, the pressure would force the ball off its seat, allowing the pressure to exhaust through the exhaust port in the spring cap. When the air pressure is sufficient to overcome the force of the spring, the spring will force the ball back onto its seat, sealing off the exhaust pressure. Not all safety valves have a manual release feature.

Safety Valve



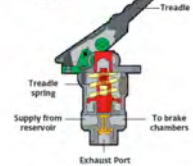
Air pressure greater than 150 psi

If the safety valve fails to relieve pressure, the governor or controller requires adjustment, service or repair. This should be done by a qualified mechanic.

Foot Valve

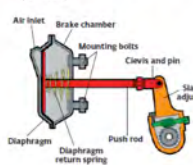
The foot-operated valve (1) is the means of applying air to operate the brakes. The diameter of the foot valve is regulated by the driver according to the air pressure that will be applied, but the maximum application will not exceed the pressure in the reservoir. Releasing the foot valve results in the release of the brakes.

Foot Valve



When the driver applies the brakes, depressing the inside part of the foot valve will automatically maintain the application air pressure without the driver having to adjust the pressure of the foot on the treadle. Releasing the inside allows the application air to be released through the exhaust ports into the atmosphere. Air motion also springs loaded, producing a different "feel" from hydraulic brake applications.

Brake Chambers, Slack Adjusters and Brake Linking



16 - Air Brake Manual

Driver Operators handbooks/codes Increased Professionalism



6. KNOWING THE VEHICLE	68
Roadworthiness	68
Body/cab condition	68
Brakes	68
Couplings	73
Driving controls	73
Electrical system	73
Engine	73
<small>Heavy vehicle driver handbook</small>	
Exhaust system	73
Fuel system	73
Gear boxes	74
Lights and indicators	75
Rear marking plates	76
Rust and corrosion	77
Seats and seatbelts	78
Steering	78
Structure	78
Suspension	78
Wheels and tyres	78
Windscreen and windows	78
Pre-departure check	79
Pre-departure safety checks	79
Dealing with problems	81
Defect reporting	81
Uncoupling and coupling	82
Uncoupling a semi-trailer	82
Coupling a semi-trailer	83
Uncoupling a truck and trailer	86
Coupling a truck and trailer	87
Summary	88

Knowing the vehicle

6

INSPECTION OF HYDRAULIC BRAKES

STEP 1: External check

- 1 Check for line damage and leaks.
- 2 Check wheel backing plates and brake hoses for any signs of leaks or damage, such as chafed hoses or pipes
- 3 Check around the master cylinder and hydraulic oil reservoir for leaks. Also check that the reservoir is full.

STEP 2: System check

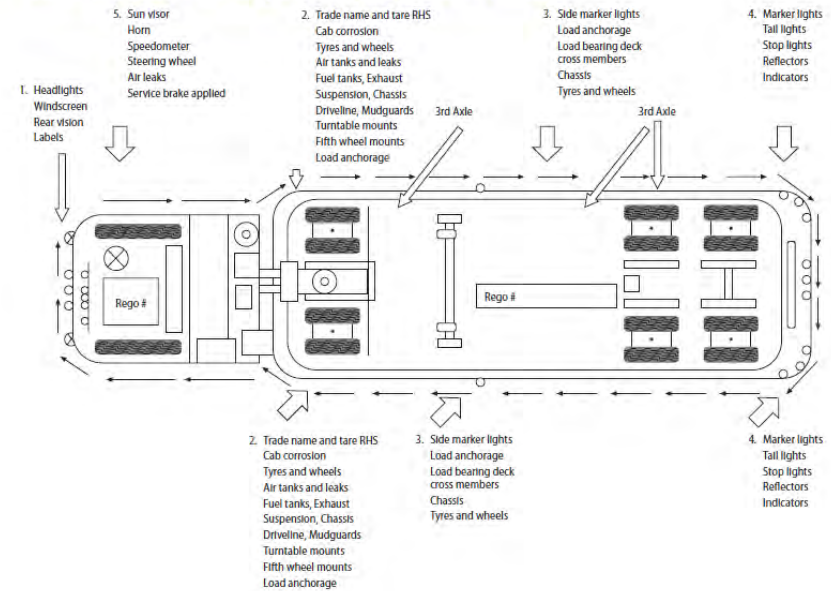
- 1 Check the feel of the brake pedal when you apply the foot brake. If the pedal sinks down further than usual or if it feels spongy, there may be a leak or air in the system.
- 2 Keep full pressure on the pedal – it should continue to be hard. If the pedal starts to sink, there may be a leak in the system.
- 3 Vacuum brakes – check booster retention with full vacuum and the engine off. When you apply the pedal it should stay down without resistance. The vacuum must be available soon after the engine is started with low vacuum available after 30 seconds and normal working vacuum after 60 seconds.
- 4 Check that the vehicle does not pull to one side when you brake with the vehicle moving, off road if possible.

