

**Great Britain Heavy Goods Vehicle
Fleet Compliance Check
March to May 2008**

**Prepared for VOSA by the
In House Analytical Consultancy**



Department for
Transport



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1. Management Summary

1.1. Introduction

- 1.1.1. The Vehicle & Operator Services Agency (VOSA) stopped and checked 3773 randomly selected GB registered heavy goods vehicles (HGVs) and 1701 trailers during the 2008 HGV Fleet Compliance Check (FCC). The checks were carried out at randomly selected sites and times across Great Britain during the period April 1st to May 12th 2008. The aim of the HGV FCC is to determine the roadworthiness and traffic compliance of GB registered vehicles and trailers.
- 1.1.2. The In House Analytical Consultancy (IHAC, previously the Operational Research Unit) in the Department for Transport (DfT) developed the methodology used and designed and planned the survey. VOSA carried out roadside checks and transferred the resulting observations to an electronic database. IHAC then analysed the data collected by these checks. Details on the statistical accuracy of the check may be found in Annex B.

1.2. Vehicle Defects

- 1.2.1. Of the 3773 vehicles checked in the 2008 survey:
- 9.8% had prohibitable defects (with a 95% confidence interval of 7.69% to 12.07%);
 - 3.9% had immediately prohibitable defects (with a 95% confidence interval of 3.12% to 4.68%);
 - in addition to these prohibitions, 9.8% received an inspection notice;
 - 8.1% had one prohibitable defect and 3.0% had one immediately prohibitable defect;
 - 1.2% had two prohibitable defects and 0.6% had two immediately prohibitable defects;
 - 0.5% had three or more prohibitable defects and 0.4% had three or more immediately prohibitable defects.
- 1.2.2. The 2008 HGV FCC is the eleventh in a series of surveys that have been carried out annually since 1997, although no survey was carried out in 2007. IHAC has analysed the year-on-year survey results and have found the following statistically significant trends to be evident:
- The proportion of vehicles receiving an immediate prohibition has dropped at an average rate of 0.32% ($\pm 0.16\%$ at the 95% confidence level) per annum over the twelve year period (see also section 3.1.7).
 - The proportion of vehicles issued with a delayed prohibition has dropped at an average rate of 0.36% ($\pm 0.17\%$ at the 95% confidence level) per annum over the twelve year period (see also section 3.1.8).
 - The proportion of vehicles issued with an inspection notice has dropped at an average rate of 0.74% ($\pm 0.24\%$ at the 95% confidence level) per annum over the twelve year period (see also section 3.1.9).
 - The proportion of vehicles receiving a prohibition has dropped at an average rate of 0.68% ($\pm 0.32\%$ at the 95% confidence level) per annum over the twelve year period.

- The proportion of vehicles with no defects has increased at an average rate of 0.59% ($\pm 0.27\%$ at the 95% confidence level) per annum over the twelve year period.
 - The average number of defects found on a vehicle (where a defect was detected) by year has dropped at an average rate of 0.04 (± 0.03 at the 95% confidence level) per annum over the twelve year period (see section 3.1.12).
- 1.2.3. Overall, during the twelve years the survey has been running there has been a decrease in the proportion of vehicles issued with immediate, delayed and total prohibitions and inspection notices, as well as in the proportion of vehicles found to have one, two, three or more prohibitable defects¹. There has also been an increase in the proportion of vehicles with no defects.
- 1.2.4. Comparing the 2008 survey data to the results of the previous ten surveys highlights the following:
- Although the proportion of immediate prohibitions issued in 2008 (3.9%) was higher than in 2006 (3.1%), it was significantly lower than in previous years;
 - Although the proportion of delayed prohibitions issued in 2008 (5.9%) was higher than in 2006 (5.8%), it was also significantly lower than in previous years;
 - Likewise, the proportion of inspection notices issued in 2008 (9.8%) was higher than in 2006 (8.1%), but was also significantly lower than in previous years.
- 1.2.5. For a breakdown of the year-on-year figures please see sections 3.1.7 to 3.1.14.

1.3. Trailer Defects

- 1.3.1. Of the 3773 vehicles checked, 1701 (45.1%) had trailers. Of these trailers (where calculated, 95% confidence intervals are given in brackets after each statistic):
- 10.9% had prohibitable defects (8.87% to 13.00%);
 - 3.4% had immediately prohibitable defects (2.34% to 4.59%);
 - in addition to these prohibitions, 5.6% received an inspection notice;
 - 9.1% had one prohibitable defect and 2.2% had one immediately prohibitable defect;
 - 1.4% had two prohibitable defects and 0.8% had two immediately prohibitable defects;
 - 0.4% of trailers had three or more prohibitable defects and 0.4% had three or more immediately prohibitable defects.
- 1.3.2. The 2008 HGV FCC is the eleventh in a series of annual surveys (although, as previously stated, no survey was carried out in 2007). IHAC performed trend analysis on the year-on-year survey results and found that there were no statistically significant trends for any of the categories of trailer prohibitions. Likewise, there was no statistically significant year-on-year

¹ In each case, the quoted slope is significantly different from a zero trend, with standard regression providing a good fit to the sequence.

trend in the average number of trailer defects found per trailer (where a defect was found).

- 1.3.3. Comparing the 2008 survey data to the results of the previous ten surveys highlights the following:
- A significantly lower proportion of immediate prohibitions was issued to trailers in 2008 (3.4%) than in other years;
 - There was no significant difference between the proportion of delayed prohibitions issued to trailers in 2008 (7.5%) and the proportion issued in previous years;
 - Likewise, there was no significant difference between the proportion of inspection notices issued to trailers in 2008 (5.6%) and the proportion issued in previous years.
- 1.3.4. For a breakdown of the year-on-year figures please see sections 4.1.5 to 4.1.16.

1.4. Traffic Offences

- 1.4.1. Of the 3773 checks carried out (where calculated, 95% confidence intervals are given in brackets after each statistic):
- 1.6% of the checks found at least one offence (in one or more of the traffic offence categories checked) which resulted in a report for prosecution (1.16% to 2.39%);
 - 10.9% resulted in an advisory letter, prohibition, or ORN (Offence Rectification Notice) being issued (9.54% to 12.20%), and a further 10.3% resulted in a verbal warning being given.
- 1.4.2. It should be noted that new traffic offence categories of Prohibitions and ORNs were introduced in 2003, and the range of offences dealt with in this way has increased since this date. 2008 is the fifth survey in which these new categories have been grouped with Advisory Letters.
- 1.4.3. As with the analysis of the vehicle and trailer check results, IHAC has analysed the sequence of traffic offending rate estimates produced by the HGV FCC surveys back to 1997 to investigate possible trends. The following trend analysis result is statistically significant:
- The proportion of vehicles reported for prosecution has dropped at an average rate of 0.55% ($\pm 0.39\%$ at the 95% confidence level) per annum over the twelve year period (see also section 5.1.2) during which the survey has been running.
- 1.4.4. Comparing the 2008 survey data to the results of the previous ten surveys highlights the following:
- The proportion of traffic offences resulting in the vehicle being reported for prosecution (1.6%) was significantly lower in 2008 than in previous years;
 - The proportion of traffic offences resulting in an advisory letter, prohibition or ORN (10.9%) was significantly higher in 2008 compared with the other ten years in which the survey has been carried out;
 - Considering only the years where the new traffic offence categories were introduced (2003 to 2006, and 2008), the proportion of traffic offences resulting in an advisory letter, prohibition or ORN was also significantly higher in 2008 when compared to the previous years;

- The proportion of traffic offences resulting in a verbal warning (10.3%) was significantly lower in 2008 compared with the previous years.
- 1.4.5. For a breakdown of the year-on-year figures please see sections 5.1.2 to 5.1.5.

1.5. Other Findings – Roadworthiness

- 1.5.1. More detailed analysis of the data gathered in the 2008 HGV FCC showed that:
- Strong, positive correlations were found both between the number of prohibitions and the number of inspection notices issued to vehicles and their age, suggesting that as a vehicle gets older, the likelihood of it receiving a prohibition increases. This indicates that the condition of a vehicle is correlated to its age. The same correlation analysis for trailers produced the same results, indicating that the condition of a trailer is linked to the age of its drawing vehicle, with older vehicles tending to have trailers in a less roadworthy condition than younger ones.
 - In particular, trailers drawn by vehicles aged between 8 and 9 years tended to be in a less roadworthy condition than those drawn by vehicles of the other age groups.
 - The correlations between the maximum gross/train weight of the vehicles checked and both the number of prohibitions (immediate and in total) and the number of inspection notices were strong and negative, indicating that heavier vehicles are in a more roadworthy condition.
 - In particular, vehicles checked with a maximum gross/train weight of between 3.5 and 9.9 tonnes were in a significantly less roadworthy condition than those in other weight categories, and those with a maximum gross/train weight of 44 tonnes were in a significantly more roadworthy condition than those in other weight categories.
 - Vehicles checked or licensed in the Scottish Traffic Area were significantly more likely to receive a prohibition than those in other Traffic Areas, whereas those checked or licensed in the Eastern and Western Traffic Areas were significantly less likely to do so. Vehicles checked or licensed in the Eastern Traffic Area were also more likely to receive an inspection notice than those in other Traffic Areas.
 - Trailers checked in the Eastern and Western Traffic Areas tended to be in a more roadworthy condition than those in other Traffic Areas. Trailers checked or licensed in the South Eastern and Metropolitan Traffic Area or North Eastern Traffic Area tended to be in a less roadworthy condition than those in other Traffic Areas.
 - Vehicles checked on rural trunk or rural principal roads received a higher proportion of prohibitions and inspection notices than those checked on other road types, indicating that they may be in a less roadworthy condition. Vehicles checked on urban principal roads and trailers checked on urban trunk or rural principal roads were less likely to receive an inspection notice than those on other road types.
 - Analysis of the number of prohibitions and inspection notices issued by time of day indicate that vehicles checked between 18:00 and 22:00 were in a more roadworthy condition than those checked at other times of the day,

receiving significantly fewer in both cases. Both vehicles and trailers checked between 10:00 and 14:00 tended to be in a less roadworthy condition than those checked at other times.

- The only significant result from analysis on the survey results by day of check was that vehicles checked on a Monday were significantly more likely to receive an immediate prohibition than those checked on other days.
- Results suggest that Box/Tautliner HGVs, Refrigerated/Insulated HGVs, and trailers drawn by a Refrigerated/Insulated HGV are in a more roadworthy condition than those of other body types, receiving a significantly lower proportion than of both immediate and total prohibitions. Tippers received a significantly higher proportion of total prohibitions than vehicles of other body types, indicating that they are more likely to be in a less roadworthy condition.
- Rigid vehicles tended to be in a less roadworthy condition than articulated vehicles. This may be due to the fact that (a) articulated vehicles are larger and/or heavier, and (b) articulated vehicles tend to be newer than rigid vehicles.
- Vehicles with two axles tended to be less roadworthy, receiving significantly more immediate prohibitions than other vehicles. Those with three axles received significantly fewer immediate prohibitions and total prohibitions (immediate and delayed combined) than other vehicles, suggesting that vehicles with three axles are more roadworthy.
- Vehicles driven by drivers who were employed by an operator tended to be in a more roadworthy condition than those driven by drivers of a different employment type. Conversely, those driven by self-employed drivers tended to be in a less roadworthy condition.

1.5.2. The most common defect categories for vehicles were as follows:

- The most common prohibition category for both immediate and delayed prohibitions was Brake Systems & Components;
- The second most common prohibition category for both immediate and delayed prohibition was Condition of Tyres;

1.5.3. The most common defect categories for trailers were as follows:

- The most common immediate prohibition category was Brake Systems & Components;
- The second most common immediate prohibition category was Lamps;
- The most common delayed prohibition category was Brake Systems & Components;
- The second most common delayed prohibition category was Condition of Tyres.

1.6. Other Findings – Traffic Offences

1.6.1. More detailed analysis of the data gathered in the 2008 HGV FCC showed that:

- Analysis suggests that as a vehicle gets older, the likelihood of the vehicle receiving a prohibition, ORN or advisory letter increases.

- Vehicles with a maximum gross/train weight of between 3.5 and 9.9 tonnes were both significantly more likely to be reported for prosecution and significantly more likely to receive a prohibition, ORN, or advisory letter. Vehicles with a maximum gross/train weight of 44 tonnes were significantly less likely to receive a prohibition, ORN, or advisory letter than those in other weight categories.
 - Vehicles checked in the West Midland and North Eastern Traffic Areas were significantly more likely to receive a prohibition, ORN, or advisory letter than those in other Traffic Areas. Those checked in the Western and South East and Metropolitan Traffic Areas were significantly less likely to do so.
 - Vehicles licensed in the Western Traffic Area were significantly less likely to be issued a prohibition, ORN, or advisory letter than those in other Traffic Areas.
 - Vehicles checked on urban trunk roads were significantly less likely to receive a prohibition, ORN, or advisory letter than those checked on other road types.
 - Checks occurring between 22:00 and 02:00 resulted in a significantly lower proportion of prohibitions, ORNs, or advisory letter than those occurring in other time periods.
 - Checks taking place on Wednesdays resulted in a significantly higher proportion of prohibitions, ORNs, or advisory letters.
 - Flatbed vehicles received a significantly higher proportion of prohibitions, ORNs, or advisory letters than those of other body types, whereas Refrigerated/Insulated HGVs received a significantly lower proportion.
 - Checks on rigid vehicles resulted in a significantly higher proportion of prohibitions, ORNs, or advisory letters than those on articulated vehicles.
 - Vehicles with two axles were significantly more likely to receive a prohibition, ORN, or advisory letter than those with a different number of axles, whereas those with three axles were significantly less likely to do so.
 - Drivers employed by an operator were significantly less likely to receive a prohibition, ORN, or advisory letter following their check than drivers of other employment groups, whereas self-employed drivers were significantly more likely to do so.
- 1.6.2. The most common traffic offence categories were as follows:
- The traffic offence most likely to be reported for prosecution was Drivers' Hours;
 - The traffic offences second most likely to be reported for prosecution were Driving Licences and Plating & Testing (equally likely);
 - The traffic offence most likely to receive an advisory letter, prohibition, or ORN was Drivers' Hours.
 - The traffic offence second most likely to receive an advisory letter, prohibition, or ORN was Tachograph.

1.7. Accuracy

- 1.7.1. Each of the headline statistics that is quoted in this report has an associated uncertainty. That uncertainty is unavoidable and arises from the random

sampling techniques that were used to carry out the survey. The Conclusions section of this report expresses that uncertainty in terms of two parameters: an accuracy level, plus a corresponding level of confidence. When analysing vehicle and trailer defects and traffic offences in the 2008 Fleet Compliance Check report and all previous HGV FCC Reports, each estimated result has been generated using a 95% confidence level. As a result, the reader can be 95% certain that the actual vehicle defect, trailer defect and traffic offence rates fall within the ranges presented in the Conclusions section.

2. Introduction

2.1. Background

- 2.1.1. The 2008 GB HGV Fleet Compliance Check (HGV FCC) follows on from the 2006 GB HGV Fleet Compliance Check and is the eleventh such check that the Vehicle and Operator Services Agency (VOSA) has carried out. No check was carried out in 2007.
- 2.1.2. The GB HGV Fleet Compliance Checks are carried out in order to determine not only the overall level of HGV Operator compliance with traffic regulations but also the level of roadworthiness across the Great Britain HGV fleet. There was a separate survey in October and November 2006 to determine the roadworthiness and traffic compliance of vehicles and trailers registered outside Great Britain travelling on GB roads.
- 2.1.3. VOSA has two major reasons for sponsoring this survey:
 - to determine trends in non-compliance with regulations and roadworthiness to gauge the effects of changes in legislation, and the effectiveness of VOSA's day-to-day targeted operations; and
 - to provide information to help identify potential areas for targeting, so that VOSA's work can be more focused.
- 2.1.4. In October 1995, VOSA undertook a random survey of HGVs to determine the level of illegal operation. This work was commissioned by TACD (Traffic Area Co-ordinating Division) in the former Department of Transport. The Department's In House Analytical Consultancy (IHAC) (then called the Operational Research Unit) developed the methodology and analysed the results.
- 2.1.5. The methodology used for the Illegal Operators Survey formed the basis of the approach used in the subsequent HGV Fleet Compliance Checks.
- 2.1.6. The 2008 check took place over a period of six weeks, from 1st April to 12th May 2008. A total of 3773 HGVs and 1701 trailers were checked at roadside inspections by VOSA examiners for roadworthiness defects and traffic offences. The check sites were agreed between IHAC and VOSA's Areas to provide a good coverage of HGV operations. IHAC developed the methodology and analysed the results of the checks. HGV Fleet Compliance Checks have now been carried out over a similar time period, each year, from 1997 through to the present, with the exception of 2007.
- 2.1.7. Problems were experienced in getting the correct mix of check sites to match the profile of HGV traffic across road types, times of day and days of the week. These factors affect the accuracy of the results (see Annex B for more details).
- 2.1.8. Most Traffic Areas have now been accredited to stop vehicles; however, Areas in Scotland still require police support for stopping HGVs at check sites. It is envisaged that in future, when all Areas have been accredited to stop vehicles, this will make it easier to achieve the correct mix of check sites, since the pressures on police resources which often lead to checks being cancelled or having to be re-arranged will be removed.
- 2.1.9. Examiners were unable to achieve the required number of checks in a number of Traffic Areas between 22:00 and 06:00 due to a lack of night

workers being available following the upholding of the Working Time Directive.

- 2.1.10. Area 15 (Metropolitan) was unable to take part in the 2008 checks. An analysis of the impact this may have had on the results can be found in Annex B.
- 2.1.11. After the checks had been carried out, and follow-up checks for traffic offences had been implemented, VOSA entered the paper forms into an electronic database. These forms were then matched to electronic records from VOSA giving the results of checks by Vehicle and Traffic Examiners. The data was checked for errors and omissions before being sent to IHAC for further data-cleaning and analysis. This document reports on the findings of the analysis.

2.2. Results and Analysis

- 2.2.1. Sections 3 to 6 of this report contain the results and analysis from the 2008 HGV Fleet Compliance Check. Section 3 contains results for vehicle condition. Section 4 presents the corresponding results for trailer condition. Section 5 describes the results for traffic offences while Section 6 acts as a conclusion to the report, detailing the major results for the condition of vehicles and trailers and any important findings which arose within the report.
- 2.2.2. The information in this report is based on the forms completed by the Vehicles Examiners and Traffic Examiners conducting the checks, and on information entered into the Examiners' Mobile Compliance devices.
- 2.2.3. Wherever a difference is said to be 'significant' it means that it can be stated with 95% confidence that the difference is not due to random sampling factors (i.e. the chance of observing such a difference, where there is none, is less than one in twenty). Details about the accuracy of the results can be found in Annex B.
- 2.2.4. In this report, the term 'vehicle' refers to the tractor unit or rigid vehicle only, and not the vehicle and trailer combination.
- 2.2.5. In some pie charts the percentages do not add up to 100 per cent; this is due to rounding the figures to 1 decimal place.
- 2.2.6. In some graphs, different columns or bars may have roughly the same percentage attached to them, yet they may be based upon different sample sizes. Consequently, statements about the significance of these columns may differ. This effect is due to sample sizes. A lower number of vehicles in a particular category means that a larger difference between that category and all other vehicles is required for the difference to be classified as statistically significant.
- 2.2.7. The statistical tests carried out in this report look at a number of categories, e.g. body types of vehicles, and compare the number of prohibitions, inspection notices or traffic offences received/issued by one category against the total number received/issued by all other categories combined. As stated in the point above, the number of checks carried out in each category is also taken into account. As a result, even if the numbers or percentages of prohibitions, inspection notices or traffic offences are similar in two or more different categories, one may be significantly different to the rest of the sample, but not significantly different to another individual

category. For example, Flatbed vehicles may be significantly different to all other body types combined, but not significantly different to Skips. The results in this report are only concerned with significant differences between one category and all others combined.

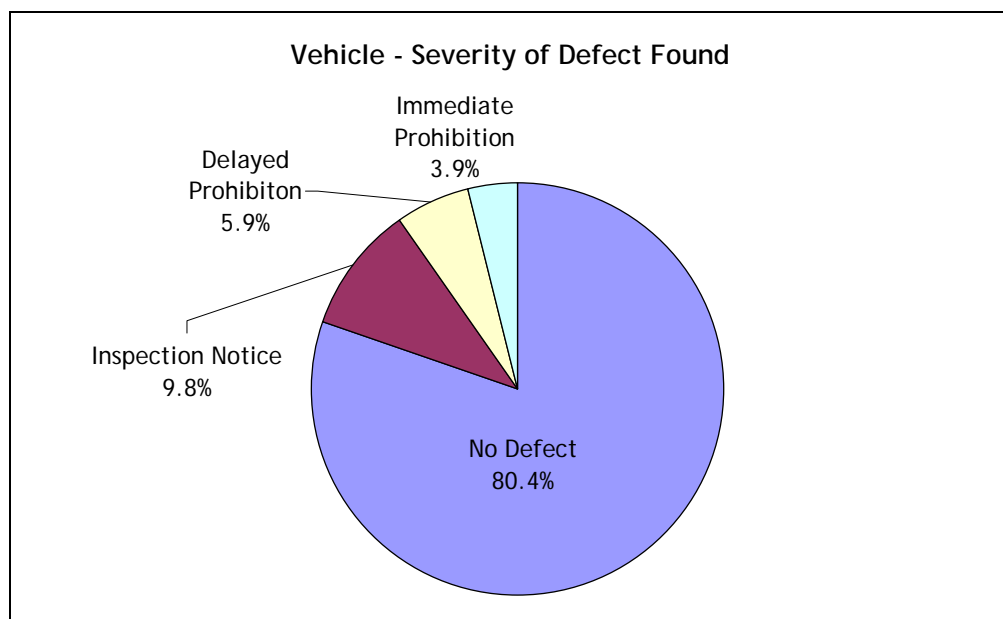
- 2.2.8. A number of correlation coefficients have been quoted in this report. These figures describe the extent to which variations in one variable (e.g. condition) are accompanied by variations in a second variable (e.g. age). Correlation coefficients lie between 0 and ± 1 . A zero result implies there is no correlation between the variables. The closer the result is to ± 1 , the stronger the correlation. The sign indicates the direction of the relationship, i.e. a positive sign indicates that as age increases so the condition improves, while a negative sign indicates that as age increases, condition deteriorates. It is to be stressed that correlation between a pair of variables does not necessarily indicate that one of the variables directly influences the other. For example, it is entirely possible that a third and unseen variable is responsible for the observed correlation.
- 2.2.9. Roadworthiness defects on a vehicle fall into three categories. These are:
- Immediate Prohibition - issued where any of the defects on the vehicle is such that further driving of it would involve a risk of injury to any person;
 - Delayed Prohibition - issued where defects render the vehicle either unfit, or likely to become unfit, for use, but pose no immediate risk of injury. Delayed prohibitions come into force not later than ten days from the date of inspection;
 - Vehicle Inspection Notice - issued where advisory items or minor defects are found which are not serious enough to warrant prohibition. This notice is advisory only, and does not in itself prevent further use of the vehicle.
- 2.2.10. In the context of the following analysis, it is assumed that where a defect has been found but no prohibition issued, a vehicle inspection notice was issued.

