



Transport  
Roads & Maritime  
Services

# **Bus roadworthiness**

## **Trends and Patterns 2009 - 2014**

January 2016

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# 1 Introduction

Public transport (trains, buses, ferries and taxis) accounts for around 10 per cent of vehicle trips made on an average weekday in NSW. Around, 443,000 people or 48 per cent travel on a bus each week day, making this the most popular public transport, followed by trains (40 per cent).

Roads and Maritime Services administer the Bus Operator Accreditation Scheme which includes vehicle maintenance plans and systems to ensure ongoing roadworthiness.

This report provides information to industry on the safety and roadworthiness of buses along with trends and improvements to vehicle maintenance standards.

Results have been largely encouraging with several areas identifying where improvements are required:

- The number of formal warnings has dropped from 21 per cent in 2012–13 to 17.5 per cent in 2013–14
- Analysis of data shows buses are largely well maintained, with a majority of notices for minor defects required to be remedied within a specified period
- There has been a gradual decrease in the number of buses being repeatedly issued with a defect notice
- For buses found with major defects, the most common issue was brakes at 30.6 per cent, followed by ancillary equipment (20.9 per cent)
- Country buses were more likely to be issued with defect notices than metropolitan buses
- The most common recurrent defects relate to ancillary equipment and brakes; with defects in relation to wheels/tyres, suspension and oil/fuel leaks also being significant.

## 2 Trends in bus roadworthiness

Roads and Maritime has four classifications for defect severity.

Grounded defects are the most serious and can include vehicles with no brakes or steering capability. Other categories are major, minor and warning. These levels focus on defects which can decrease the performance of the vehicle gradually and must be repaired within specific timeframes.

Defect data for buses shows they are less likely to have major or grounded defects than other heavy vehicles, suggesting buses are comparatively well maintained. Grounded defects for buses average only 0.5 per cent, compared to 1.8 per cent for heavy vehicles. Similarly, major defects account for 5.2 per cent of all defects for buses compared to 9.4 per cent for heavy vehicles.

To note: While bus defects increased from 9.4 per cent to 10.1 per cent of all heavy vehicle defects during the reporting period, this is due to an increase in warnings, generally for minor level defects.

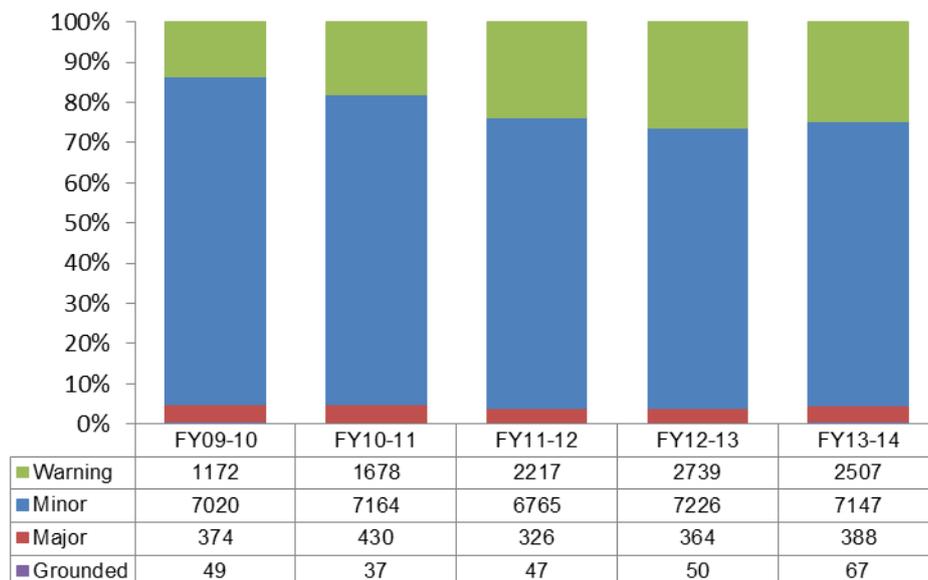


Figure 2. Bus defect severity trends for five financial years

### 3 Inspections of buses

There has been a gradual decrease in the number of buses being repeatedly issued with a defect notice, likely due to an ongoing regime of vehicle inspections.

The percentage of buses subject to a repeat defect notice drops to below 50 per cent after five inspections. This continues to decline against more inspections. It is rare for a bus which has been inspected more than 12 times to be issued a defect notice, demonstrating the value of routine and regular bus safety inspections.