Land Transport New Zealand



Land Transport NZ
Ikaiki Whenua Aotearoa

Visual walk-around inspection (tractor and trailer)

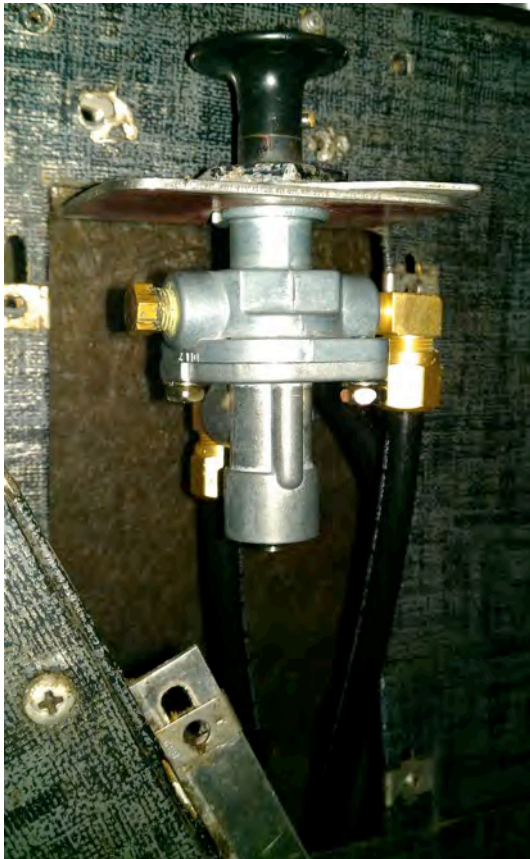




Whistle Stop Tour of VicRoads Training Issues



Any handle or control lever on a parking brake is not fitted with a locking device capable of holding in any



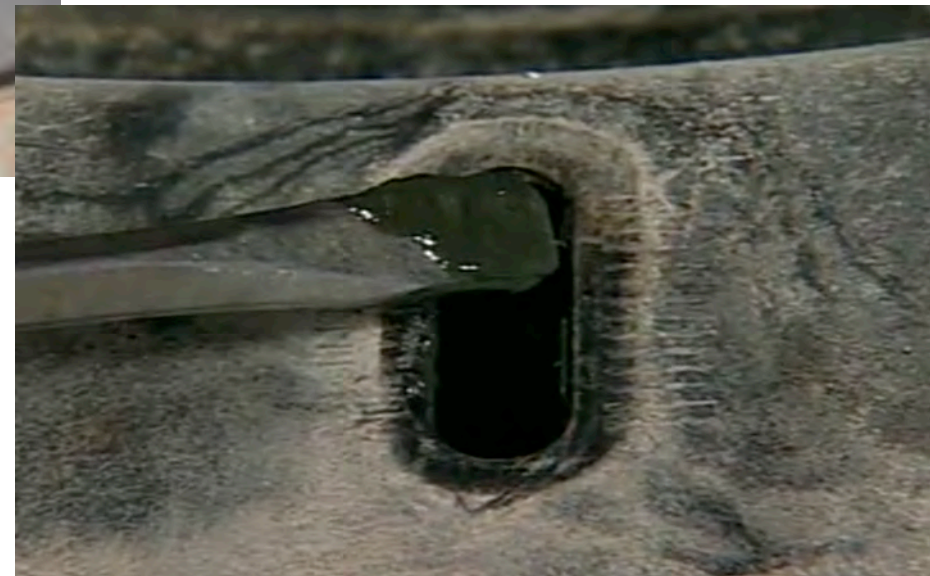
Park brake control can be released with only one action.

Brake drums or discs are not fitted or have missing pieces, or cracks other than short heat cracks inside the drums