3. Vehicles

3.1. Main Results

- 3.1.1. 3773 vehicles were checked. 3.9% of vehicles were issued with immediate prohibitions and 5.9% with delayed prohibitions². In total, 9.8% of the vehicles checked were found to have prohibitable defects.
- 3.1.2. 9.8% of vehicles had a roadworthiness defect that warranted an inspection notice, but no prohibitable defect.
- 3.1.3. 80.4% of all vehicles checked were free from roadworthiness defects.

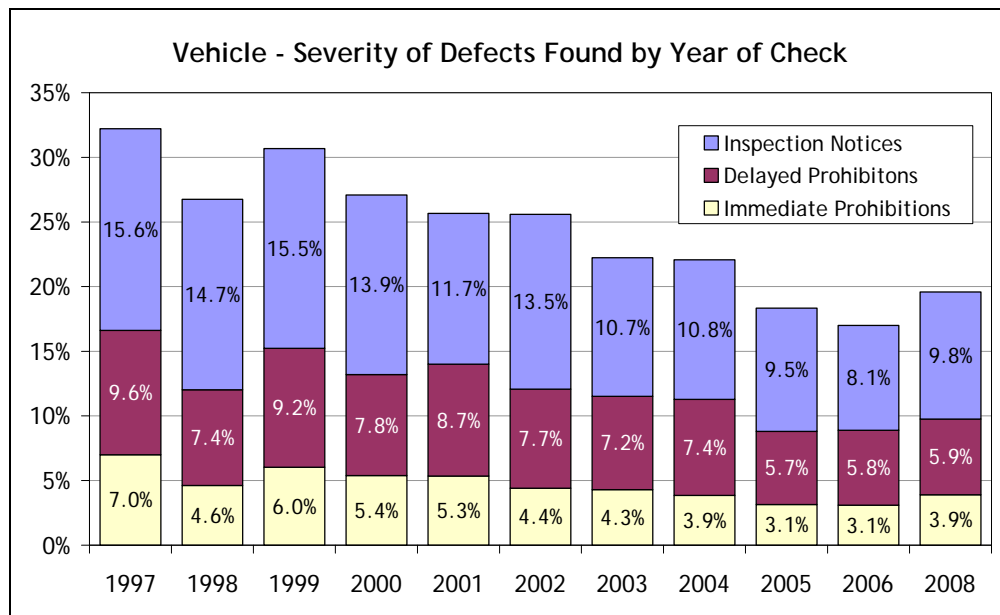
Figure 1



- 3.1.4. Annex D contains a full list of the categories of prohibitable defects found on vehicles. The category with the most immediate prohibitions was Brake Systems & Components (17.2% of all immediate prohibitions), followed by Condition of Tyres (16.3%), and Direction Indicators and Hazard Warning Lamps (10.8%).
- 3.1.5. The defect category with the most delayed prohibitions was Brake Systems & Components (27.2% of all delayed prohibitions), followed by Condition of Tyres (19.6%), and Suspension (11.2%).
- 3.1.6. For total prohibitions (immediate and delayed), the category with the most defects was Brake Systems & Components (22.7% of total prohibitions), followed by Condition of Tyres (18.1%) and Suspension (10.2%).

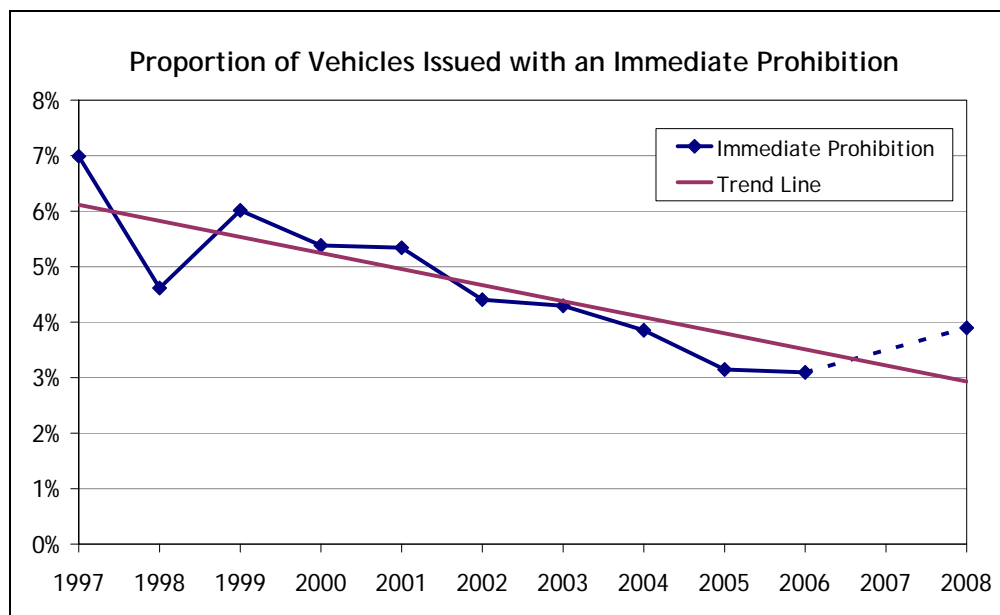
² A vehicle with both immediate and delayed prohibition defects is issued an immediate prohibition.

Figure 2



3.1.7. The proportion of immediate prohibitions issued in 1997, 1999, 2000, and 2001 was significantly higher than in other years, while the proportion of immediate prohibitions issued in 2004, 2005, 2006 and 2008 was significantly lower than in other years. Furthermore, there is a statistically significant trend, suggesting a drop at an average rate of 0.32% ($\pm 0.16%$ at the 95% confidence level) per annum in the number of immediate prohibitions issued to vehicles during the twelve year period the survey has been running.

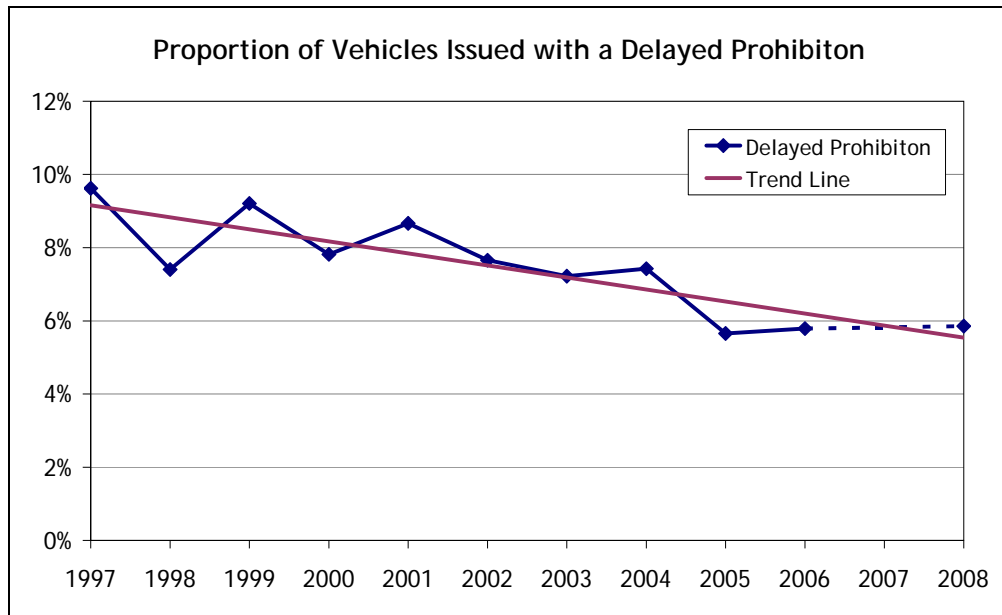
Figure 3



3.1.8. The proportion of delayed prohibitions issued in 1997, 1999, and 2001 was significantly higher than in other years, while the proportion of delayed prohibitions issued in 2005, 2006, and 2008 was significantly lower than in other years. Furthermore, there is a statistically significant trend, suggesting

a drop at an average rate of 0.36% ($\pm 0.17\%$ at the 95% confidence level) per annum in the number of delayed prohibitions issued to vehicles during the twelve year period the survey has been running.

Figure 4



- 3.1.9. The proportion of inspection notices issued in 1997, 1998, 1999, 2000, and 2002 was significantly higher than in other years while the proportion of inspection notices issued in 2003, 2004, 2005, 2006 and 2008 was significantly lower than the proportion issued in other years. Furthermore, there is a statistically significant trend, suggesting a drop at an average rate of 0.74% ($\pm 0.24\%$ at the 95% confidence level) per annum in the number of inspection notices issued to vehicles during the twelve year period the survey has been running.

Figure 5

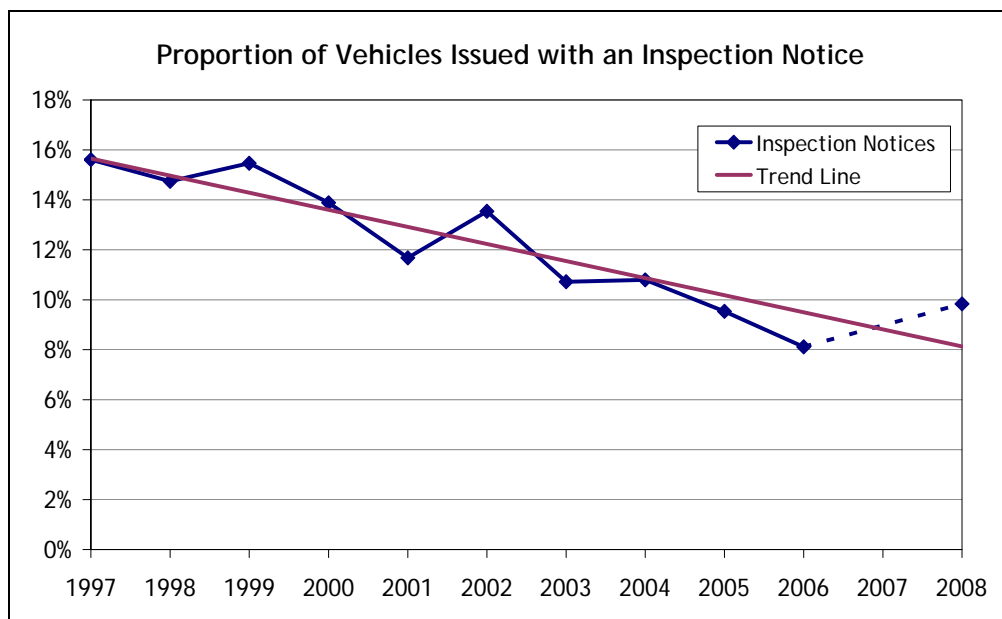
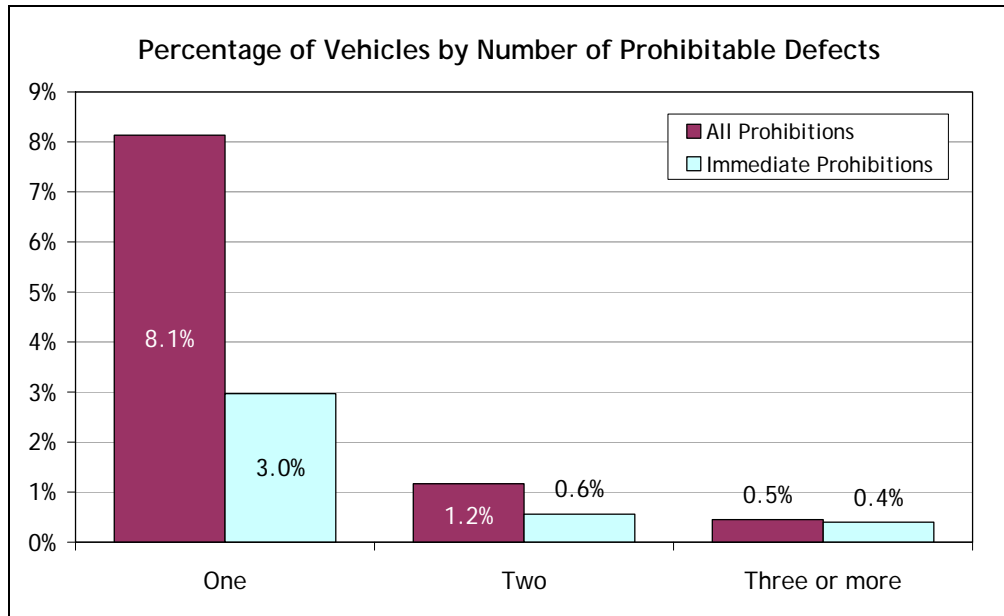


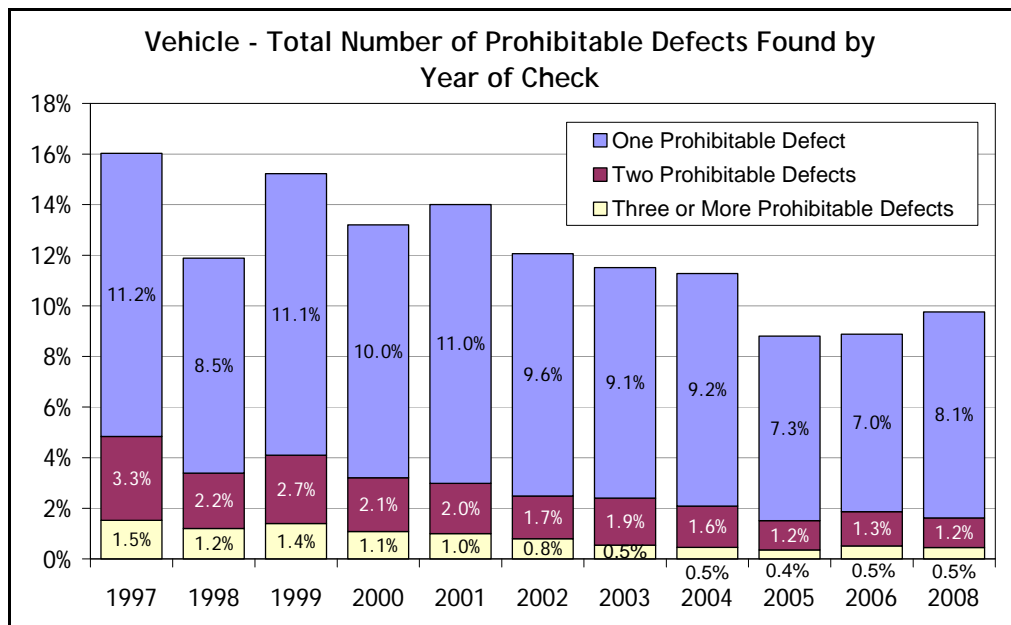
Figure 6



3.1.10. 8.1% of the vehicles checked had one prohibitible defect, 1.2% had two prohibitible defects and 0.5% had three or more prohibitible defects.

3.1.11. 3.0% of the vehicles checked had one immediately prohibitible defect, 0.6% had two immediately prohibitible defects and 0.4% had at least three immediately prohibitible defects³. These vehicles may also have had delayed prohibitible defects.

Figure 7



3.1.12. The table below details the count of different numbers of defects found in each year that the HGV FCC survey has been run. The highest number of

³ These percentages total 4.0%, which differs from the 3.9% immediate prohibition rate quoted through out the report, due to rounding.

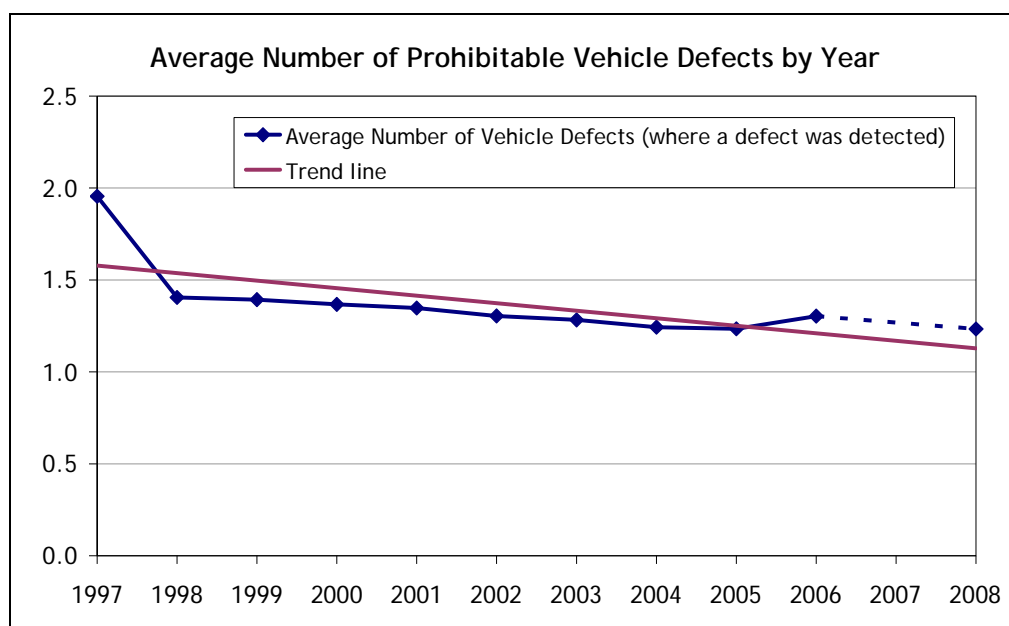
defects found on a single vehicle was 11, in 1997. In 2008, the highest number of defects found on a single vehicle was 6.

Table 1

| Year | Number of Defects Found | | | | | | | | | | | Total |
|-------------|-------------------------|-----|----|----|----|----|---|---|---|----|----|------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
| 1997 | 326 | 232 | 49 | 52 | 10 | 13 | 2 | 4 | 0 | 1 | 2 | 691 |
| 1998 | 287 | 73 | 33 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 400 |
| 1999 | 365 | 90 | 34 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 501 |
| 2000 | 451 | 96 | 34 | 9 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 596 |
| 2001 | 398 | 72 | 20 | 9 | 4 | 0 | 1 | 1 | 1 | 0 | 0 | 506 |
| 2002 | 324 | 57 | 16 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 408 |
| 2003 | 367 | 75 | 12 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 464 |
| 2004 | 422 | 75 | 16 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 518 |
| 2005 | 308 | 49 | 9 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 372 |
| 2006 | 245 | 47 | 11 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 310 |
| 2008 | 307 | 44 | 12 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 368 |

3.1.13. The graph below plots the average number of vehicle defects, where a defect has been detected, by year of the HGV FCC check. The highest average number of defects was in 1997 (1.96) and the lowest was this year, 2008 (1.23).

Figure 8

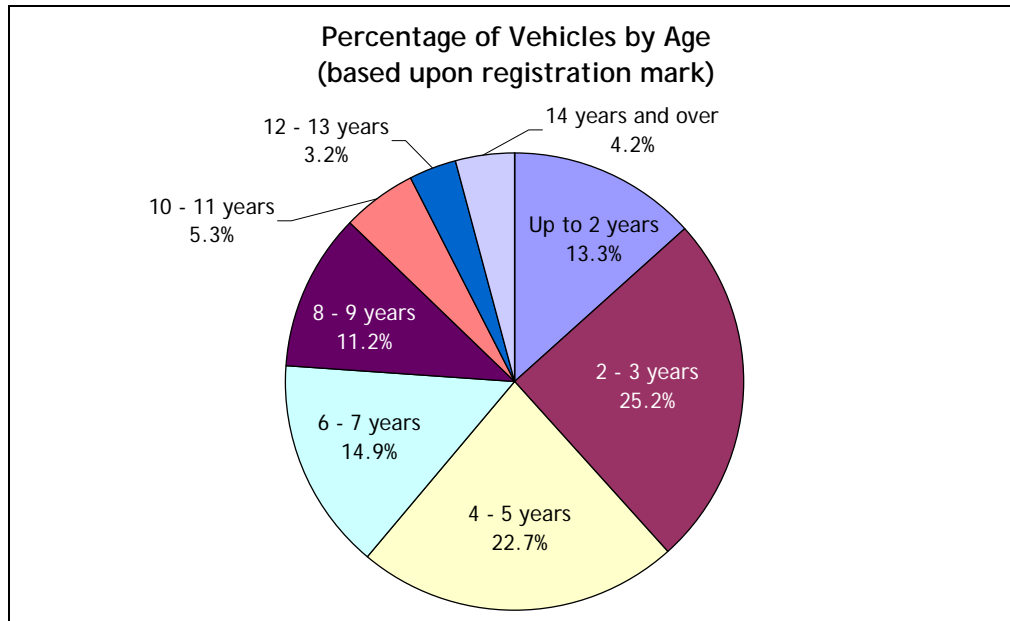


3.1.14. The average number of prohibitable vehicle defects by year shows a statistically significant trend: a drop of 0.04 (± 0.03 at the 95% confidence level).

3.2. Age

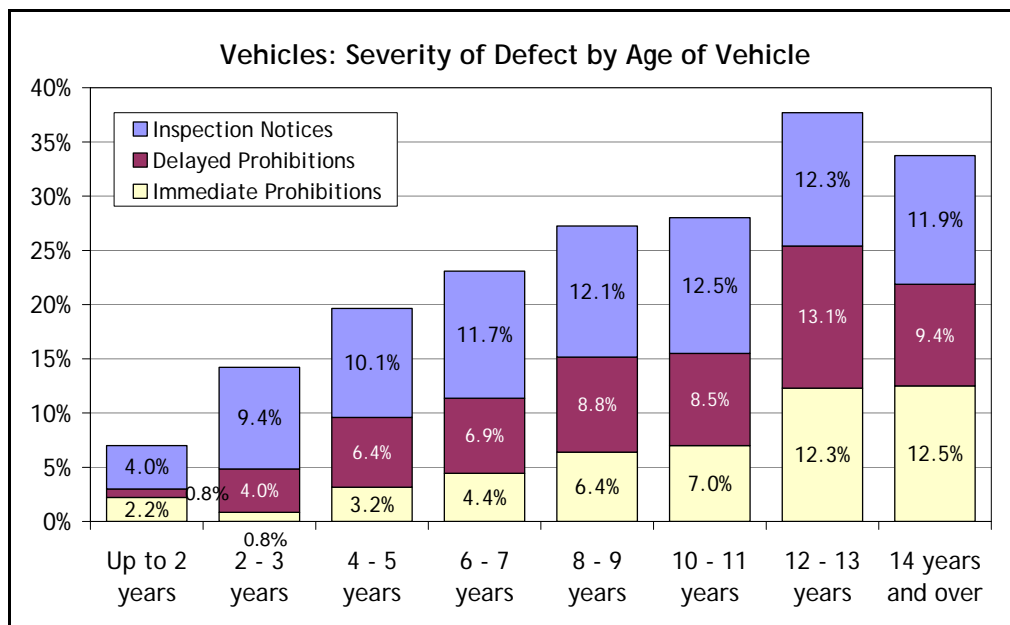
3.2.1. The age of the vehicle was taken from the vehicle registration mark, or from VOSA records.