### 4 Bus roadworthiness

A total of 438,463 defect notices were issued for all heavy vehicles, of which approximately 10 per cent (47,767) were issued to buses within the reporting period.

A single defect notice can be issued for a vehicle with multiple different defect types. Generally the higher the number of defect types the higher the defect severity level.

#### 4.1 Issuing notices

Around 56 per cent (246,526) of defect notices were issued by Roads and Maritime Heavy Vehicle Inspection Stations (HVIS). Figure 4 demonstrates major and grounded defect notices are higher for Sydney metropolitan buses, due primarily to a greater concentration of proactive on-road targeting.

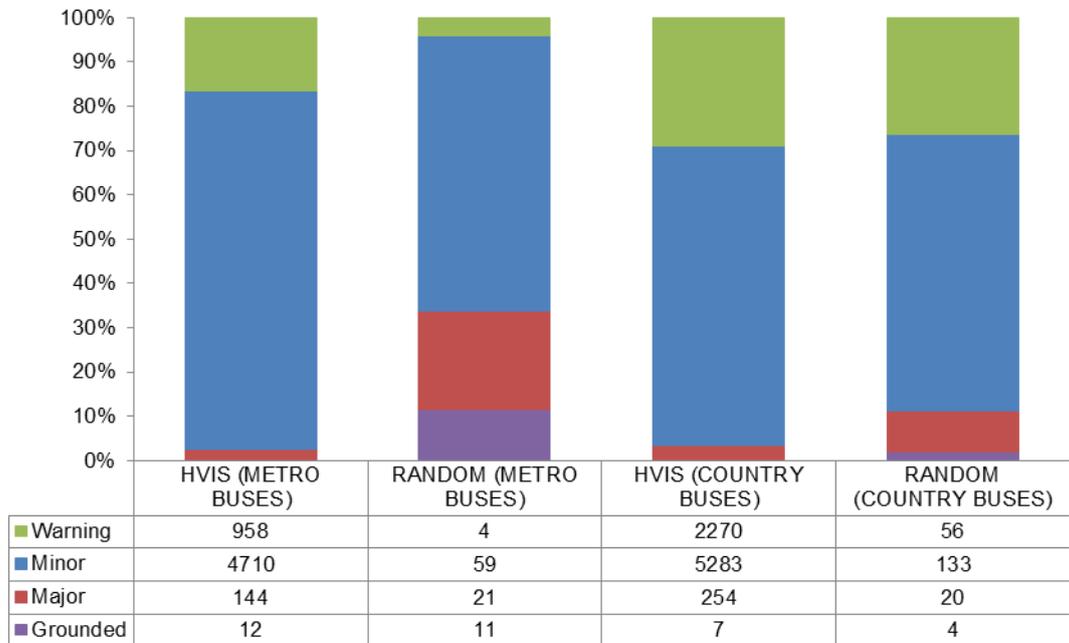


Figure 3. Breakdown of defect notices issued by inspection type and locality (Sydney metro or country)

A total of 2,264 metropolitan buses received a total of 5,919 notices, or an average of less than three notices per bus. The majority of defect notices were for minor defects, issued when the safety risk is neither imminent nor serious with the bus able to continue to be driven providing the identified defects are remedied within a specified period.

Brakes are the most common type of defect (30.6 per cent) followed by ancillary equipment (20.9 per cent) as illustrated in Figure 4. Tow couplings are the least likely to be subject of a defect accounting for less than 1 per cent of defect notices.

A continued focus of bus maintenance on brakes and ancillary equipment is likely to improve bus safety outcomes in further reducing the occurrence of defects.