Linings or pads are contaminated with oil, grease or brake fluid



2.1 Check brake components

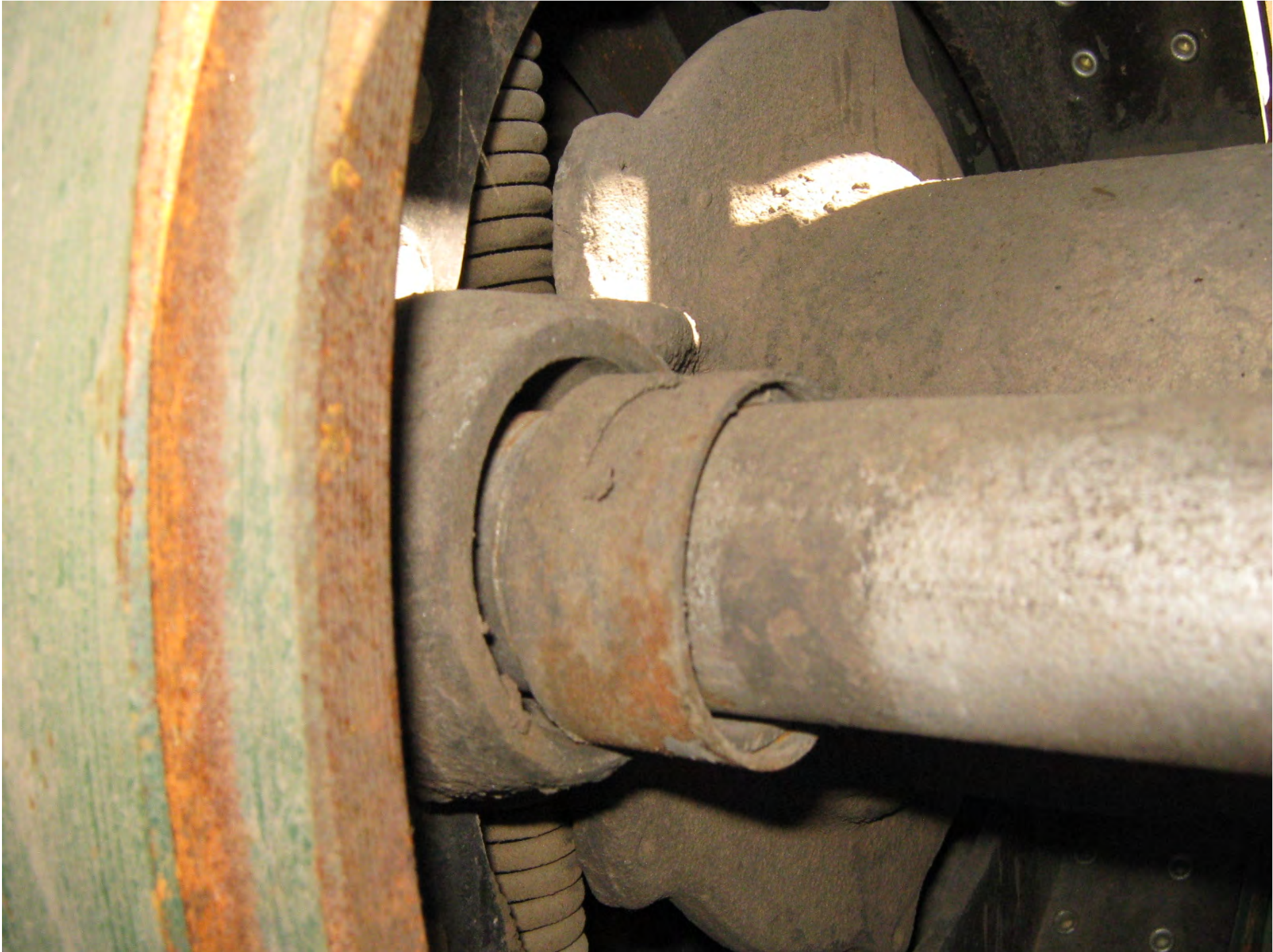
Linings or pads are contaminated with oil, grease or



29/09/2010

Brake chambers (including chamber clamps) or camshaft support brackets are loose, bent, cracked or missing.