Figure 9



3.2.2. 61.1%⁴ of the vehicles checked were less than six years old. The age group of 2 to 3 years old was the largest, with 25.2% of all vehicles checked falling into this category.

Figure 10



3.2.3. Vehicles two years old or younger received significantly fewer total prohibitions and immediate prohibitions than other age categories. Vehicles

⁴ This figure is from the raw data. The sum of the values in Figure 9 is 61.2% due to rounding.

aged eight years or older received a significantly higher number of total prohibitions than each of the other age categories. Vehicles aged eight to 11 years and 14 years and over also received a significantly higher number of immediate prohibitions than other age categories. The results for vehicles aged between 12 and 13 years are inconclusive due to insufficient data.

- 3.2.4. Relatively large and positive correlations were found between the age of the vehicle and the number of prohibitions given. Correlations ranged between 0.896 for delayed prohibitions and 0.950 for immediate prohibitions, giving a 0.961 correlation for total prohibitions. This suggests that as the age of a vehicle increases so the number of prohibitions given to vehicles in that age group increases.
- 3.2.5. Vehicles under 2 years old received significantly fewer inspection notices than other age categories. There was no significant difference between the number of inspection notices issued to vehicles aged 2 years and over.
- 3.2.6. The correlation between age and the number of inspection notices issued is 0.792. This suggests that as the age of a vehicle increases so the number of inspection notices given to that age group increases, but this correlation is not as large as those for the other categories mentioned above. (Note: This analysis considered all vehicles of 14 years and older as one group.)

3.3. Maximum Permissible Gross/Train Weight

- 3.3.1. The categories used for this analysis are arbitrary; they are designed solely to allow for analysis by maximum weight; no significance should be placed on the selection of the weight classifications.
- 3.3.2. The largest category was vehicles with a maximum permissible gross/train weight of 44 tonnes which consisted of 32.4% of the vehicles checked. The next largest categories were vehicles with a maximum permissible weight of 3.5 - 9.9 tonnes and 10 - 19.9 tonnes (21.2% and 19.6% of the total sample respectively).

Figure 11

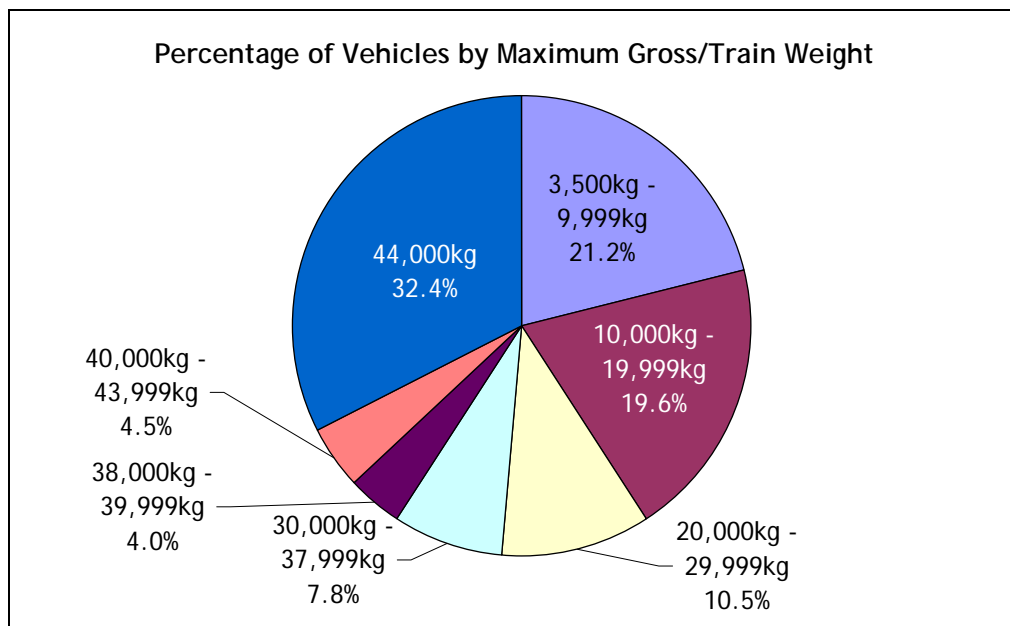
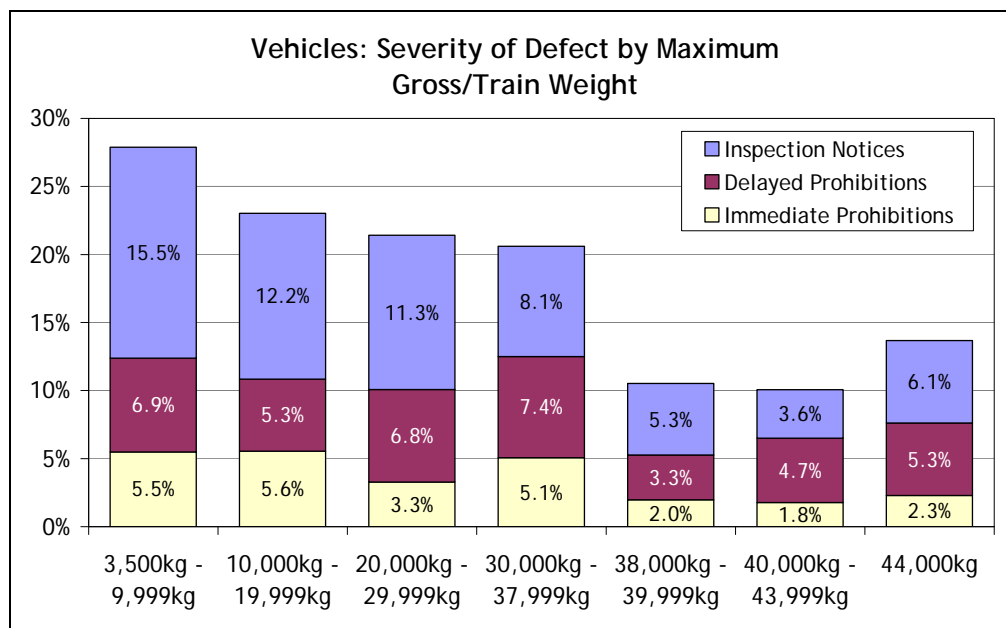


Figure 12



- 3.3.3. Vehicles with a maximum gross/train weight of 3.5 to 9.9 tonnes received significantly more total prohibitions than other vehicles. Vehicles weighing 44 tonnes received significantly fewer total prohibitions, but this may be related to their substantially lower average age.
- 3.3.4. Vehicles weighing less than 20 tonnes received significantly more immediate prohibitions than other weight categories. Vehicles weighing 44 tonnes received significantly fewer immediate prohibitions than other weight categories.
- 3.3.5. The correlation between the maximum weight of a vehicle and the number of immediate prohibitions issued is large and negative (-0.838). For the total number of prohibitions issued, this figure is -0.745 . Both suggest that as the maximum weight of a vehicle increases so the likelihood of receiving a prohibition (either immediate or delayed) decreases.
- 3.3.6. Vehicles under 20 tonnes were significantly more likely to receive an inspection notice. Vehicles weighing between 40 and 44 tonnes were significantly less likely to receive an inspection notice.
- 3.3.7. The correlation between the maximum weight of a vehicle and the number of inspection notices issued is large and negative, with a value of -0.928 . This means that as the maximum weight of a vehicle increases so the likelihood of receiving an inspection notice decreases.

3.4. Traffic Area Where Vehicle was Checked

- 3.4.1. VOSA Areas combine geographically to form Traffic Areas. The distribution of checks across Traffic Areas was not uniform. There are two reasons for this. First, the number of VOSA Areas in each Traffic Area varies, with only two VOSA areas for the Welsh Traffic Area and four for each of the Eastern and North Eastern Traffic Areas. Second, not all of the VOSA areas were able to carry out the same number of checks. This was due to factors such as the selection of sites (i.e. type of road and time of check), staffing levels, and weather conditions. In some Areas where VOSA stopping officers are

not operative (primarily Scotland), the number of checks was also affected by the availability of police support.

- 3.4.2. The Traffic Area in which the most checks were carried out was the Eastern Traffic Area with 17.6% of all checks. The Traffic Area in which the fewest vehicle checks were carried out was the Welsh Traffic Area with 4.4%.

Figure 13

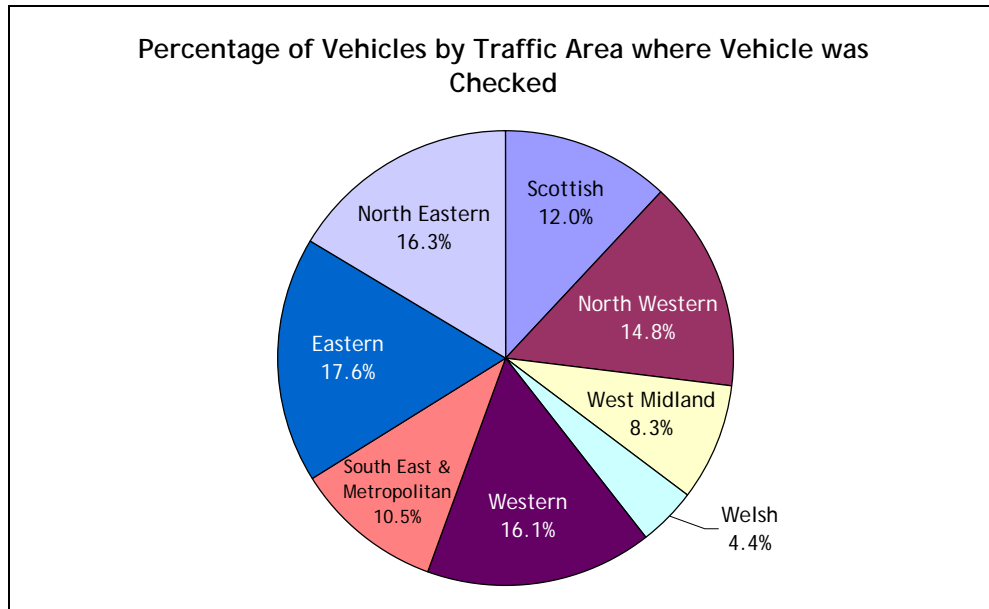
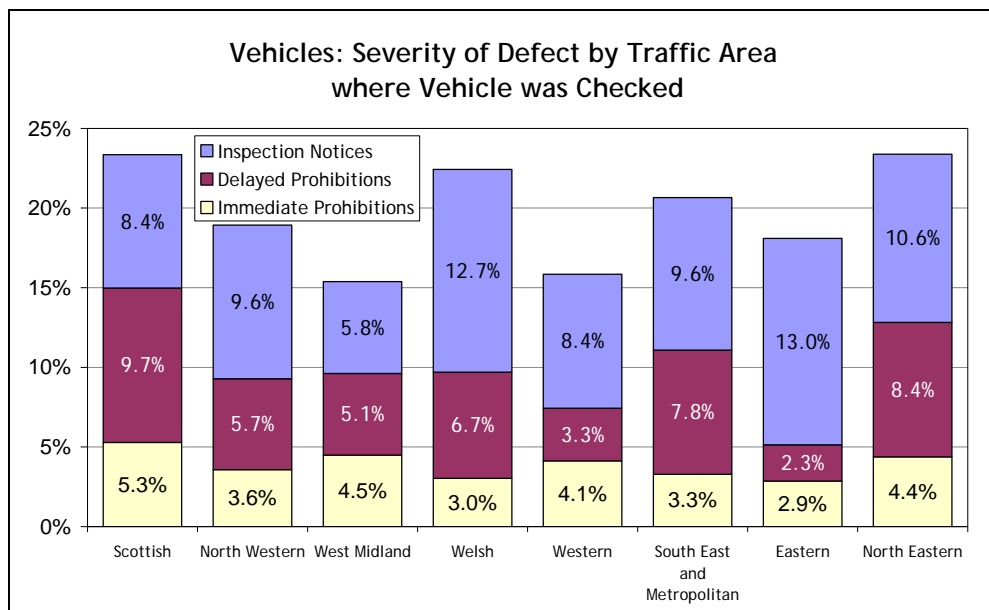


Figure 14



- 3.4.3. Vehicles checked in the Scottish and North Eastern Traffic Areas received significantly more total prohibitions than those checked in other Traffic Areas. Vehicles checked in the Western and Eastern Traffic Areas received significantly fewer total prohibitions than those checked in other Traffic Areas.

- 3.4.4. There were no significant differences in the receipt of immediate prohibitions in any of the Traffic Areas where vehicles were checked.

- 3.4.5. Vehicles checked in the West Midland Traffic Area received significantly fewer inspection notices than other Traffic Areas. Vehicles checked in the Eastern Traffic Areas received significantly more inspection notices than other Traffic Areas.

3.5. Traffic Area Where Operator of Vehicle was Licensed

- 3.5.1. As with the Traffic Area where vehicles were checked, the distribution of HGV operators across Traffic Areas was not uniform. This is because the number of operators licensed within each area varies with its size and geography.
- 3.5.2. The vehicles checked were most likely to be licensed to operators in the North Eastern (18.2%) Traffic Area. They were least likely to be licensed to operators in the Welsh Traffic Area (5.8%).

Figure 15

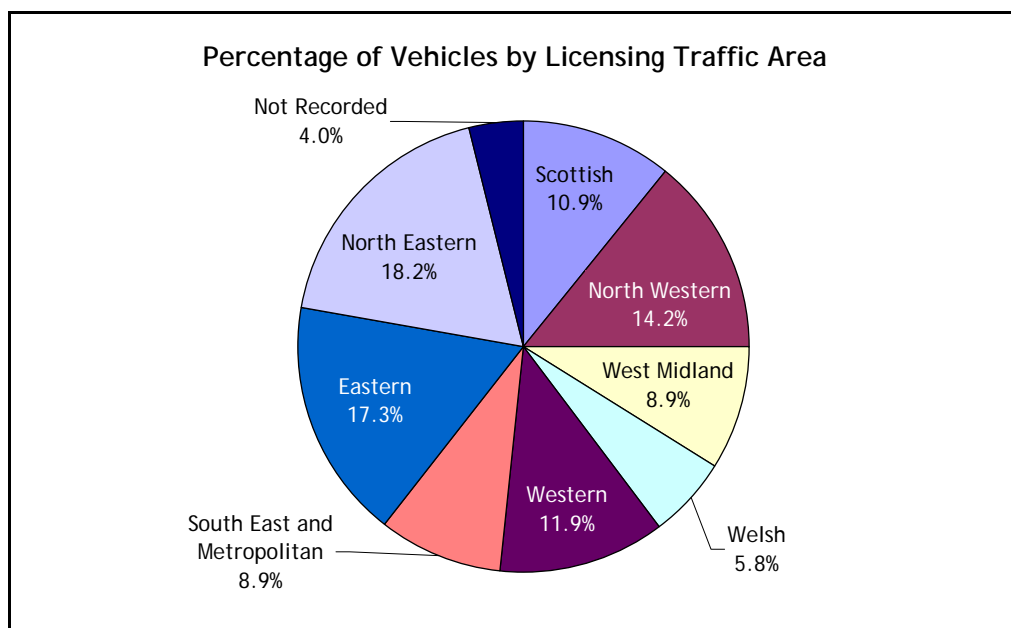
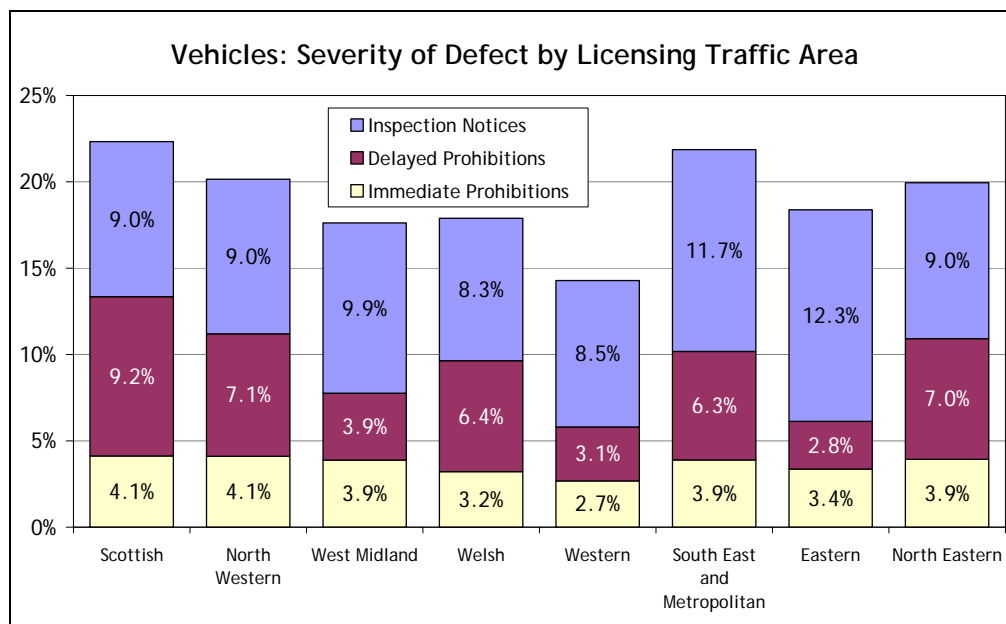


Figure 16

- 3.5.3. Vehicles licensed in the Scottish Traffic Area received significantly more total prohibitions than those from other areas, whereas vehicles licensed in the Western and Eastern Traffic Areas received significantly fewer.
- 3.5.4. No significant differences were found in the proportions of immediate prohibitions issued to vehicles licensed in each of the Traffic Areas.
- 3.5.5. Vehicles licensed in the Eastern Traffic Area received significantly more inspection notices, given the number of checks taken place, than those from other areas. It should be noted that this statistical test, like the others in this report, compares the number of notices received by vehicles licensed in the Eastern Traffic Area against the total number received by vehicles in all other areas, as opposed to testing against each other Traffic Area individually (see 2.2.7).

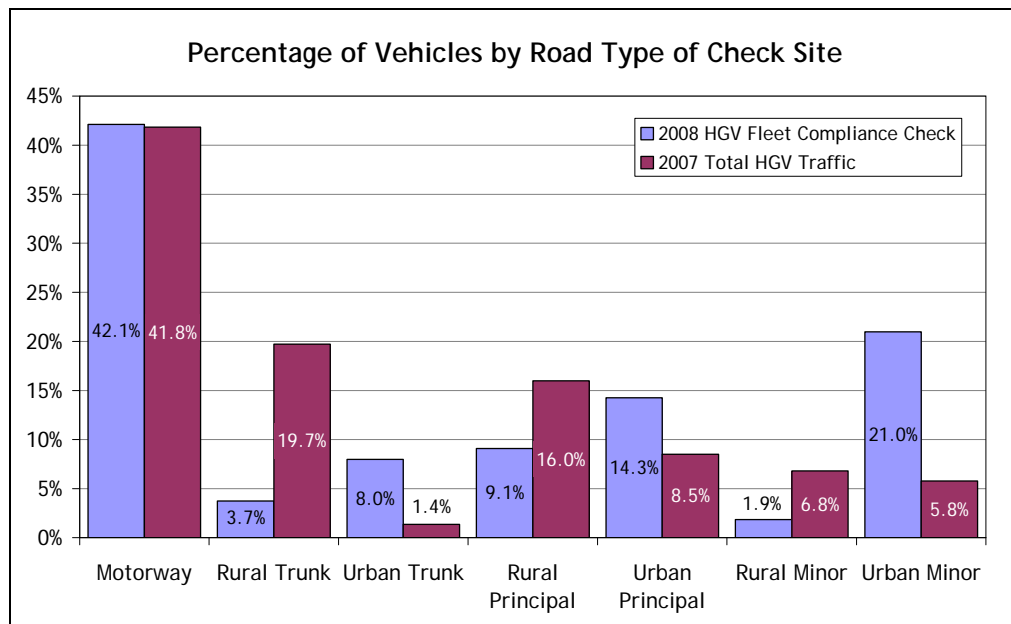
3.6. Road Type of Check

- 3.6.1. The bar chart below shows the distribution across road types of the checks carried out in this survey compared with total HGV traffic⁵. The sample distribution of checks by road type differs from the expected distribution of traffic⁶. Whilst this difference is statistically significant at 95% confidence, it is unlikely that the magnitude undermines the validity of the survey (this point is discussed in more detail in Annex B.6). The differences are partly due to insufficient numbers of checks being carried out on rural roads and partly due to an excess of checks conducted on urban roads. Problems with achieving the desired sample distribution were largely caused by practical constraints on some check sites, for example minor road sites being less likely to meet health and safety standards, rural road sites being more likely to be rejected due to anticipated traffic flow being very low, and some VOSA Areas without their own stopping officers lacking police support.

⁵ Source: Transport Statistics Great Britain 2007 Edition

⁶ For HGVs in GB.

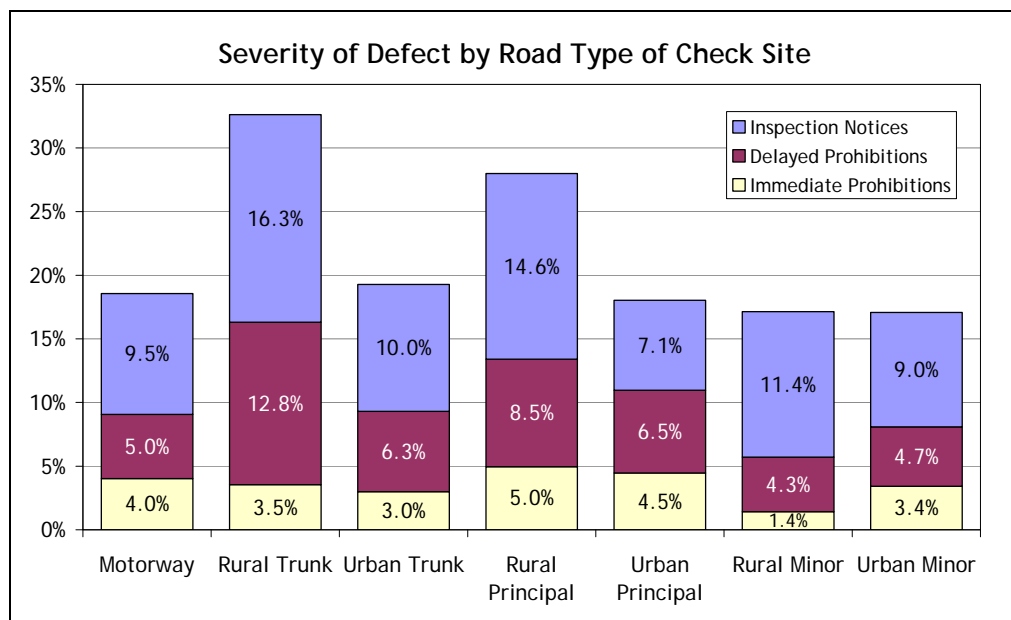
Figure 17



3.6.2. Vehicles checked on rural trunk and rural principal roads received significantly more total prohibitions than vehicles checked on other types of road.