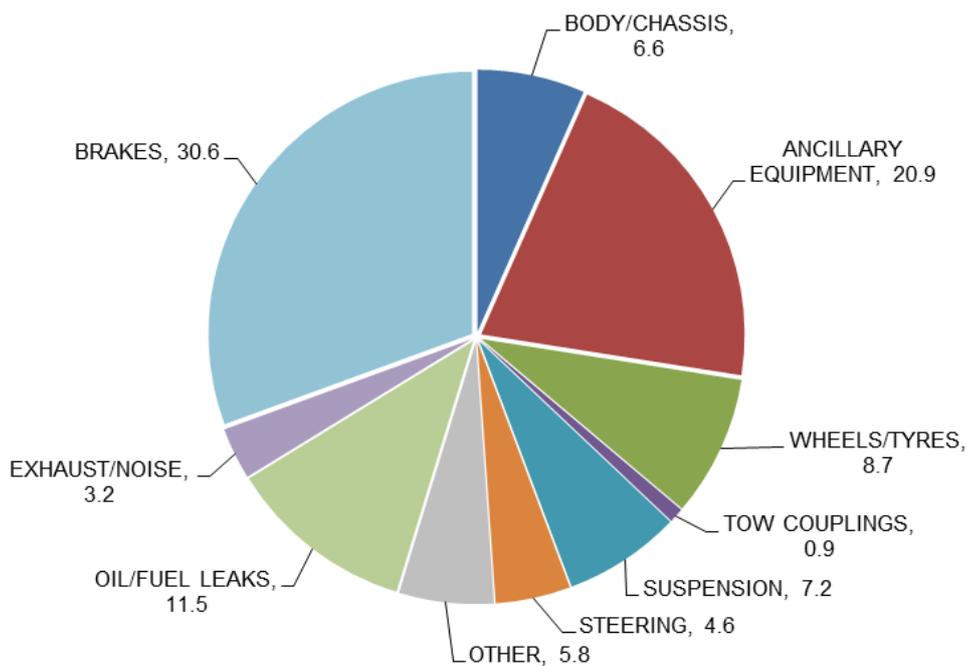


Figure 4. Distribution of bus defect types (%).

## 4.2 Comparison for metropolitan and country areas

Data analysis reflects country buses are more likely to be issued with more overall defect notices than metropolitan buses. This increases with respect to ancillary equipment and suspension, as reflected in Figure 5.

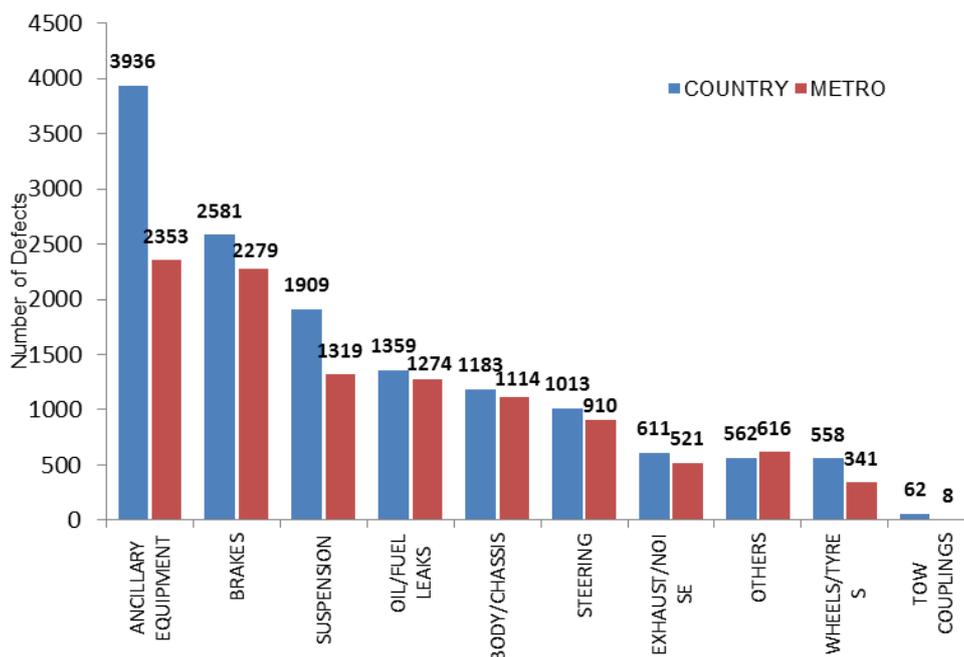


Figure 5. Defect trends in buses operating in metro and country areas

## 5 Buses with recurring issues

Investigations have found recurring defects largely relate to ancillary equipment and brakes with defects in relation to wheels/tyres, suspension and oil/fuel leaks also being significant. Roads and Maritime is committed to continuing to educate industry and operators of the critical importance of safety and roadworthiness of fleets in NSW.

### 5.1 Odometer readings

Roads and Maritime found no obvious pattern between odometer readings and an increase in recurring defects.

When analysing odometer reading profiles of buses operating under different modes (ie metropolitan and country) with corresponding inspection results showed metropolitan buses experienced greater wear and tear most likely due to stop start conditions.

## 6 Next steps

While the results of the five year data analysis were encouraging and showed a high level of roadworthiness across the bus industry, key areas have been identified where improvements can be made.

Bus roadworthiness safety checks will be carried out as part of routine inspections in a bid to further reduce the number of warnings and defects issued.

Roads and Maritime Services will continue to engage with industry to improve bus safety.

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