2.1 Check brake components

Slack adjuster Travel

Brakes Off



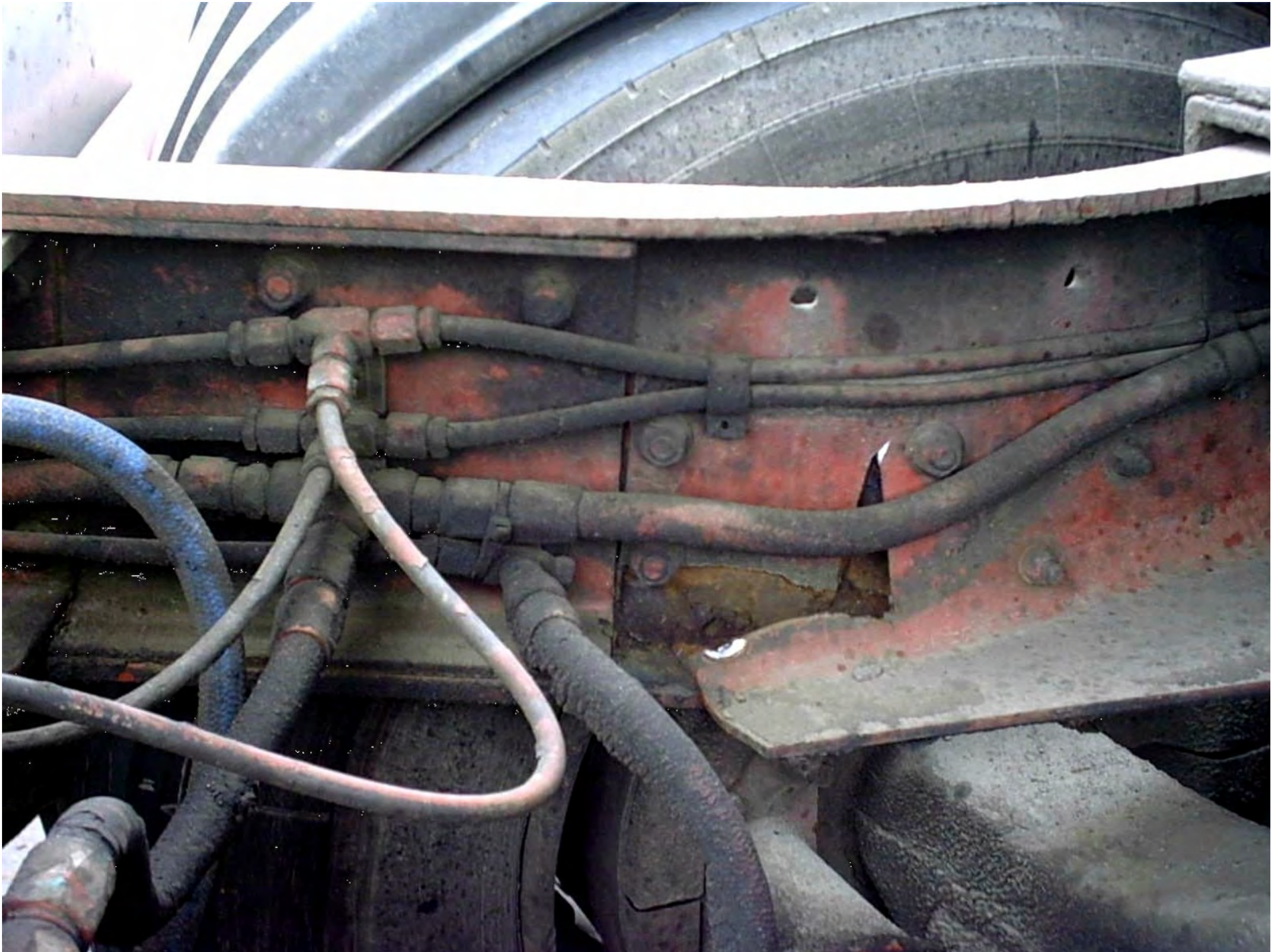


16/11/2012



16/11/2012







RTAGE

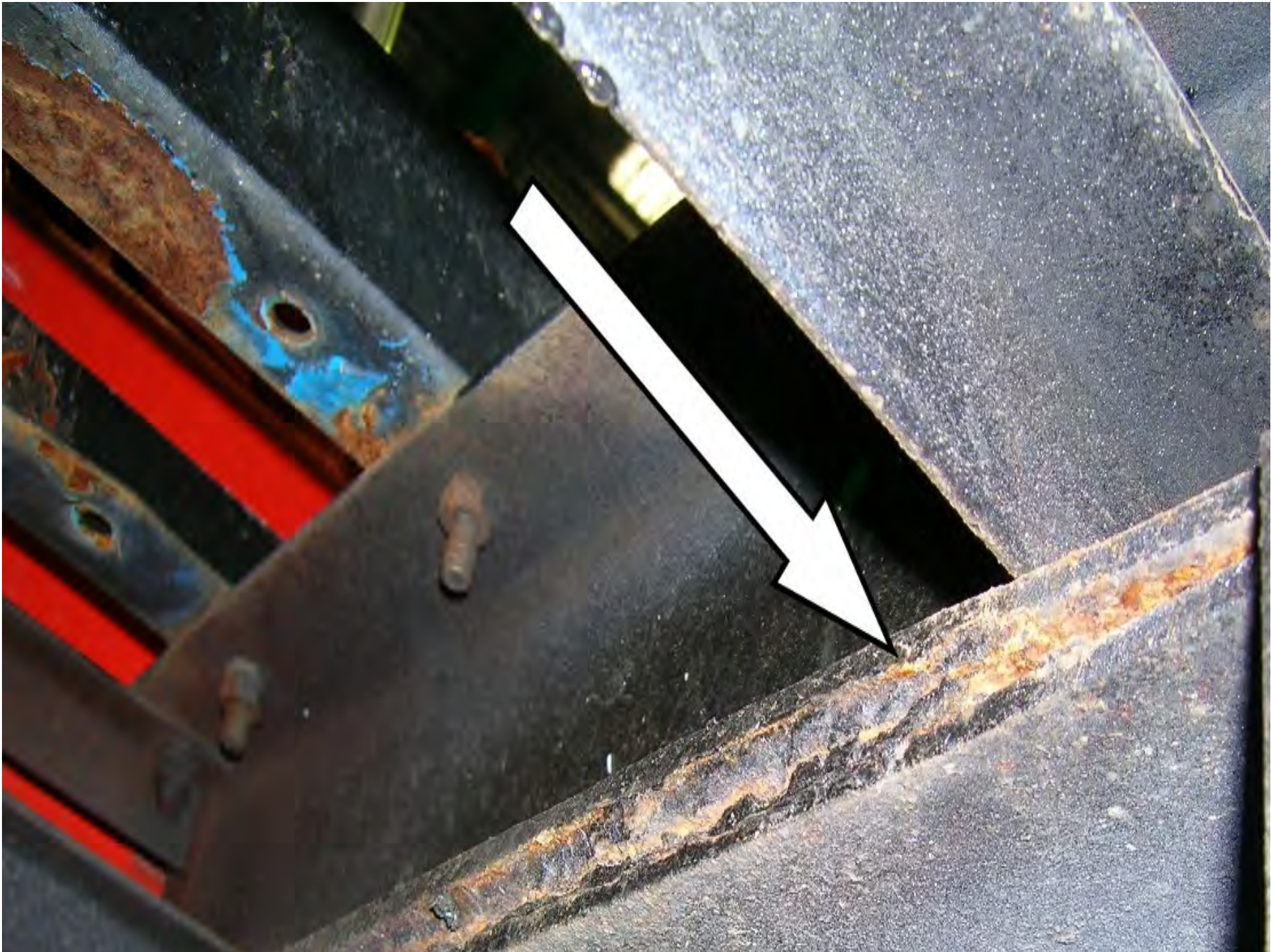
FF

2
AG
L
T
D

41184

23/12/2011







3.2. Check pin couplings and pintle hooks

Reasons for rejection

- g) Pin couplings or pintle hooks 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.
- h) Any wear on the diameters of each of the coupling pin and the drawbar eye bush greater than 1.5mm.
- i) Any transverse or circumferential welds on the draw bar eye block.

Note: Wear should be checked by direct measurement, or by the use of a gauge. Allowable dimensions for worn components are given in Table A3.

Component	Standard Dimension	Allowable Wear Limit*	Gauge Sizes
Coupling pin Drawbar eye bush	48.7 OD 50.0 ID	47.2 min 51.5 max	47.1 51.6

Table 3 2: Allowable Dimensions in Millimetres for Worn Components

* When the wear of components is checked by direct measurement, it should be noted that an elliptical wear pattern is generated on the bore of the drawbar eye bush, and on the outside of the pin.