3.6.3. There were no statistically significant numbers of immediate prohibitions issued on vehicles travelling on all road types, with the exception of those travelling on rural minor roads, where there was insufficient data to determine whether or not the small number issued was significantly lower than on other roads.

Figure 18



3.6.4. Vehicles checked on rural trunk and rural principal roads were significantly more likely to be issued with an inspection notice than vehicles checked on other road types. Those checked on urban principal roads were significantly

less likely to be issued with an inspection notice than those on other road types.

3.7. Time of Check

- 3.7.1. Time of day was split into three time periods for sampling. It was felt that the time periods should not be smaller than this, otherwise they could become too restrictive for operational staff. However, when presenting the results each of these time periods was split in two, to give more detailed results. The three time periods used for sampling were:
- 06:00 to 14:00
 - 14:00 to 22:00, and
 - 22:00 to 06:00.
- 3.7.2. The graph below shows the distribution of checks carried out in this survey at different times of day compared with total HGV⁷ traffic at different times of the day. The distribution of checks is significantly different from the average distribution of national traffic across the different time periods. Insufficient checks were carried out in the periods 18:00 - 22:00 and 02:00 - 06:00, and more checks than needed were conducted in the periods 06:00 - 10:00 and 14:00 - 18:00. The instructions given to each VOSA Area detailing which checks to carry out specified the correct number of checks to be carried out at each time of day to reflect the national traffic flows at that time period. However, as with the road type distribution, problems in achieving the required sample distribution arose mainly from practical constraints, for example health and safety issues and with the Working Time Directive, and a failure to get police support (where applicable) for the checks at the times detailed in the check site instructions.
- 3.7.3. Since the distribution of HGV traffic at different times of the day was used as a factor when the sample of check sites for the survey was prepared, this difference could have an effect on accuracy. This is covered in further detail in Annex B.

⁷ Source: Transport Statistics Great Britain 2007 Edition

Figure 19

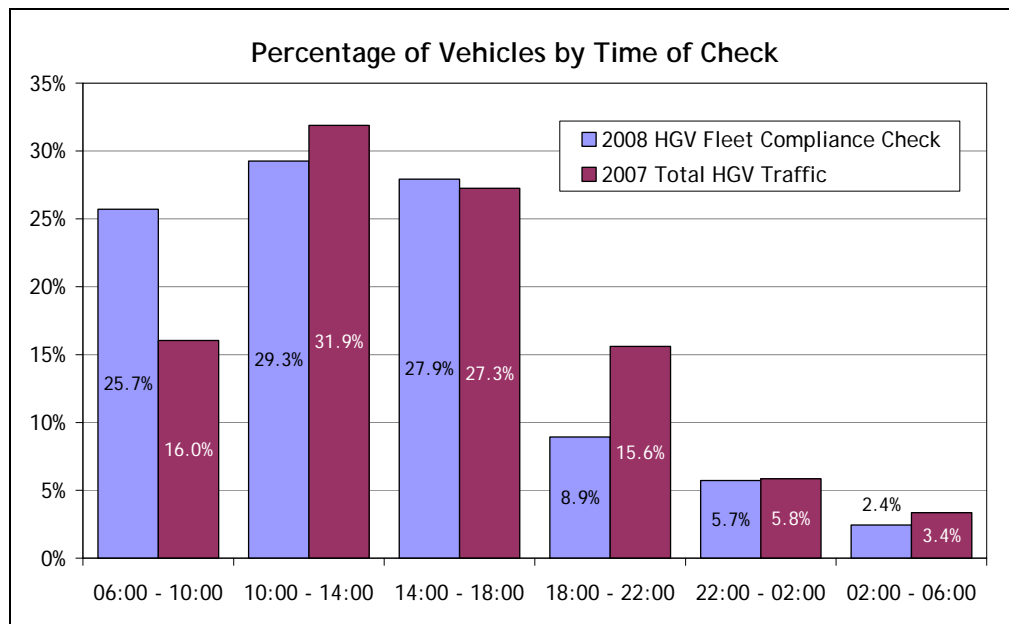
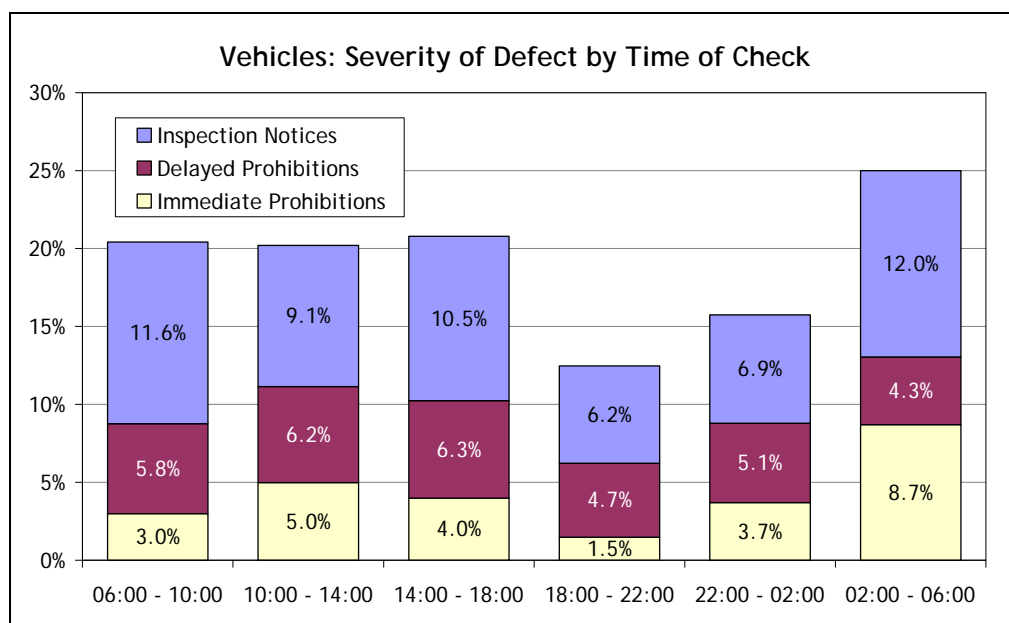


Figure 20



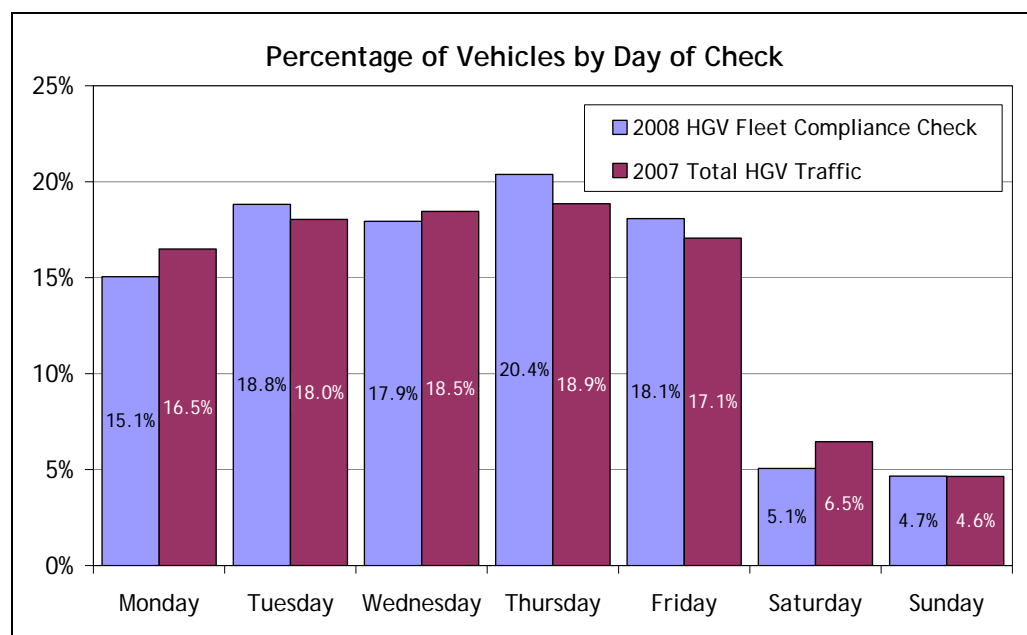
- 3.7.4. The proportion of total prohibitions issued between 18:00 and 22:00 was significantly less than during other time periods of the day.
- 3.7.5. Significance tests applied to the rate of immediate prohibitions by time of day revealed that significantly more immediate prohibitions were issued between 10:00 and 14:00, but significantly fewer between 18:00 and 22:00. No conclusive results can be found for checks between 02:00 and 06:00 due to small sample sizes.
- 3.7.6. The proportion of inspection notices issued to vehicles checked between 06:00 and 10:00 was significantly higher than other time periods. Although the proportion issued to vehicles checked between 02:00 and 06:00 appears high, it is not significant due to the small number of checks carried out in this

time period (see 2.2.6 for further details). The proportion issued between 18:00 and 22:00 was significantly lower.

3.8. Day of Check

- 3.8.1. The graph below shows the distribution of checks carried out in this survey on different days of the week compared with national HGV traffic⁸ figures. The survey's distribution is not significantly different from the average distribution of HGV traffic across days of the week, despite there being some slight variations. As with the time periods, these differences in the distributions occur due to practical constraints such as meeting the Working Time Directive.

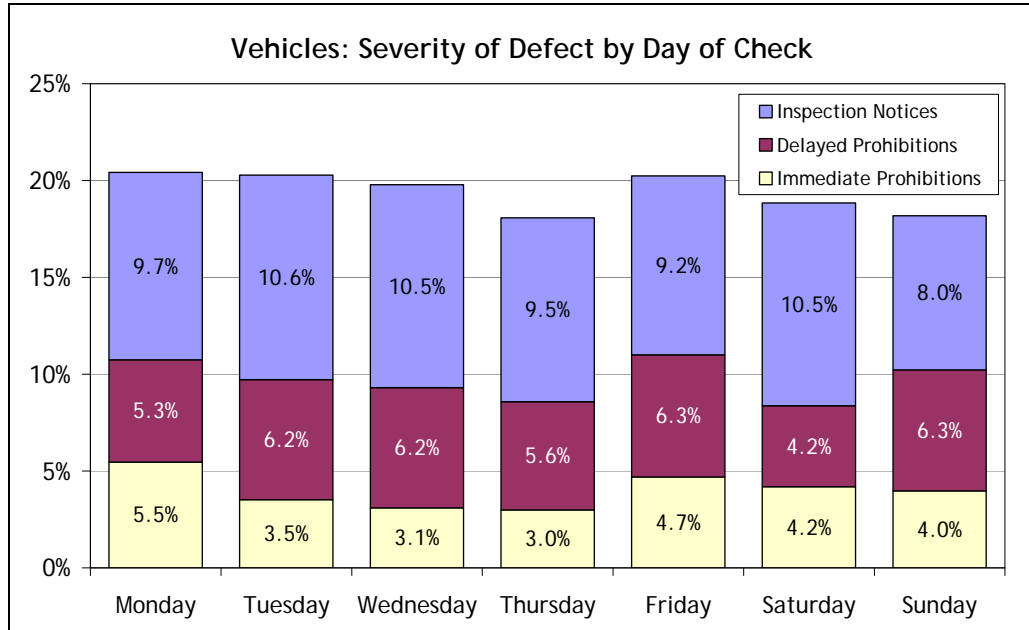
Figure 21



- 3.8.2. Significance tests applied to the rate of total prohibitions by day of check revealed no significant differences between days, although vehicles checked on a Monday received a significantly higher proportion of immediate prohibitions than those checked on other days.
- 3.8.3. Significance tests applied to the rate of inspection notices issued by day of check revealed no significant differences between days.

⁸ Source: Transport Statistics Great Britain 2007 Edition

Figure 22



3.9. Body Type

3.9.1. 51.1% of vehicles had a Box/Tautliner body type. The next most common body types were Flatbed (15.9%) and Tipper (10.0%).

Figure 23

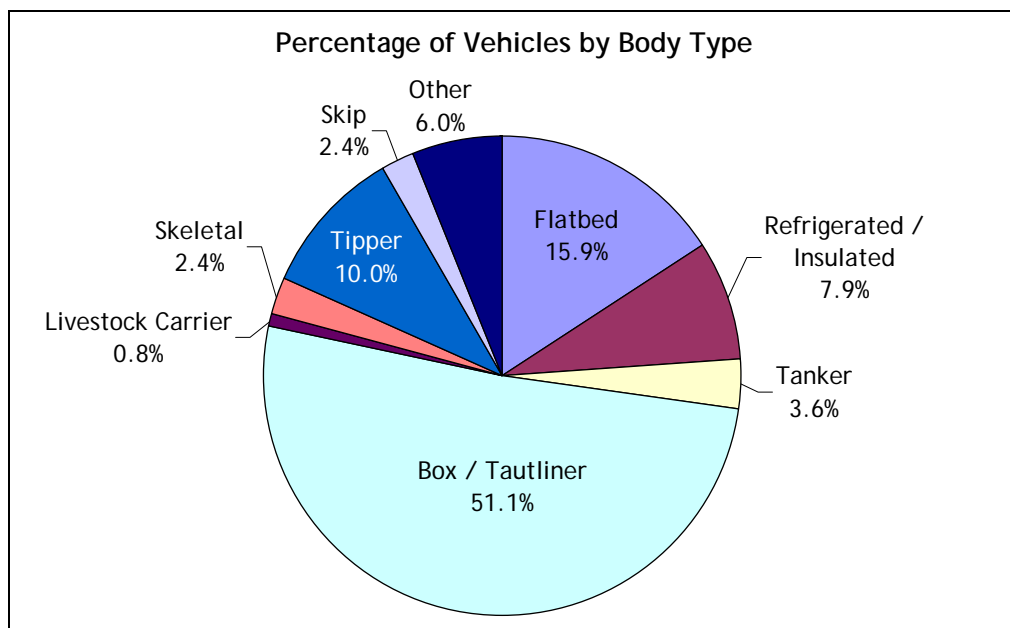
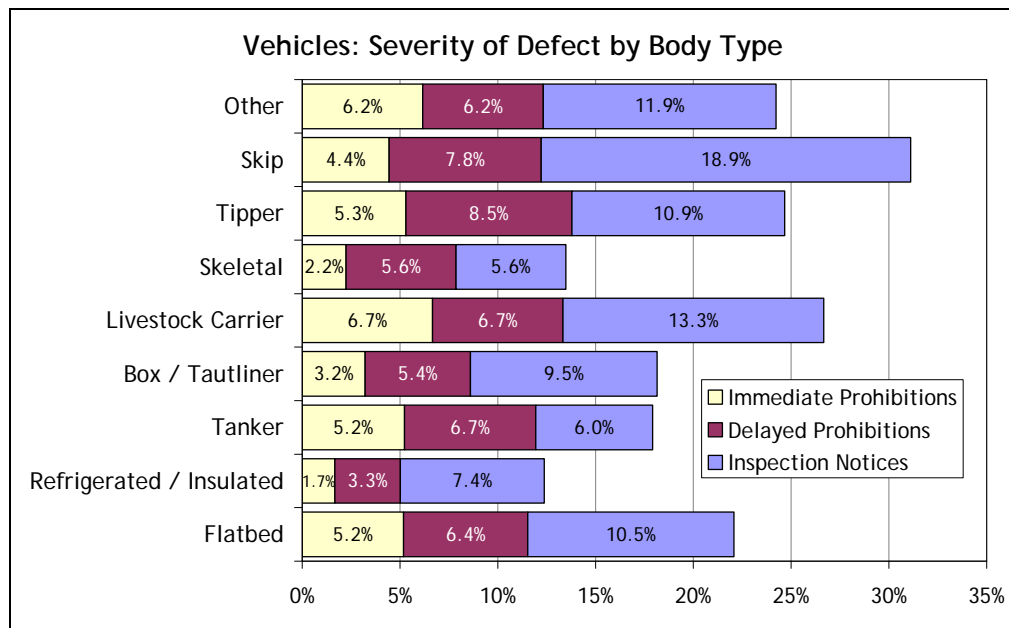
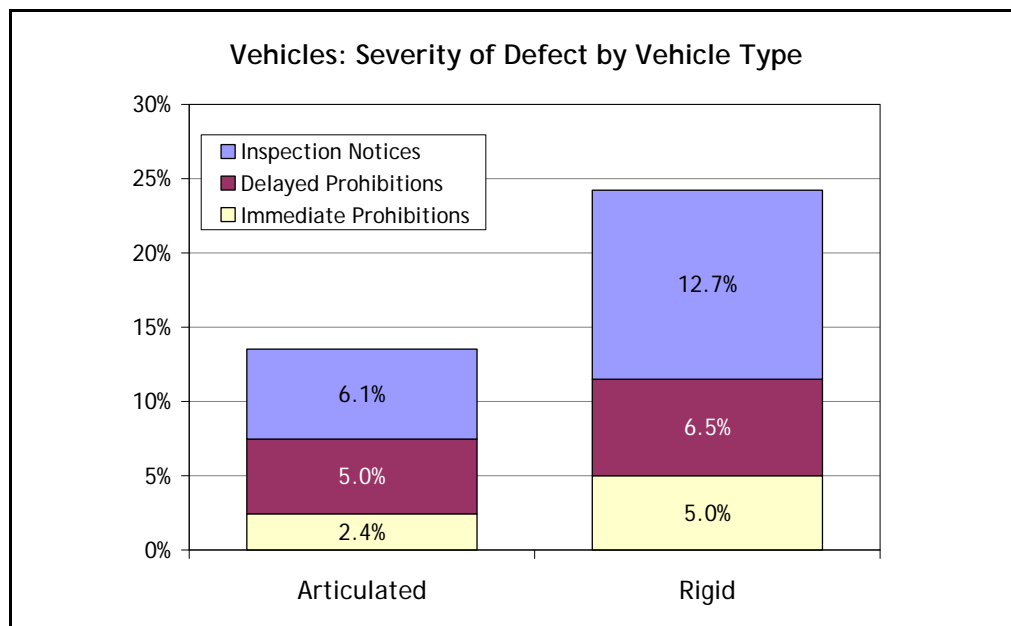


Figure 24

- 3.9.2. Total prohibitable defects were significantly higher on Tippers and significantly lower on Box/Tautliner and Refrigerated/Insulated vehicles than on those of other body types. Results for Livestock Carriers were inconclusive due to insufficient data.
- 3.9.3. The proportion of immediate prohibitions issued was significantly lower for Box/Tautliner and Refrigerated/Insulated vehicles than on those of other body types. Results for Livestock Carriers, Skeletal HGVs and Skips were inconclusive due to insufficient data.
- 3.9.4. The proportion of inspection notices issued to Skips was significantly higher than for other body types. No other significant differences in the proportions of inspection notices issued to vehicles by their body type were found. The result for Livestock Carriers was inconclusive due to insufficient data.

3.10. Vehicle Type

- 3.10.1. Rigid vehicles were more common than articulated vehicles: 56.7% of the sample were rigid vehicles and 43.3% were articulated vehicles.

Figure 25

- 3.10.2. Rigid vehicles received significantly more total prohibitions than articulated vehicles.
- 3.10.3. Rigid vehicles received significantly more immediate prohibitions than articulated vehicles.
- 3.10.4. Rigid vehicles received significantly more inspection notices than articulated vehicles.

3.11. Number of Axles on Vehicle

- 3.11.1. This section considers the number of axles on the tractor unit or rigid vehicle only. It does not include the number of axles on the trailer.
- 3.11.2. The majority of vehicles checked had two axles (51.7%). Only 6.6% of vehicles had four axles.

Figure 26

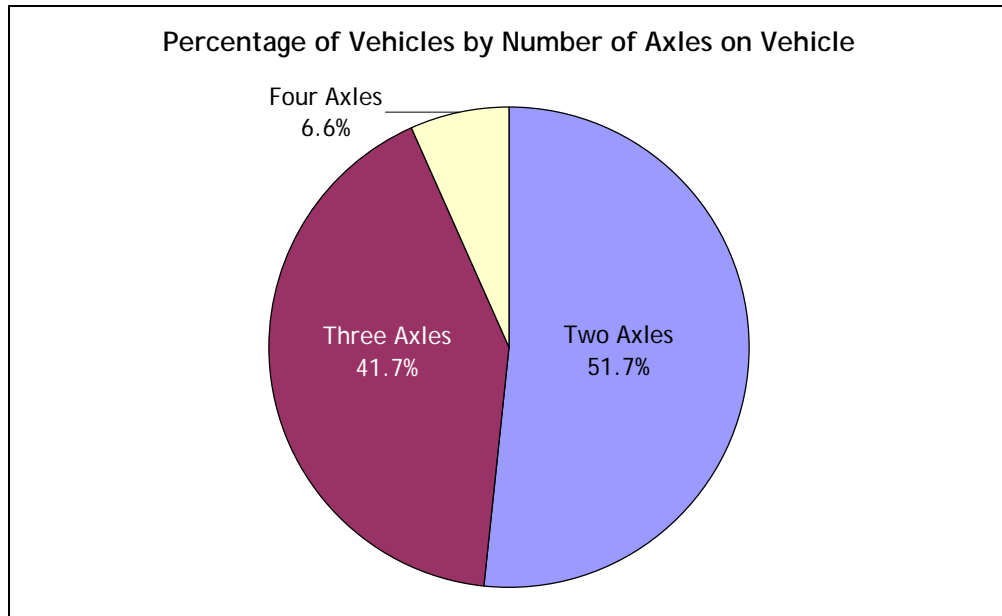
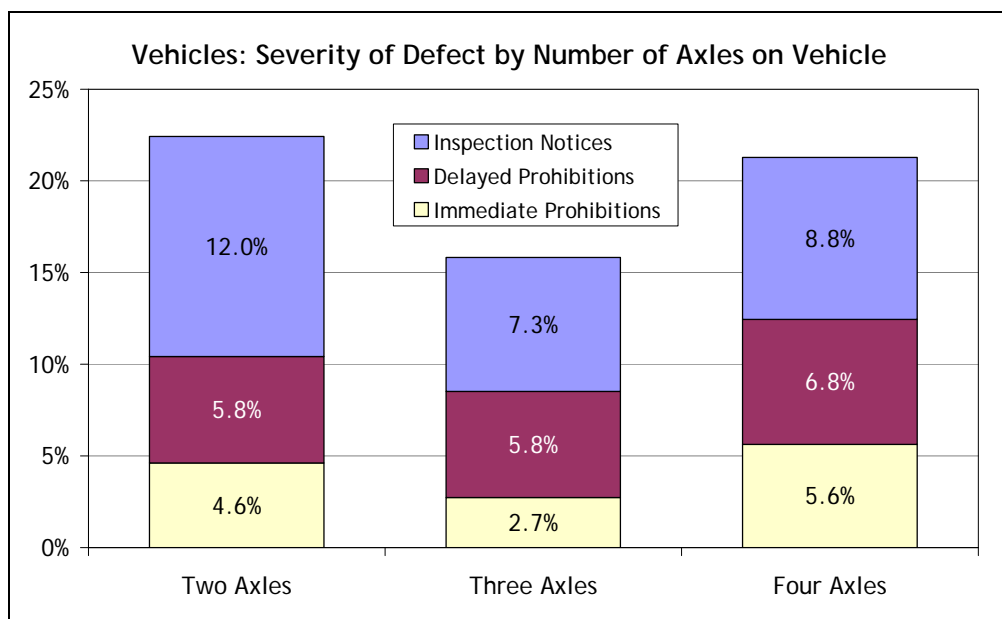


Figure 27



- 3.11.3. Vehicles with three axles received significantly fewer prohibitions (delayed and immediate combined) than other vehicles.
- 3.11.4. Vehicles with two axles received significantly more immediate prohibitions than other vehicles. Vehicles with three axles received significantly fewer immediate prohibitions than other vehicles.
- 3.11.5. Significantly more inspection notices were given to vehicles with two axles. Significantly fewer inspection notices were given to vehicles with three axles.

3.12. Driver Employment

3.12.1. The majority of vehicles checked (89.8%) were driven by a driver employed by the operator. Only 4.3% of drivers were employed through an agency and another 4.3% were self-employed. This information was not recorded in 1.6% of checks.

Figure 28

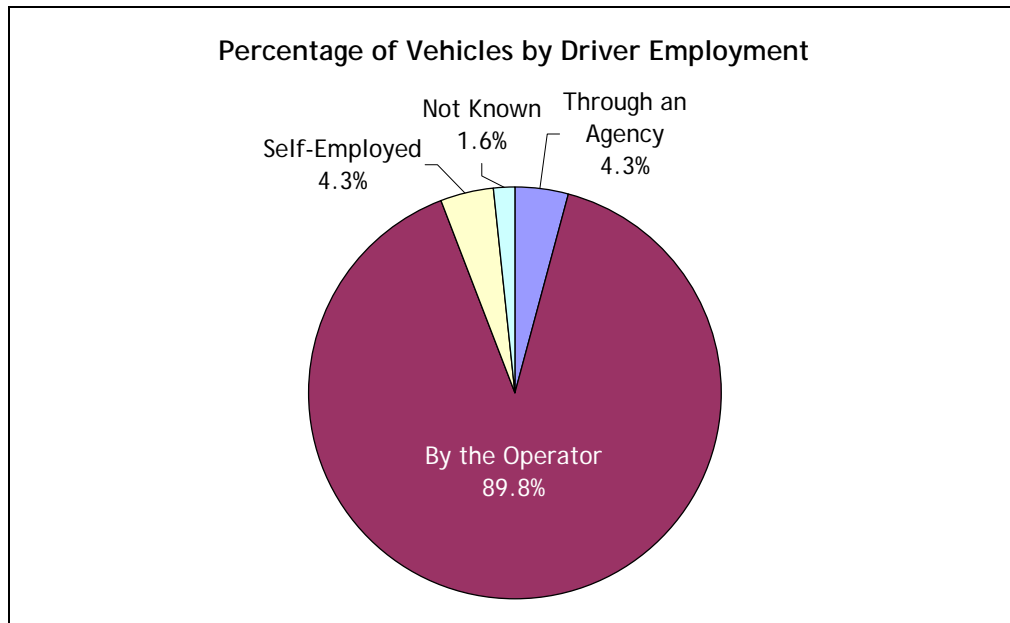
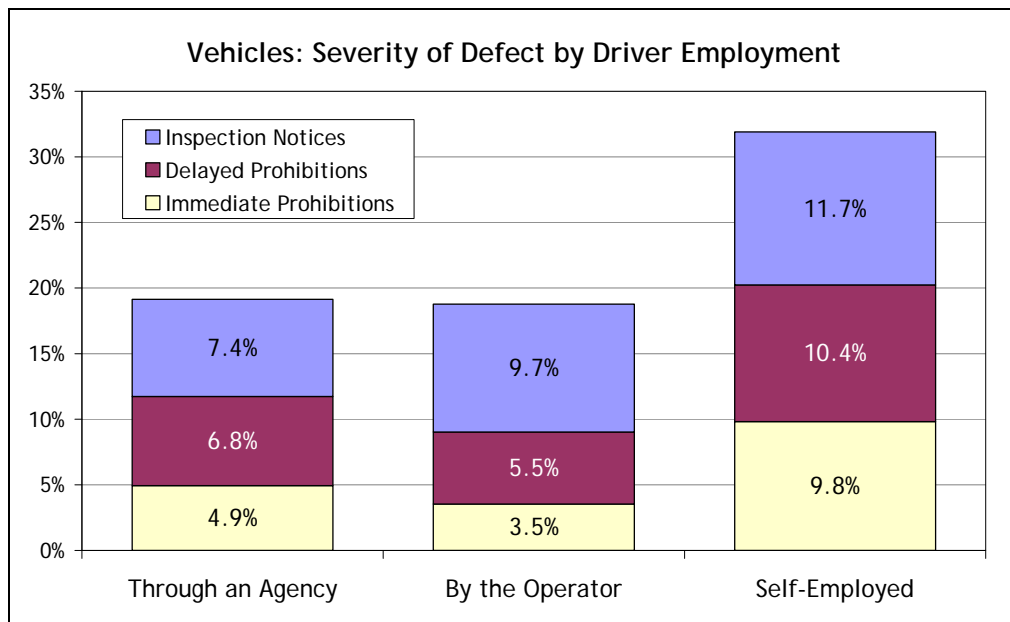


Figure 29



3.12.2. Significance tests applied to the rates of prohibitions by driver employment revealed that, for both immediate and total prohibitions, vehicles driven by those employed by an operator received a significantly lower proportion of prohibitions, and those driven by a self-employed driver received a significantly higher proportion of prohibitions.

- 3.12.3. Significance tests applied to the rate of inspection notices by driver employment revealed no significant differences between the different employment groups.

3.13. Carriers of Hazardous Chemicals

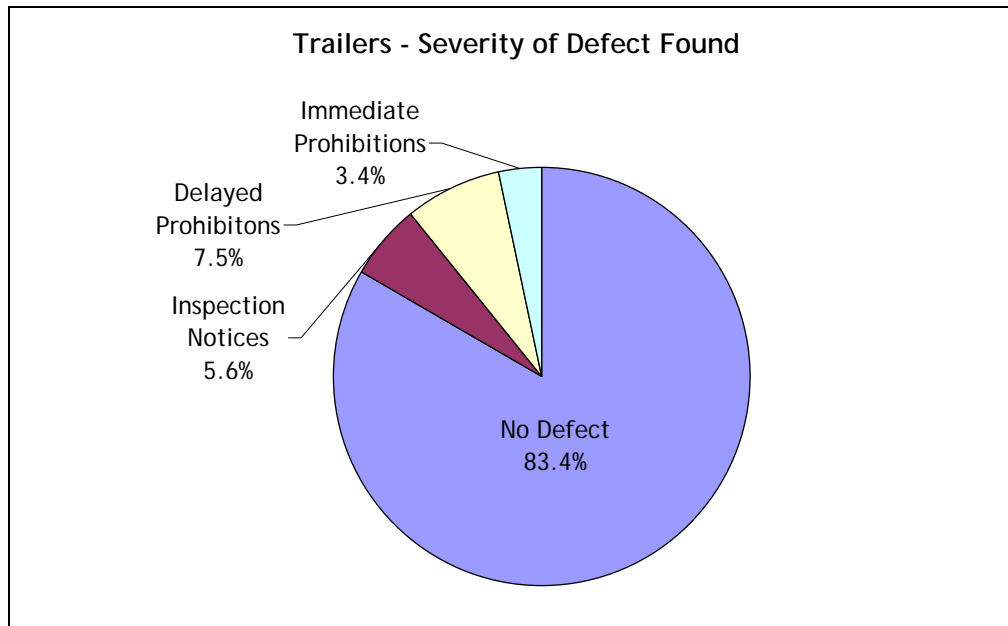
- 3.13.1. A majority of the vehicles checked were not carrying hazardous chemicals (98.1%). This compares to only 1.9% of the vehicles that were checked and listed as carrying hazardous chemicals. No information regarding hazardous chemicals was recorded for 0.3% (equating to 12 HGVs) of those tested.
- 3.13.2. Of the 3761 vehicles on which information was recorded, no significant differences in either the number of total prohibitions or the number of inspection notices issued to vehicles were found between those carrying and those not carrying hazardous chemicals.
- 3.13.3. Although a test of significance was applied to the numbers of immediate prohibitions issued to HGVs by whether or not they were carrying hazardous chemicals, the results were inconclusive due to small sample sizes.

4. Trailers

4.1. Main Results

- 4.1.1. Of the 3773 vehicles checked, 1701 (45.1%) had trailers. 3.4% of trailers were issued with immediate prohibitions and 7.5% with delayed prohibitions⁹. In total, 10.9% of the trailers checked were found to have prohibitable defects. 96 trailers (5.6%) had a roadworthiness defect that warranted an inspection notice but no prohibition. 83.4% of all trailers checked were free from roadworthiness defects.

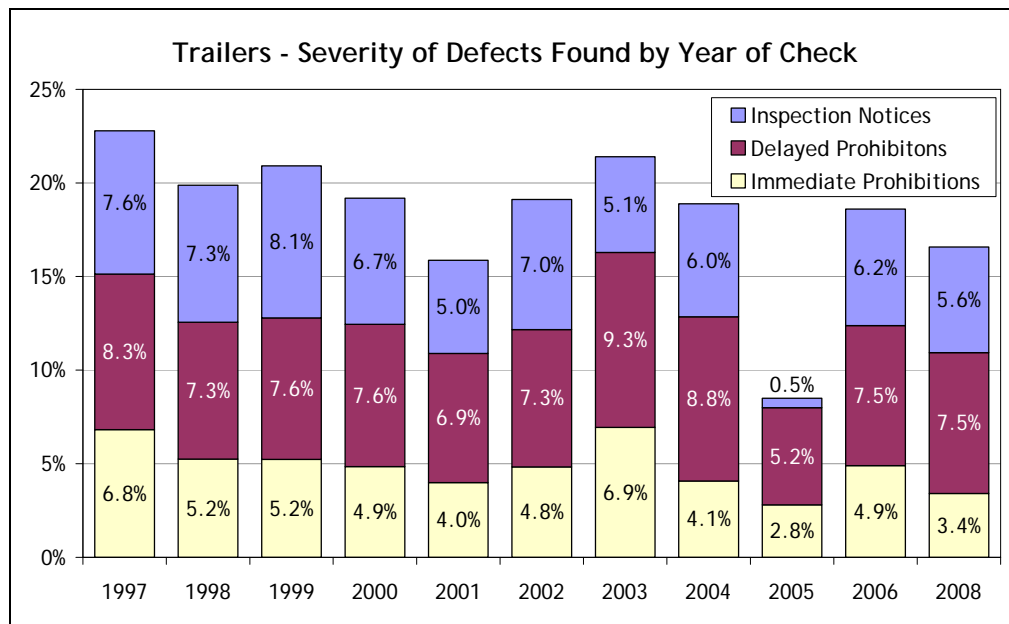
Figure 30



- 4.1.2. Annex D contains a full list of the categories of prohibitable defects found on trailers. The category with the most immediate prohibitions was Brake Systems & Components (24.1% of all immediate prohibitions), followed by Lamps (13.8%) and Direction Indicators and Hazard Warning Lamps (11.5%).
- 4.1.3. The defect category with the most delayed prohibitions was Brake Systems & Components (42.9% of all delayed prohibitions), followed by Condition of Tyres (18.6%), and Service Brake Operation (15.7%).
- 4.1.4. For total prohibitions (immediate and delayed), the category with the most defects was Brake Systems & Components (35.7% of total prohibitions), followed by Condition of Tyres (14.1%) and Service Brake Operation (14.1%).

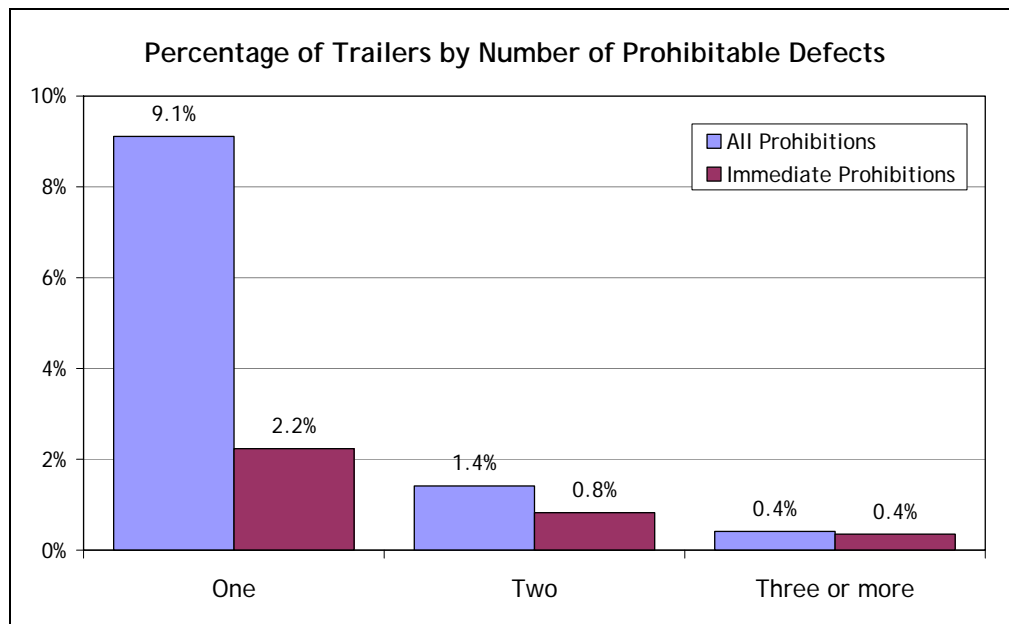
⁹ A trailer with both immediate and delayed prohibition defects is issued an immediate prohibition.

Figure 31



- 4.1.5. A significantly higher proportion of total prohibitions were issued to trailers in 1997 and 2003, and a significantly lower proportion of total prohibitions were issued in 2005 and 2008. Although the proportion of total prohibitions issued to trailers in 2001 is equal to that issued in 2008, due to the differing number of checks carried out in each of these years, the proportion in 2001 is not significant (see 2.2.6 for further details).
- 4.1.6. Likewise, there was a significantly higher proportion of immediate prohibitions issued to trailers in 1997 and 2003, and a significantly lower proportion of immediate prohibitions issued to trailers in 2005 and 2008.
- 4.1.7. There was no significant difference in the proportion of delayed prohibitions issued to trailers in 2008 when compared to other years, although significantly higher proportions were issued in 2003 and 2004, and a significantly lower proportion issued in 2005.
- 4.1.8. The proportion of inspection notices issued to trailers was significantly higher in 1997, 1998 and 1999 than in other years, and significantly lower in 2005 than in other years.

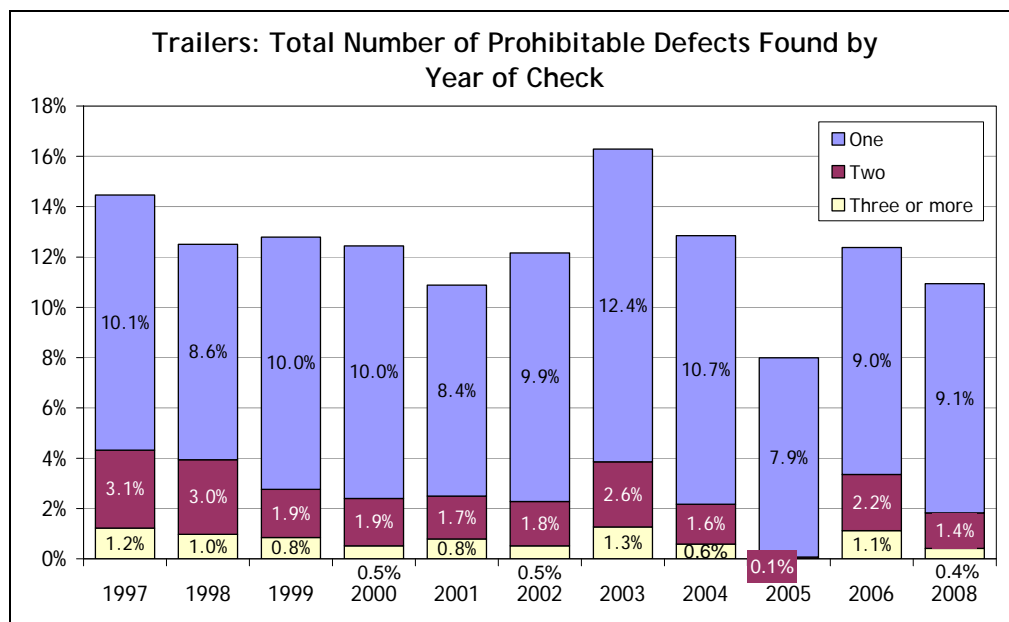
Figure 32



4.1.9. 9.1% of trailers checked had one prohibitable defect; 1.4% had two prohibitable defects; and 0.4% had three or more prohibitable defects.

4.1.10. 2.2% of the trailers checked had one immediately prohibitable defect; 0.8% had two immediately prohibitable defects; and 0.4% had three or more immediately prohibitable defects.

Figure 33



4.1.11. The proportion of trailers with one prohibitable defect was significantly higher in 2003 than in other years, and significantly lower in 2005 than in other years. There was no significant difference between the proportion of trailers with one prohibitable defect in 2008 compared to previous years.

4.1.12. The proportion of trailers with two prohibitable defects was significantly higher in 1997, 1998 and 2003 than in other years, and significantly lower in

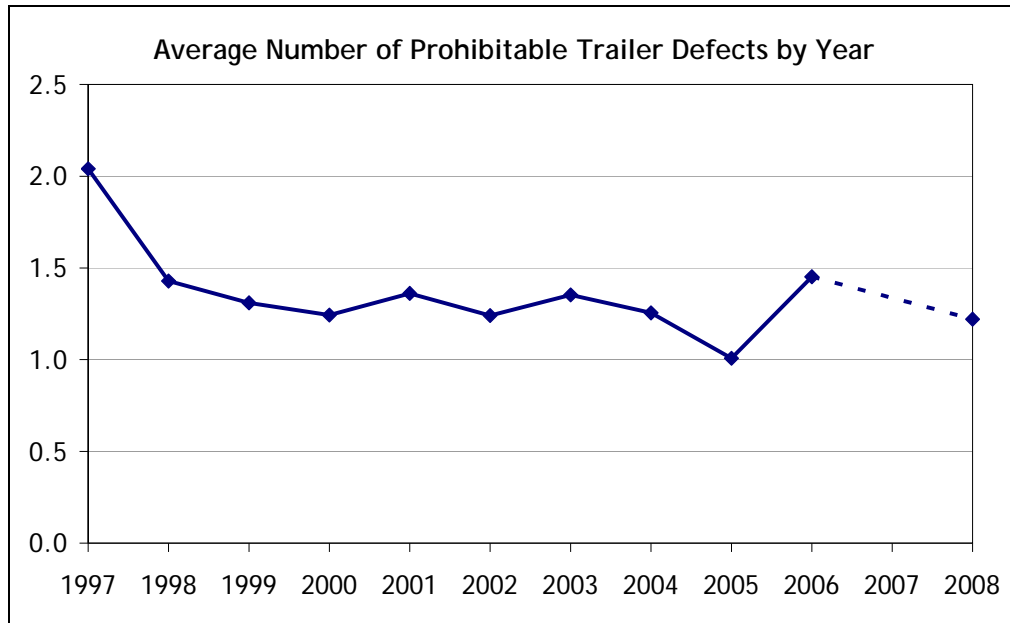
2005 than in other years. There was no significant difference between the proportion of trailers with two prohibitable defects in 2008 compared to previous years.

- 4.1.13. The proportion of trailers with three or more prohibitable defects was significantly higher in 1997 and 2003 than in other years, and significantly lower in 2005 than in other years. There was no significant difference between the proportion of trailers with three or more prohibitable defects in 2008 compared to previous years.
- 4.1.14. Although correlation analysis was performed on the data for number of one, two, and three or more prohibitable defects by year, no statistically significant differences were found.
- 4.1.15. The table below gives the count of different number of trailer defects found by year of the check. The highest number of trailer defects found on a single trailer was 20, during the 1997 check. In 2008, the highest number of defects found on a single trailer was 4.