Note: Figure 3.2 - Illustration showing typical tow coupling devices

* Typical Wear Surfaces

4.4. Check suspension components

Reasons for rejection

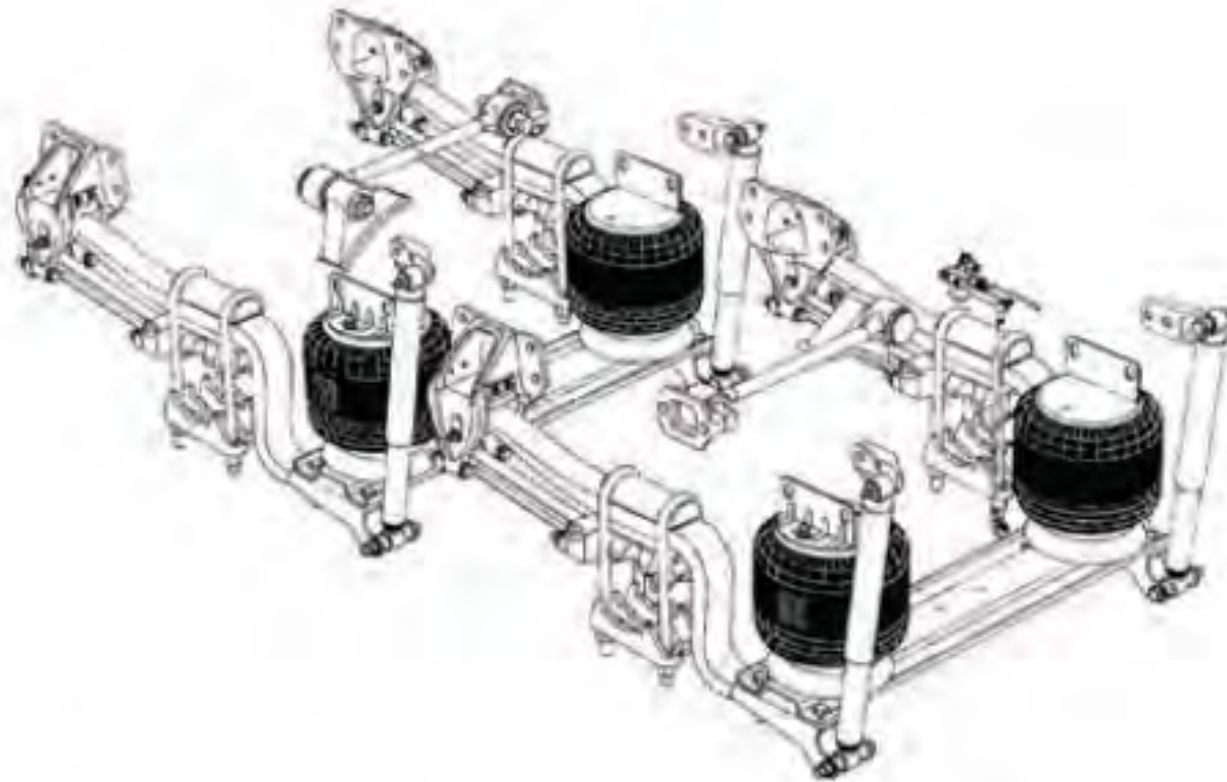
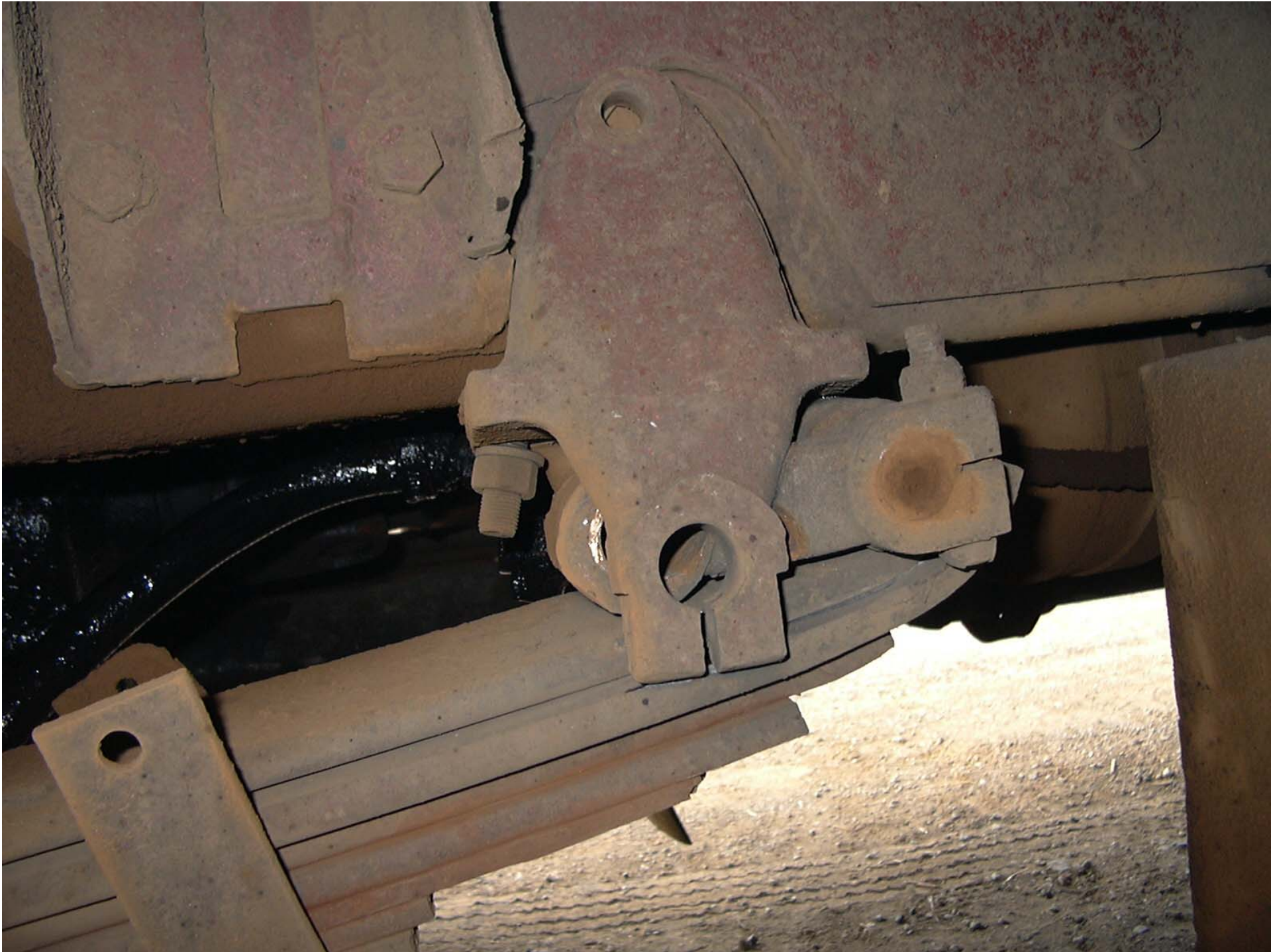