Table 2

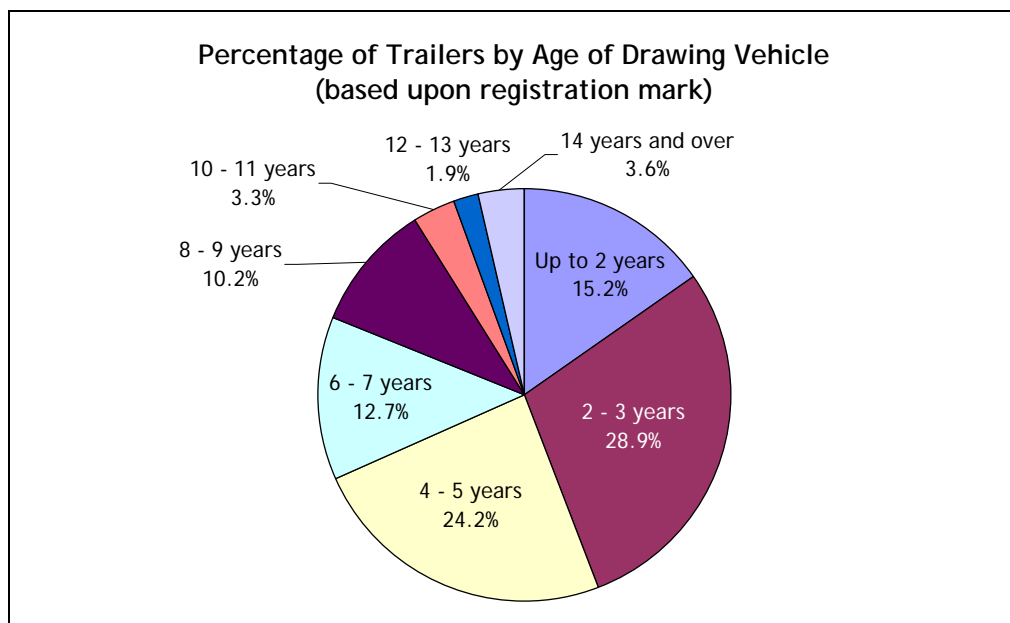
| Year | Number of Defects Found | | | | | | | | | | | | Total |
|-------------|-------------------------|----|----|----|---|---|---|---|---|----|----|----|------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 13 | 20 | |
| 1997 | 128 | 92 | 22 | 23 | 3 | 2 | 1 | 2 | 0 | 1 | 1 | 1 | 275 |
| 1998 | 124 | 46 | 8 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 182 |
| 1999 | 142 | 27 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 181 |
| 2000 | 176 | 33 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 2001 | 128 | 26 | 6 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| 2002 | 135 | 24 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| 2003 | 197 | 41 | 13 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 258 |
| 2004 | 202 | 30 | 8 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 243 |
| 2005 | 127 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 |
| 2006 | 129 | 32 | 10 | 3 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 177 |
| 2008 | 155 | 24 | 4 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186 |

- 4.1.16. The graph below shows the average number of trailer defects (where a defect was detected) by year of the HGV FCC check. The highest average number of trailer defects was in 1997 (2.04) and the lowest was in 2005 (1.01). No statistically significant trend was evident in the sequence of averages for the past eleven surveys.

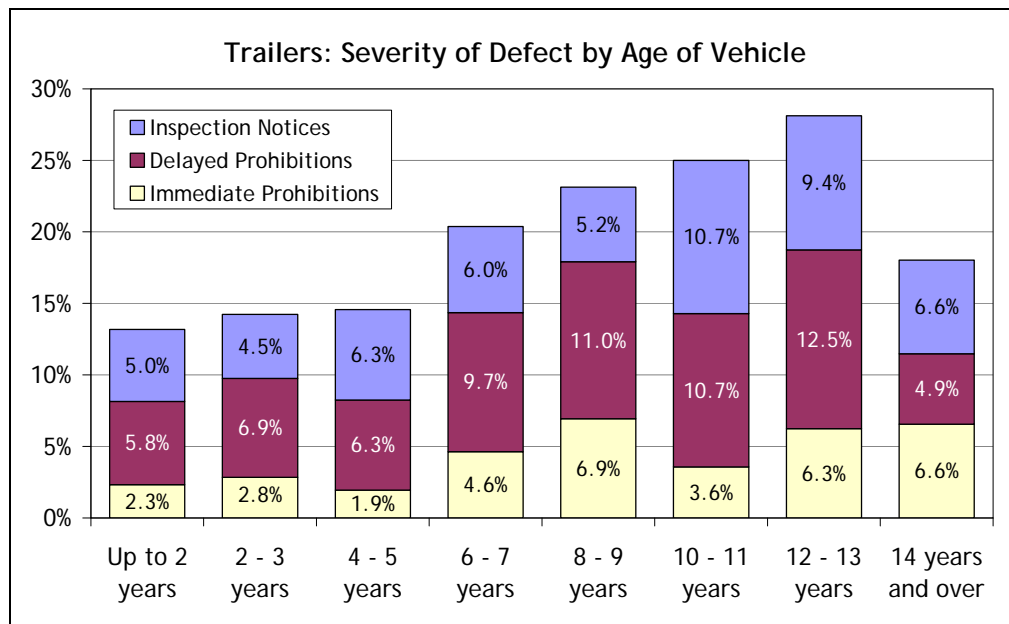
Figure 34

4.2. Age of Drawing Vehicle

- 4.2.1. It was not possible to determine the age of the trailers from the information collected during the checks. The age of the drawing vehicle is therefore used as an indicator.

Figure 35

- 4.2.2. The highest proportion of trailers (28.9%) were drawn by vehicles aged between two and three years old. Only 3.6% were drawn by vehicles aged 14 years and over.

Figure 36

- 4.2.3. Trailers drawn by vehicles aged between four and five years received significantly fewer prohibitions than trailers drawn by vehicles of other ages. Trailers drawn by vehicles aged between eight and nine years received significantly more prohibitions than trailers drawn by other vehicles. Although the percentages for trailers drawn by vehicles aged 12 - 13 years appear high, the small sample size they represent mean that the results are not statistically conclusive.
- 4.2.4. Trailers drawn by vehicles aged between eight and nine years received significantly more immediate prohibitions than trailers drawn by vehicles of other ages. No conclusive results can be found for trailers drawn by vehicles aged ten years and over due to small sample sizes.
- 4.2.5. The correlation between the age of the drawing vehicle of the trailer and the proportion of trailers given an immediate prohibition was 0.785, suggesting that the proportion of trailers receiving immediate prohibitions increases with increased age of the vehicle drawing the trailer.
- 4.2.6. A test of significance was applied to the rate of inspection notices given to trailers against the age of the drawing vehicle but no significant results were found. However, the results were inconclusive for trailers drawn by vehicles aged ten years and over due to small sample sizes.

4.3. Maximum Permissible Train Weight

- 4.3.1. The largest proportion of trailers (71.1%) were part of a combination with a maximum train weight of 44 tonnes. Less than 1% of trailers (0.5%) were included in a combination with a maximum train weight of 3.5 - 9.9 tonnes.

Figure 37

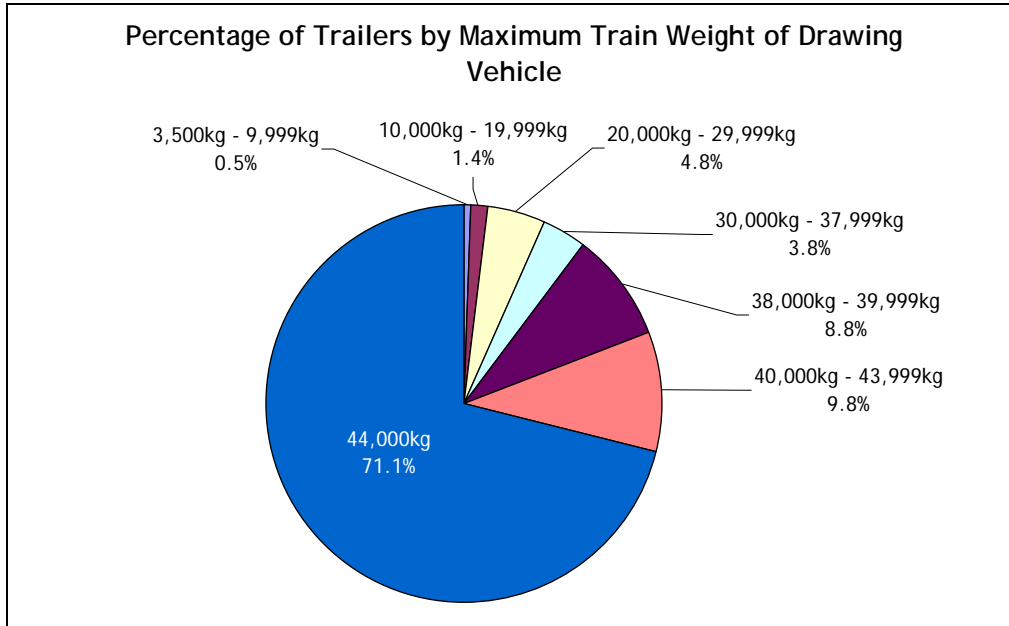
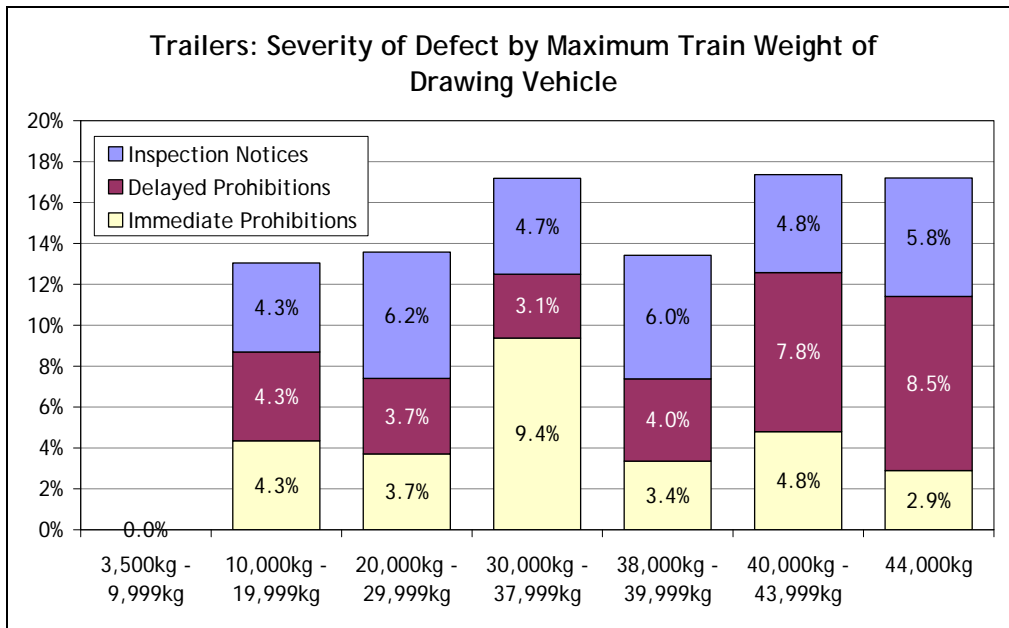


Figure 38



4.3.2. A test of significance was applied to the rate of total prohibitions given to trailers against the maximum train weight of the vehicle but no significant results were found. However, the results were inconclusive for trailers where the maximum train weight of the vehicle was under 20 tonnes, due to small sample sizes.

4.3.3. A test of significance was applied to the rate of immediate prohibitions given to trailers against the maximum train weight of the vehicle but no significant results were found. However, the results were inconclusive for trailers where the maximum train weight of the vehicle was under 38 tonnes, due to small sample sizes.

- 4.3.4. A test of significance was applied to the rate of inspection notices given to trailers against the maximum train weight of the vehicle but no significant results were found. However, the results were inconclusive for trailers where the maximum train weight of the vehicle was under 38 tonnes, due to small sample sizes.
- 4.3.5. A positive relationship was found between maximum train weight and the total number of prohibitions given (0.737). This finding suggests that as the maximum weight increases, the total number of prohibitions also increases. The correlation between the maximum train weight and the proportion of immediate prohibitions given was considerably lower (0.253).
- 4.3.6. The correlation between the maximum train weight and the proportion of inspection notices given to trailers was positive (0.657), which suggests that as the maximum weight increases, the number of inspection notices issued increases.

4.4. Traffic Area Where Trailer was Checked

- 4.4.1. More trailers (18.3%) were checked in the Eastern Traffic Area than any other Traffic Area. Only 2.6% of trailers were checked in the Welsh Traffic Area.

Figure 39

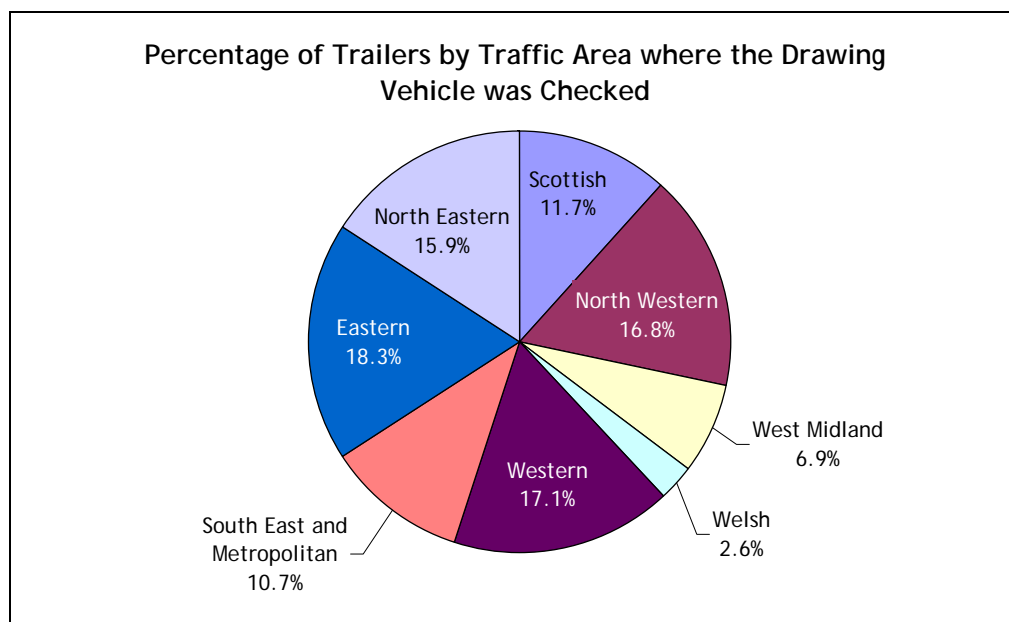
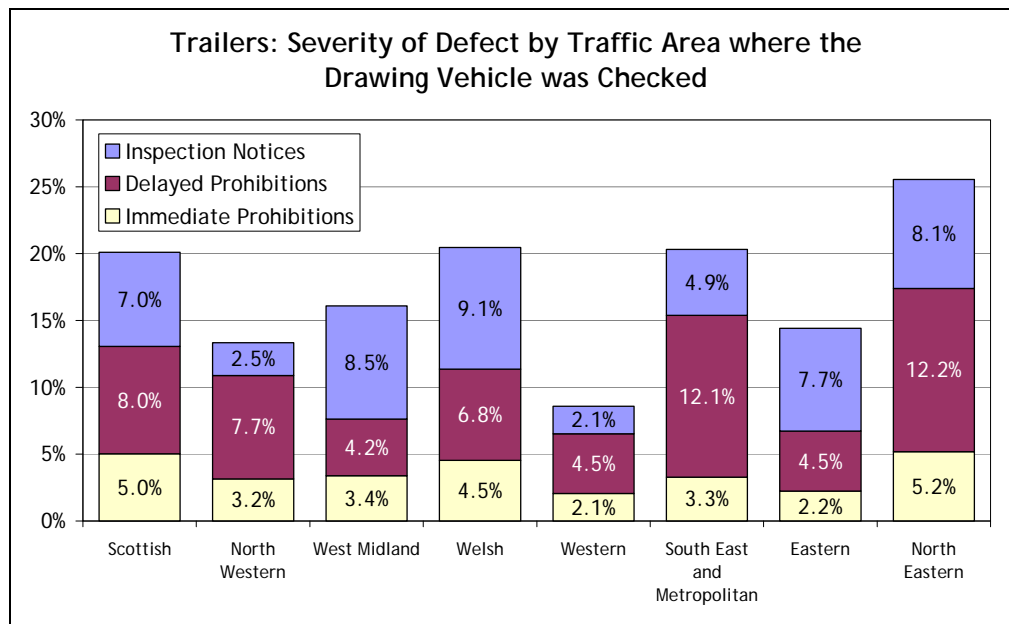


Figure 40

- 4.4.2. Significantly fewer prohibitions were issued to trailers checked in the Western and Eastern Traffic Areas than to trailers checked in other Areas, and significantly more were issued to trailers checked in the South East and Metropolitan and North Eastern Traffic Areas. Results were inconclusive for trailers checked in the Welsh Traffic Area, due to small sample sizes.
- 4.4.3. No significant differences were found in the proportions of immediate prohibitions issued to trailers by the area in which they were checked, although results were inconclusive for trailers checked in the Welsh and West Midland Traffic Areas, due to small sample sizes.
- 4.4.4. Significantly fewer inspection notices were issued to trailers checked in the North Western and Western Traffic Areas than to trailers checked in other Traffic Areas. Again, due to small sample sizes, results were inconclusive for trailers checked from the Welsh Traffic Area.

4.5. Traffic Area Where Operator of Vehicle was Licensed¹⁰

- 4.5.1. Nearly one fifth of all trailers checked were drawn by vehicles licensed in the Eastern Traffic Area (19.5%). The smallest proportion of trailers checked were drawn by vehicles licensed in the Welsh Traffic Area (6.1%).

¹⁰ Whilst analysing trailers based on licensing area IHAC have used the licensing traffic area of the drawing vehicle

Figure 41

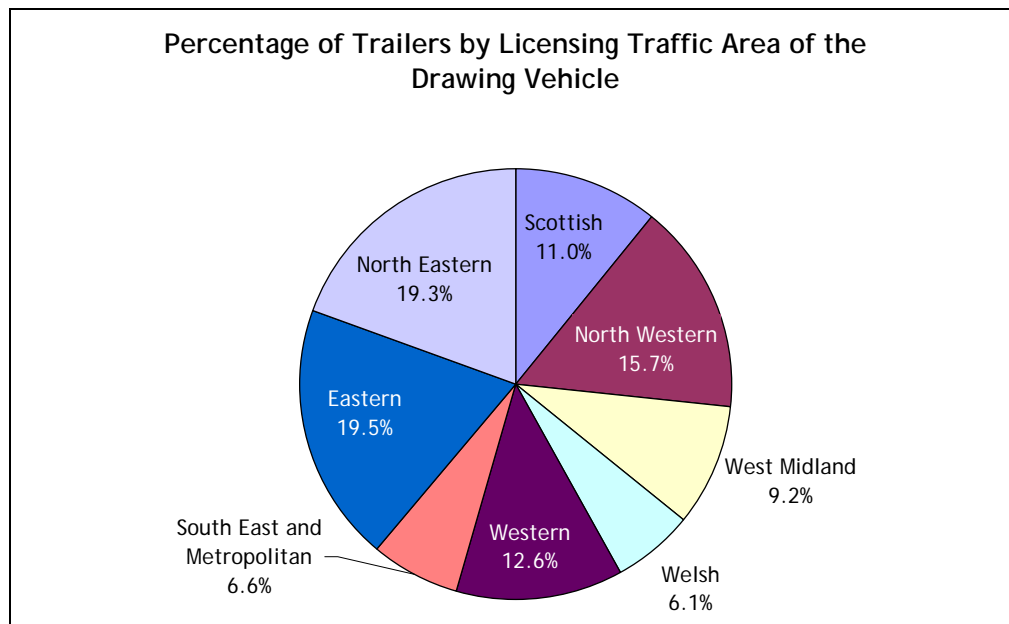
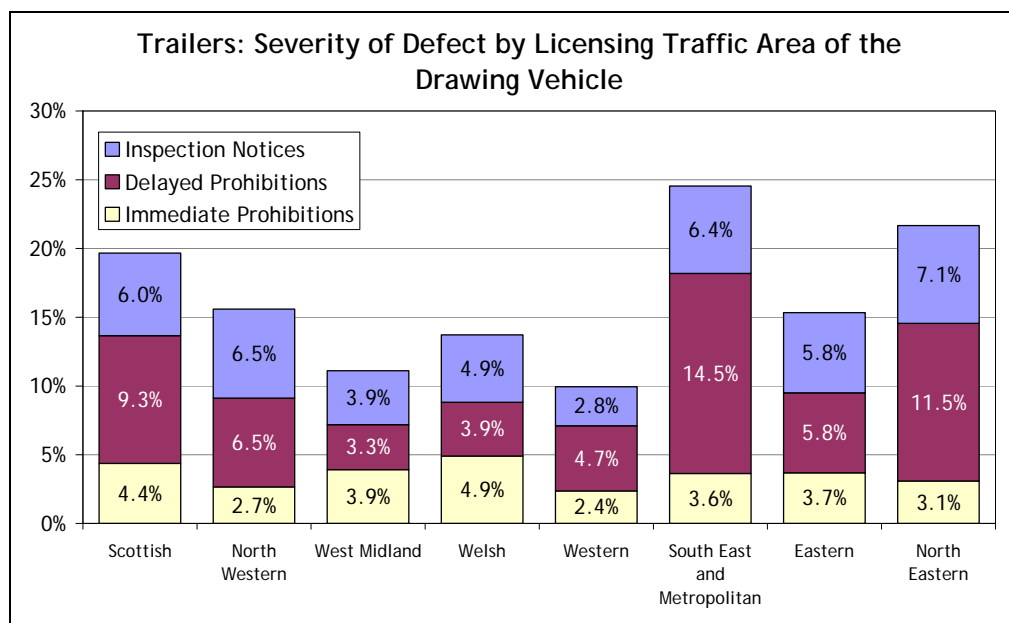


Figure 42



- 4.5.2. A test of significance found that significantly more total prohibitions were issued to trailers where the drawing vehicle was licensed in the South East and Metropolitan and North Eastern Traffic Areas than those where the drawing vehicle was licensed in other Traffic Areas.
- 4.5.3. No significant differences in the proportions of immediate prohibitions were found by the Traffic Area in which the drawing vehicle was licensed. Results were inconclusive for trailers where the drawing vehicle was licensed in the Welsh and South East and Metropolitan Traffic Areas.
- 4.5.4. No significant differences in the proportions of inspection notices were found by the Traffic Area in which the drawing vehicle was licensed.

4.6. Road Type of Check

4.6.1. More trailers (47.7%) were checked whilst travelling on motorways than on any other road type. Only 1.4% of trailers (equating to 23 trailers) were checked whilst travelling on rural minor roads.

Figure 43

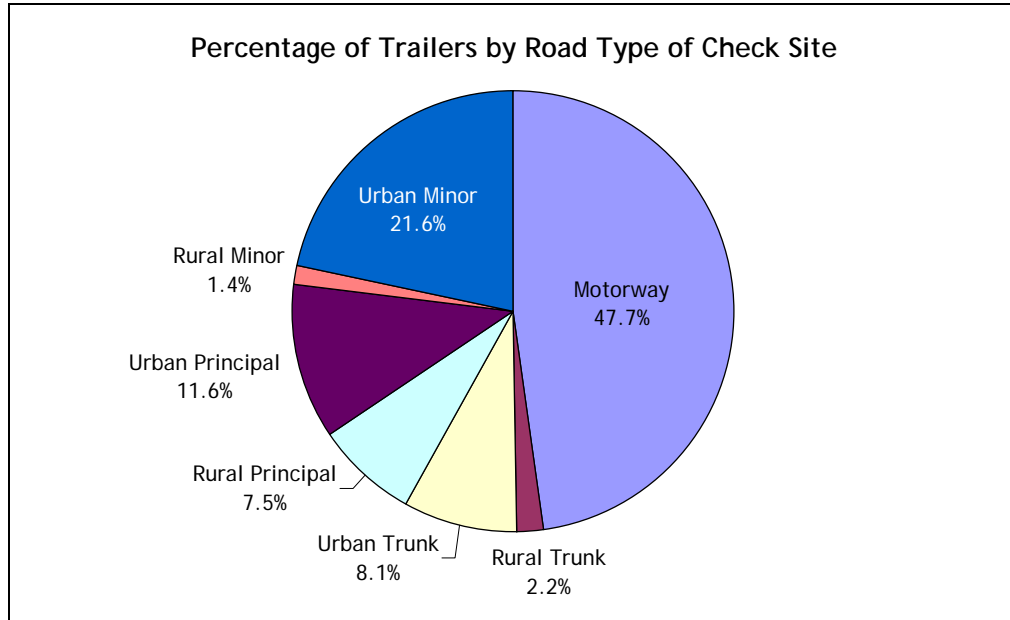
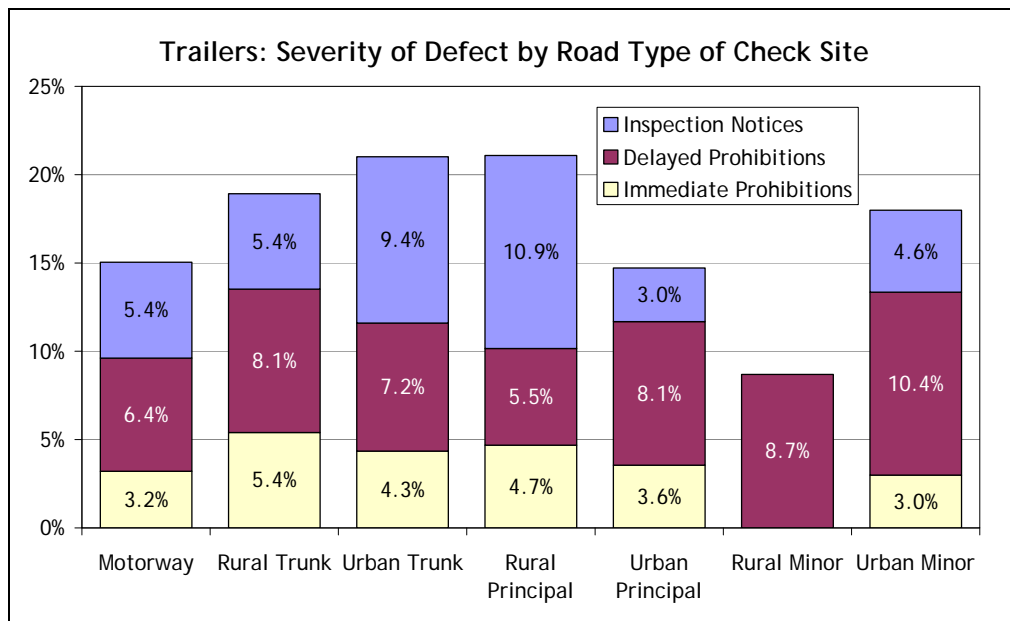


Figure 44



4.6.2. A test of significance was applied to the rate of prohibitions given to trailers against the road type on which the trailer was checked but no significant results were found. The sample sizes for those checked whilst travelling on rural trunk and rural minor roads were too small for results to be conclusive.

4.6.3. Likewise, no significant differences were found in the proportion of immediate prohibitions given to trailers by the road type on which they were travelling at the time of their check. Due to small sample sizes, results for

trailers checked whilst travelling on rural trunk, urban trunk, rural principal or rural minor roads were inconclusive.

- 4.6.4. Trailers checked whilst travelling on urban trunk or rural principal roads received significantly more inspection notices than those travelling on other road types. Due to small sample sizes, results for rural trunk and rural minor roads were inconclusive.

4.7. Time of Check

- 4.7.1. The majority of checks on trailers (46.8%) were carried out in the morning, i.e. between 06:00 and 14:00. Only 14.1% were carried out during the night, i.e. between 22:00 and 06:00.

Figure 45

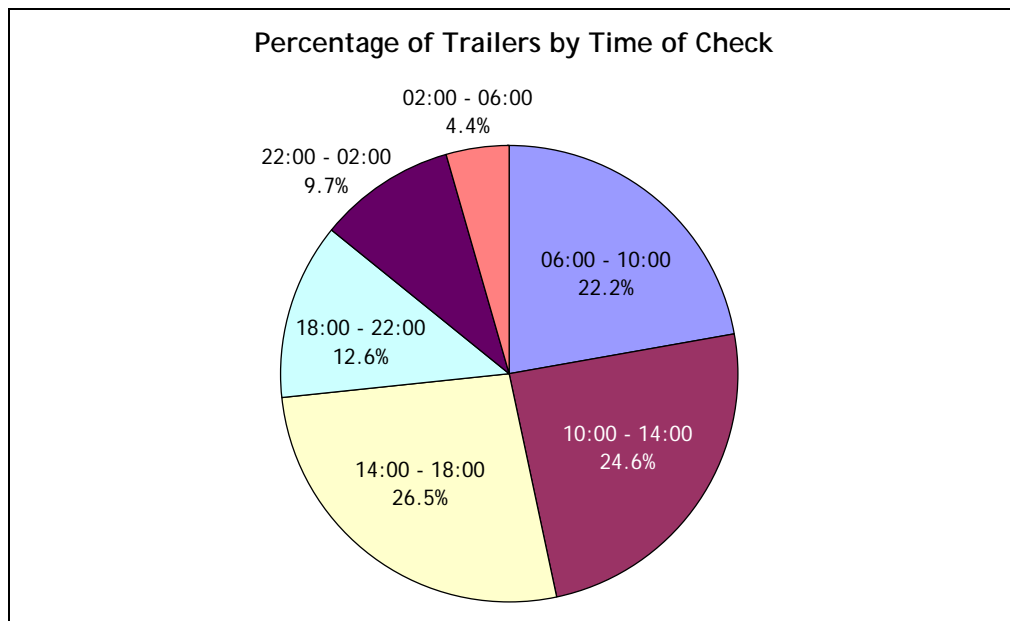
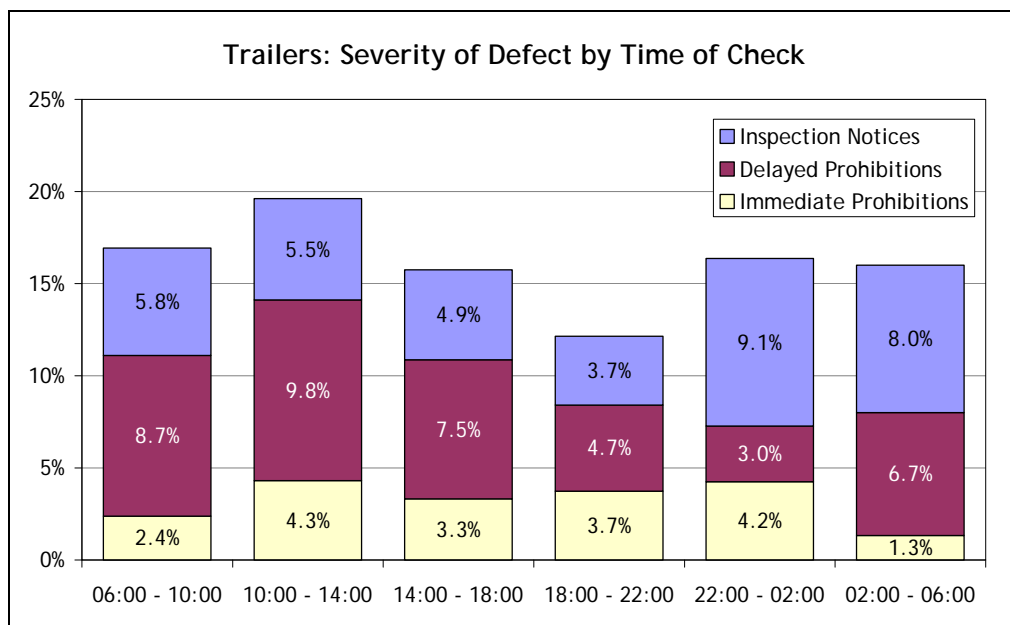


Figure 46



- 4.7.2. The proportion of total prohibitions issued between 10:00 and 14:00 was significantly higher than during other time periods of the day.
- 4.7.3. There were no statistically significant differences between the proportion of immediate prohibitions issued and time of day the trailers were checked. No conclusive results can be found for trailers checked between 02:00 and 06:00 due to small sample sizes.
- 4.7.4. Trailers checked between 22:00 and 02:00 were received significantly more inspection notices than those checked at other times of the day. Due to small sample sizes, no conclusive result could be determined for trailers checked between 02:00 and 06:00.

4.8. Day of Check

- 4.8.1. More trailers were checked on Thursday (18.9%) than any other day of the week. The smallest proportion of trailers checked were checked on a Saturday (7.0%).

Figure 47

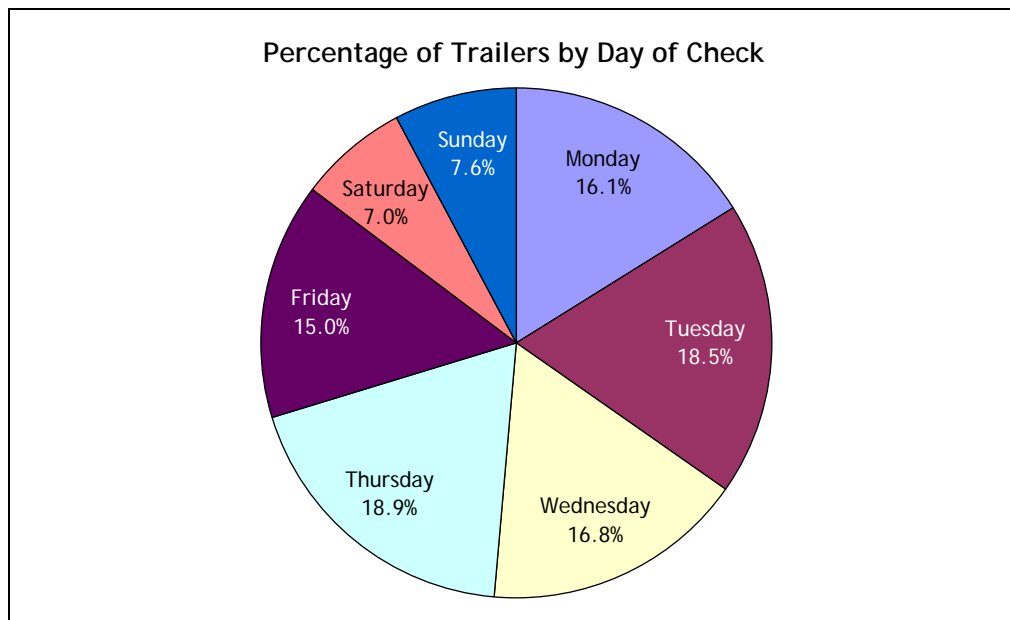
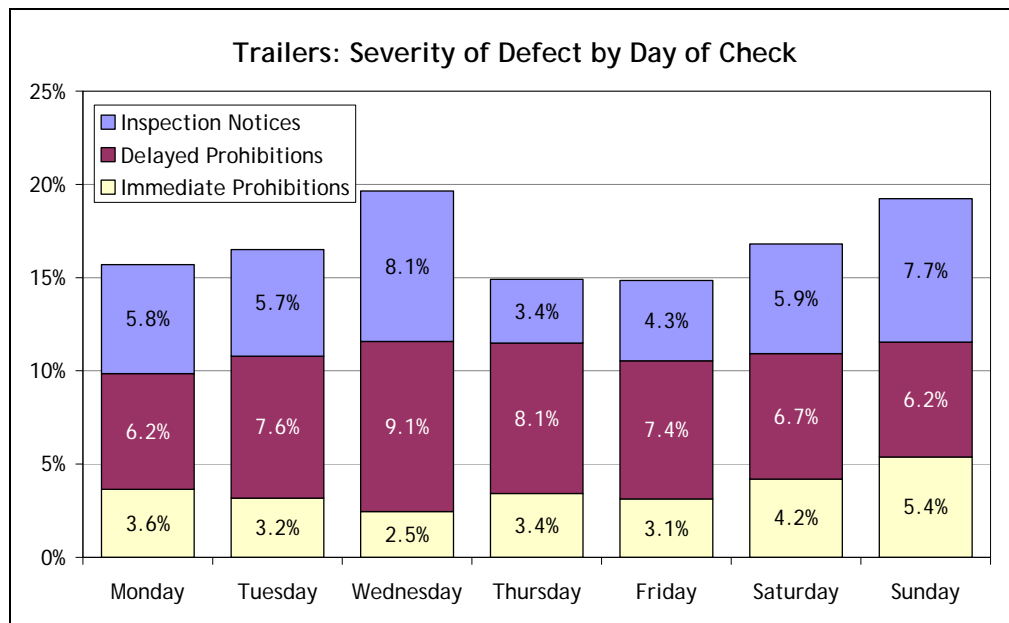


Figure 48

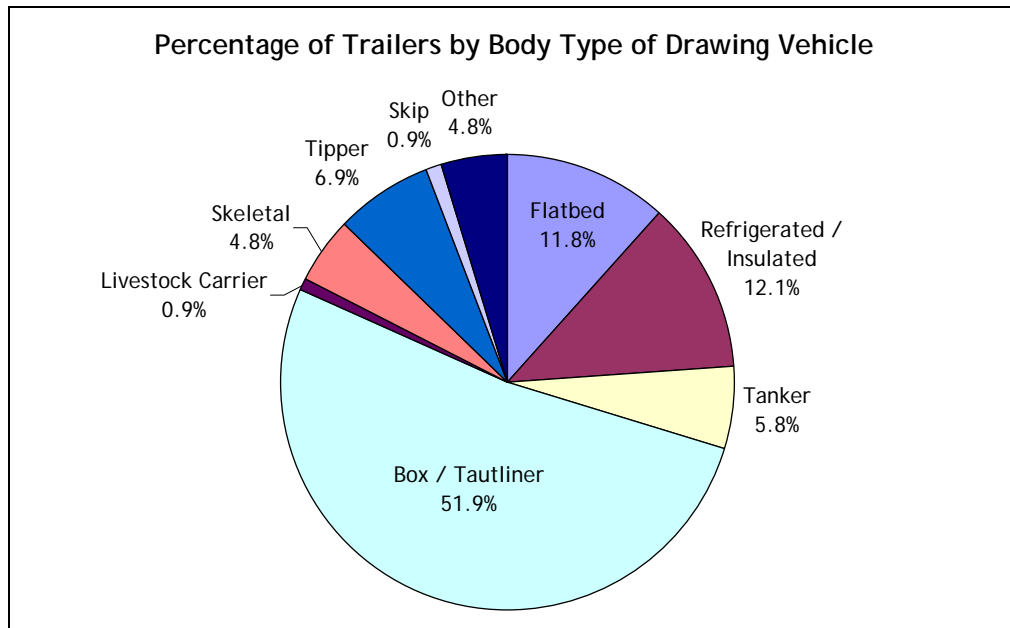
4.8.2. There were no statistically significant differences between the proportion of total or immediate prohibitions issued and the day of the week trailers were checked. However, results for the rate of immediate prohibitions were inconclusive for trailers checked on Saturdays and Sundays due to small sample sizes.

4.8.3. Likewise, there were no statistically significant differences between the proportion of inspection notices issued and the day of the week that trailers were checked.

4.9. Body Type of Towing Vehicle

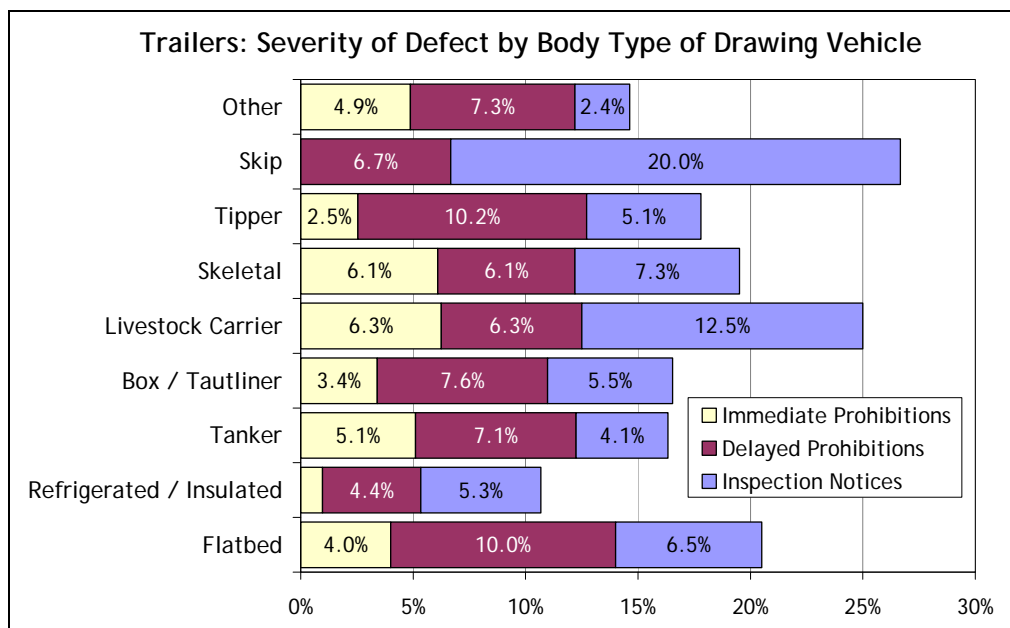
4.9.1. For some of the body type categories, very few vehicles had a trailer. This means that results for these categories, e.g. Skips and Livestock Carriers, are based on very small samples and, therefore, in many cases no conclusive results could be determined.

Figure 49



4.9.2. The majority of checks on trailers (51.9%) were carried out on those being pulled by a Box/Tautliner vehicle. The smallest sample sizes were those where a trailer was being drawn by a Skip (0.9%) or Livestock Carrier (0.9%).

Figure 50



4.9.3. Significantly fewer prohibitions were issued to trailers pulled by Refrigerated/Insulated vehicles than any other body type. Results were inconclusive for Livestock Carriers and Skips due to small sample sizes.

4.9.4. Similarly, significantly fewer immediate prohibitions were issued to trailers pulled by Refrigerated/Insulated vehicles than any other body type. Results were inconclusive for Livestock Carriers and Skips due to small sample sizes.

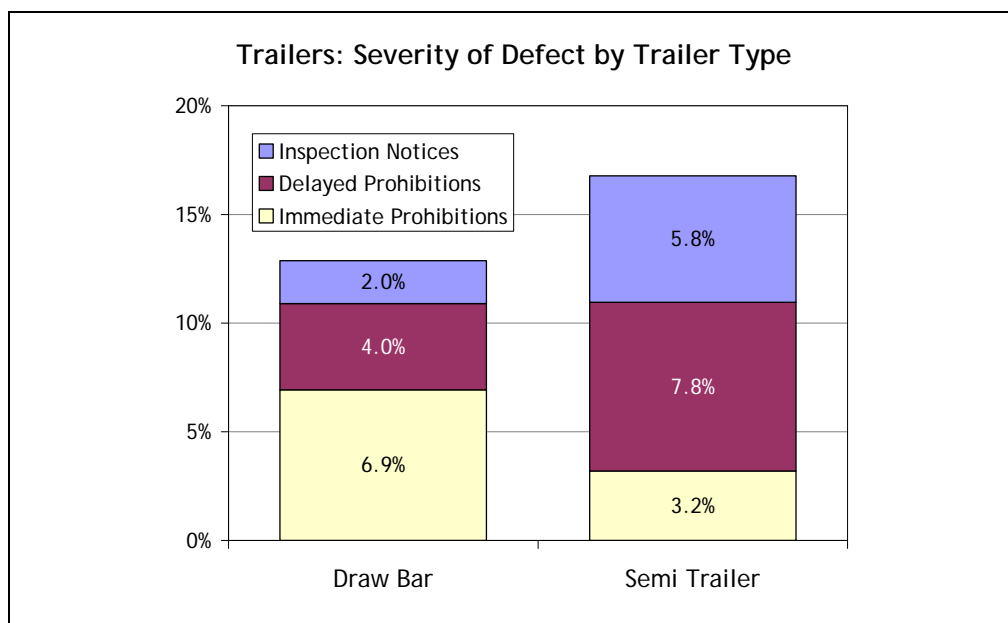
were inconclusive for trailers of Tankers, Livestock Carriers, Skeletal vehicles, Tippers, Skips and Other vehicles due to small sample sizes.

- 4.9.5. Although a test of significance was carried out between the rate of trailer inspection notices given to trailers and the body type of the trailer, no significant differences were found. However, results were inconclusive for trailers of Livestock Carriers, Skeletal vehicles, Skips and Other vehicles, due to small sample sizes.

4.10. Trailer Type

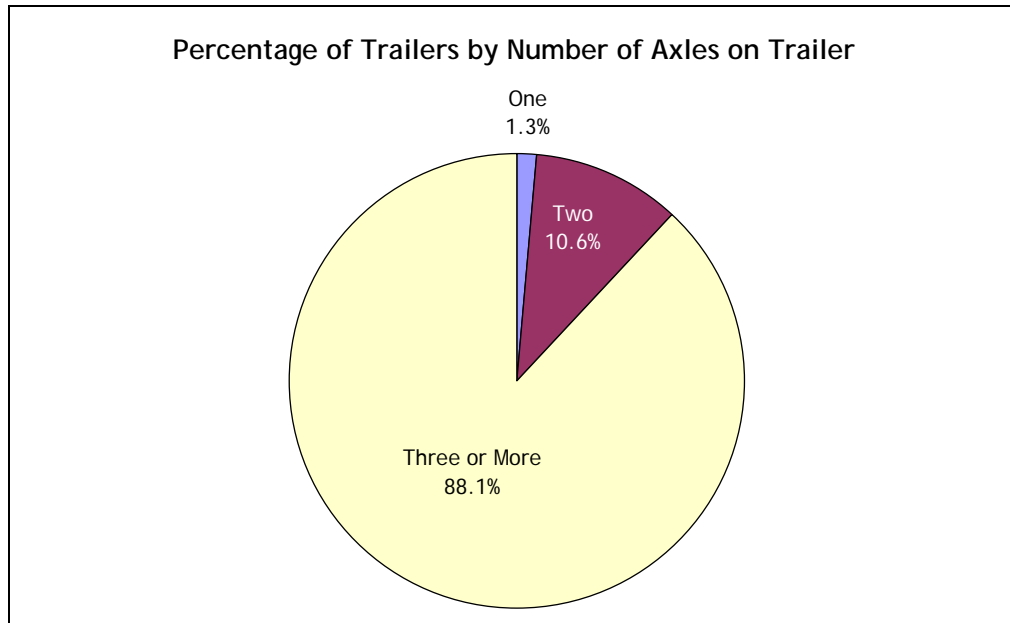
- 4.10.1. The vast majority of trailers were semi trailers (94.1%). The remainder were draw bar trailers (5.9%).
- 4.10.2. No significant difference was found in the proportion of either total prohibitions or inspection notices issued to draw bar and semi trailers.
- 4.10.3. There was insufficient data to determine whether there were any significant differences between the rates of immediate prohibitions issued to semi trailers and draw bar trailers.