Figure 4 3: Typical air bag suspension





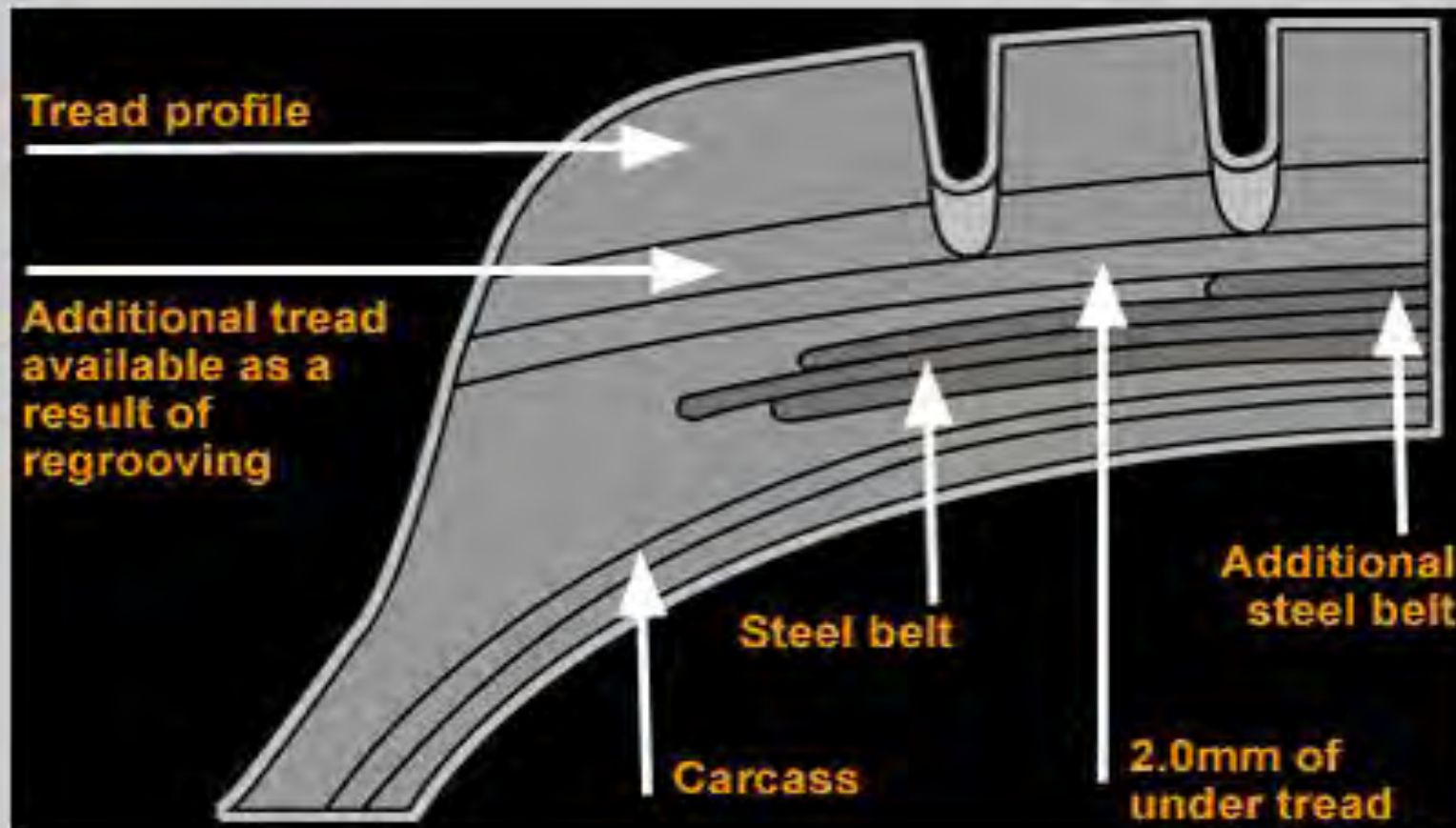


07.05.2012 14:35



4) What is Regrooving?

A regrooved tyre means a tyre, either new or remoulded, on which a tread pattern has been produced by cutting into the tread in accordance with the tyre manufacturer's recut tread pattern. Such tyres will have the required amount of under-tread rubber for this purpose and will be marked as REGROOVABLE. This is illustrated below: -







Lighting Requirements

For vehicles manufactured on or after 1 October 1991

The Federal Office of Road Safety has published Vehicle Standards Bulletin VSB No. 9 which describes the lighting installations required or permitted by the Australian Design Rules (ADRs). A copy of the bulletin is attached and forms part of this information sheet.

Motor vehicles and trailers intended for use on the road must be fitted with lamps that comply with the Standards for Registration which for vehicles built on or after 1 October 1991 are the ADRs. The standards also prohibit a vehicle from being fitted with a lamp or reflector that is not required or permitted by the standards.

Vehicles manufactured on or after 1 October 1991 must be fitted with lamps which comply with VSB 9. Vehicles manufactured before October 1991 must be fitted with lamps that comply with either the applicable requirements in the Standards for Registration or with VSB 9.

More detailed information on the lighting requirements in VSB 9 is set out in the applicable Australian Design Rules (ADRs).

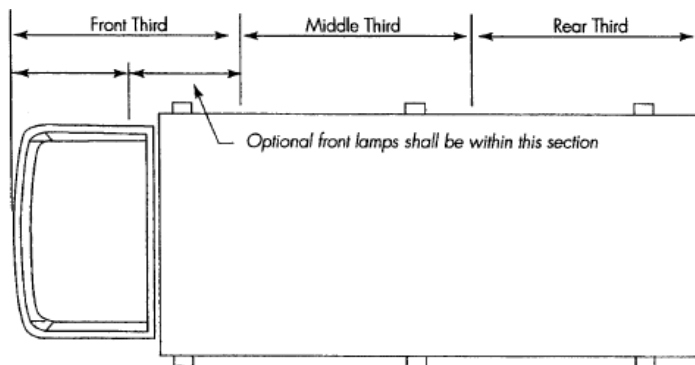


Figure 7.19.2

Vehicle standards information

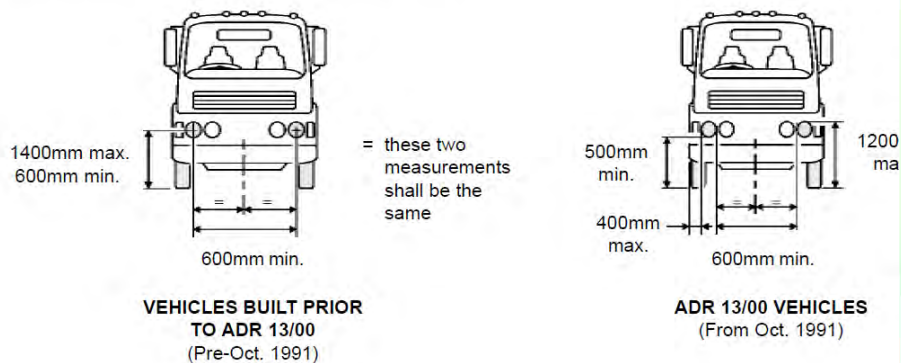


12

Revision 0.1 / Published 1 November 2007

Guidelines for lights and light signalling devices for heavy vehicles


Location of low-beam headlights







INDUSTRY TRAINING INVOLVEMENT

- Presentation VicRoads Training to ARTSA
 - 4 Hour 140 slides and including Videos from US and UK
 - Refinement of Package
 - Presentation at Maintenance Workshop VTA TISG Sandown Safety day early 2013
 - Looking for:
 - Information in simple in-house maintenance procedures that are easy to apply in a small business:
 - A simple cost model to demonstrate the value of using such a system
- 

Is This an Example of Good Maintenance or ... ?





Thank You and
Merry Christmas and Happy
New Year
To You and Your families