Figure 51

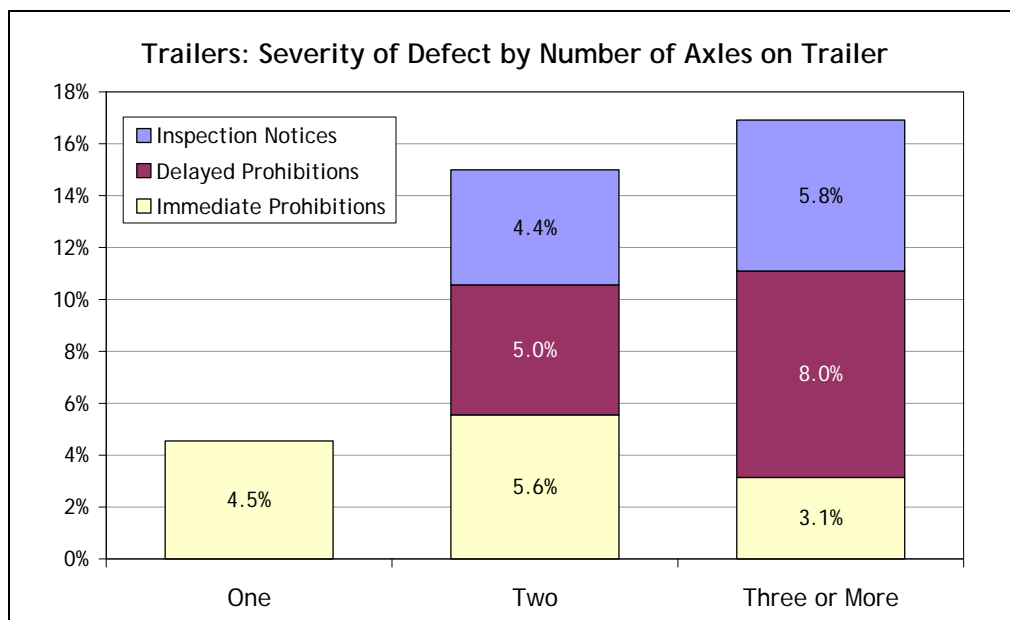


4.11. Number of Axles on Trailer

- 4.11.1. This section considers the number of axles on the trailer only. It does not include the number of axles on the tractor unit or rigid vehicle.
- 4.11.2. The majority of trailers (88.1%) had three or more axles. Substantially fewer trailers (10.6%) had two axles. Only 1.4% of trailers had one axle.

Figure 52

- 4.11.3. Although a test of significance was carried out between the number of total prohibitions given to trailers and the number of axles on the trailer, no significant differences in the results were found. The result for trailers with one axle was inconclusive due to a small sample size.
- 4.11.4. Likewise, no significant difference was found in the proportion of immediate prohibitions or inspection notices issued to trailers with different numbers of axles. No conclusive result could be determined for the trailers with one axle, due to a small sample size.

Figure 53

4.12. Driver Employment

4.12.1. The majority of trailers checked (89.4%) were drawn by a vehicle driven by a driver employed by the operator. In addition, 5.2% of drivers were employed through an agency and a further 3.9% of drivers were self-employed. This information was not recorded in 1.5% of checks.

Figure 54

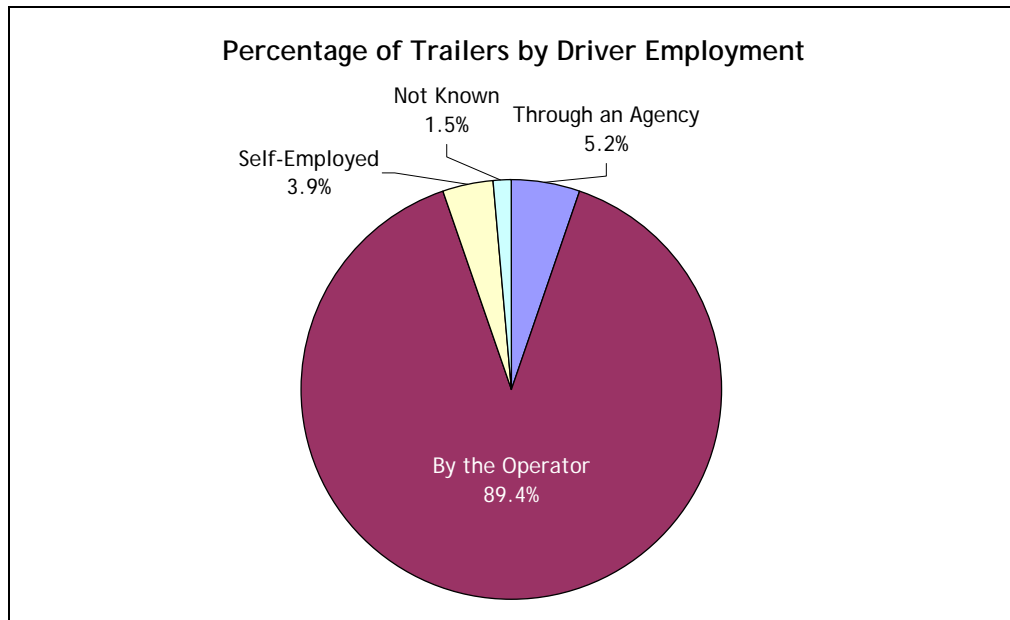
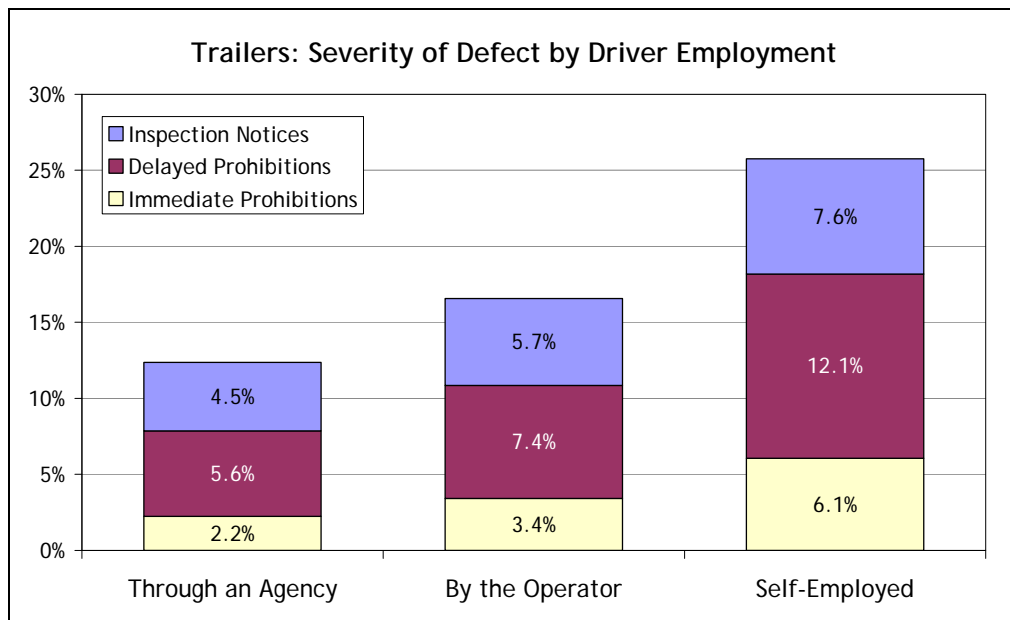


Figure 55



4.12.2. Significance tests applied to the rates of total prohibitions by driver employment revealed no significant differences between the employment types.

4.12.3. The proportion of immediate prohibitions issued to trailers with drivers who were employed by the operator was not significantly different to the proportion issued to those with drivers employed in other groups. However,

there was insufficient data to determine whether there were any significant differences between the rates of immediate prohibitions for trailers with drivers who were either employed through an agency or were self-employed.

- 4.12.4. Significance tests applied to the rate of inspection notices by driver employment revealed no significant differences between different types of employment. Due to a small sample size, results for the proportion of inspection notices issued to trailers with drivers who were self-employed were inconclusive.

4.13. Carriers of Hazardous Chemicals

- 4.13.1. A majority of the vehicles checked that were drawing a trailer were not carrying hazardous chemicals (97.0%). 2.6% of the vehicles that were drawing a trailer were listed as carrying hazardous chemicals. No information regarding this hazardous chemicals was recorded for 0.4% (equating to 6 trailers) of those tested.
- 4.13.2. Significance tests applied to the proportions of prohibitions (total and immediate) and inspection notices issued to trailers being pulled by vehicles either carrying or not carrying hazardous chemicals produced no conclusive results due to small sample sizes.

5. Traffic Offences

5.1. Main Results

5.1.1. 3773 checks were carried out for traffic offences in the 2008 HGVC survey. The majority of vehicles checked (77.2%) were not found to be committing any traffic offence. 10.3% of vehicles checked received a verbal warning for a traffic offence, but no further action was taken. 10.9% of vehicles received an advisory letter, prohibition or ORN. Only 1.6% were reported for prosecution.

Figure 56

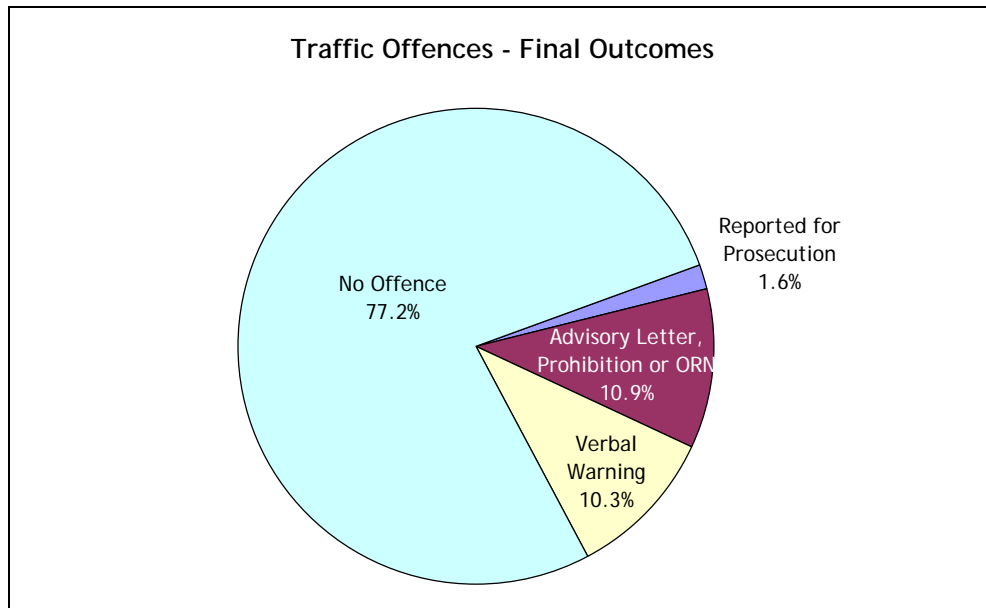
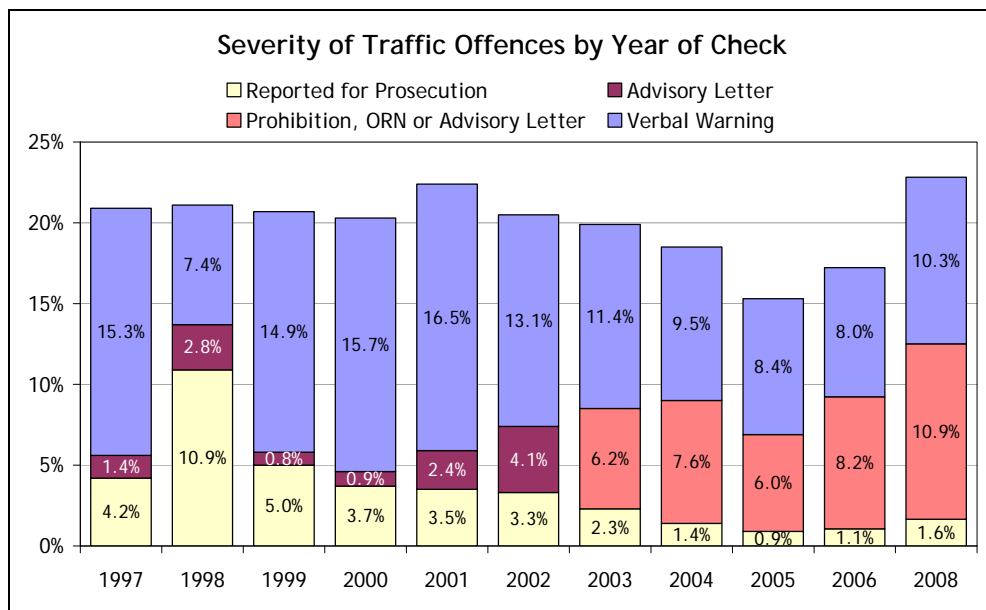


Figure 57



5.1.2. The proportion of traffic offences resulting in reports for prosecution was significantly higher in 1997, 1998, 1999 and 2000 than in other years, and

significantly lower in 2003, 2004, 2005, 2006 and 2008 than in other years. Furthermore, there is a statistically significant trend, showing a drop at an average rate of 0.55% ($\pm 0.39\%$ at the 95% confidence level) per annum in the proportion of vehicles reported for prosecution during the twelve year period the survey has been running.

- 5.1.3. The proportion of traffic offences resulting in the category advisory letter, prohibition, or ORN was significantly lower in 1997, 1998, 1999, 2000 and 2001 compared with other years, and significantly higher in 2003, 2004, 2005, 2006 and 2008 than in previous years. However, it should be noted that new traffic offence categories prohibitions and ORNs were introduced in 2003 and grouped under a single category with advisory letters. Therefore this apparent difference is not an equal comparison.
- 5.1.4. Taking the five years worth of data that we have for the years after the new traffic offence categories were introduced (2003 to 2006, and 2008), there were significantly more traffic offences resulting in advisory letters, prohibitions, or ORNs in 2008 and significantly fewer in 2003 and 2005 compared to other years. There was no significant difference between 2004 and 2006 and the other years.
- 5.1.5. The proportion of traffic offences resulting in verbal warnings was significantly higher in 1997, 1998, 1999, 2000, 2001 and 2002 compared with other years, and significantly lower in 2003, 2004, 2005, 2006 and 2008 than in other years.

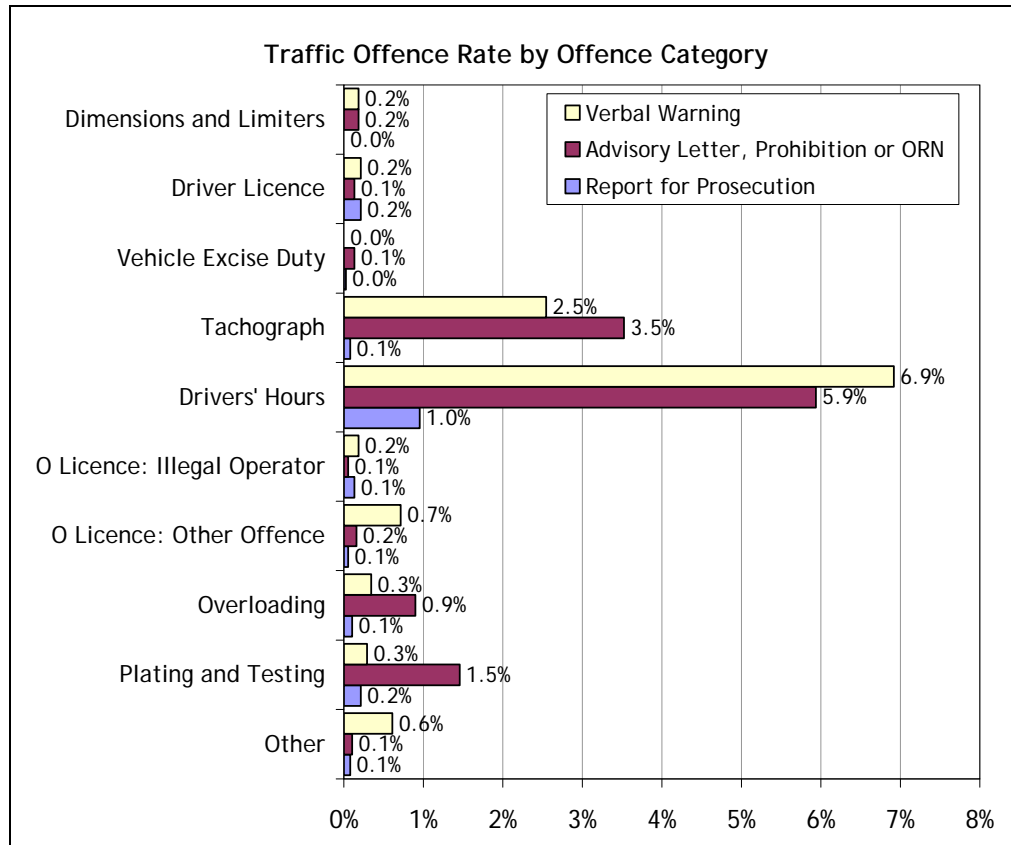
5.2. Breakdown by Type of Traffic Offence

- 5.2.1. Traffic Offences are recorded in the following categories:
 - Dimensions & Limiters;
 - Driver Licence;
 - Vehicle Excise Duty;
 - Tachograph;
 - Drivers' Hours;
 - Operator Licence - Illegal Operator;
 - Operator Licence - Other Offence;
 - Plating & Testing;
 - Overloading; and
 - Other.
- 5.2.2. Offences which are not considered serious enough to be reported for prosecution are normally dealt with by an advisory letter or verbal warning. It should be noted that in 2003 two new Traffic Offence categories, Prohibitions and ORNs (Offence Rectification Notices), were introduced. The 2008 HGV FCC was the fifth year that the Prohibition and ORN Traffic Offence categories were grouped with the Advisory Letter category.
- 5.2.3. The traffic offence most likely to result in a vehicle being reported for prosecution was that with regards to Drivers' Hours (1.0% of all HGVs checked in the survey were reported for prosecution for this traffic offence). Traffic offences related to Driver Licences and Plating & Testing each resulted in 0.2% of all vehicles checked being reported for prosecution.
- 5.2.4. An advisory letter, prohibition, or ORN was most likely to be issued for a traffic offence relating to Drivers' Hours and Tachographs, with 5.9% and

3.5% of all checks resulting in an advisory letter, prohibition, or ORN being issued, respectively.

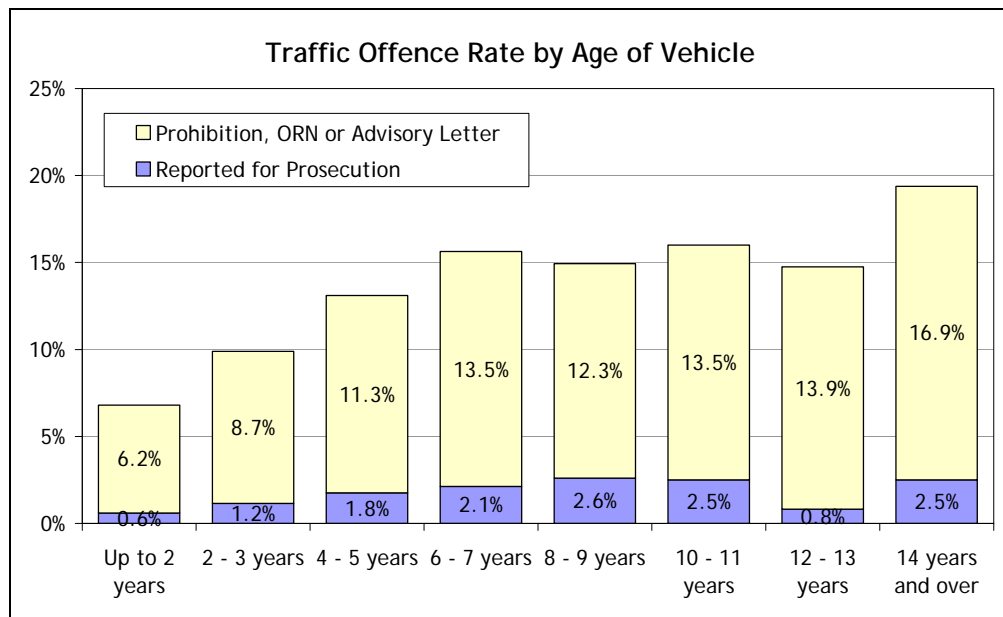
- 5.2.5. Similarly, Drivers' Hours and Tachographs were the most likely reasons for a verbal warning being given, with 6.9% and 2.5% of all checks resulting in a verbal warning in these categories respectively.

Figure 58



5.3. Age of Vehicle

- 5.3.1. In the 2008 HGV FCC there were significantly fewer checks that resulted in notices to report for prosecution issued to vehicles aged less than two years old. No significant difference was found in the number of checks resulting in vehicles aged between two and nine years old being reported for prosecution. Small sample sizes for vehicles aged ten years old and over mean that the results for these age groups are inconclusive.

Figure 59

- 5.3.2. There was evidence of a positive correlation (0.518) between the age of a vehicle and the number of notices to report for prosecution being issued, suggesting that as the age of the vehicle increases, so does the likelihood of a vehicle being reported for prosecution.
- 5.3.3. Vehicles aged less than four years old received significantly fewer prohibitions, ORNs or advisory letters than those in other age groups, whereas vehicles in the six to seven years and 14 years and over age groups received significantly more than those in other age groups.
- 5.3.4. There was evidence of a strong positive correlation (0.933) between the age of a vehicle and the number receiving a prohibition, ORN or advisory letter. This suggests that as the age of the vehicle increases so too does the likelihood of receiving a prohibition, ORN or advisory letter.

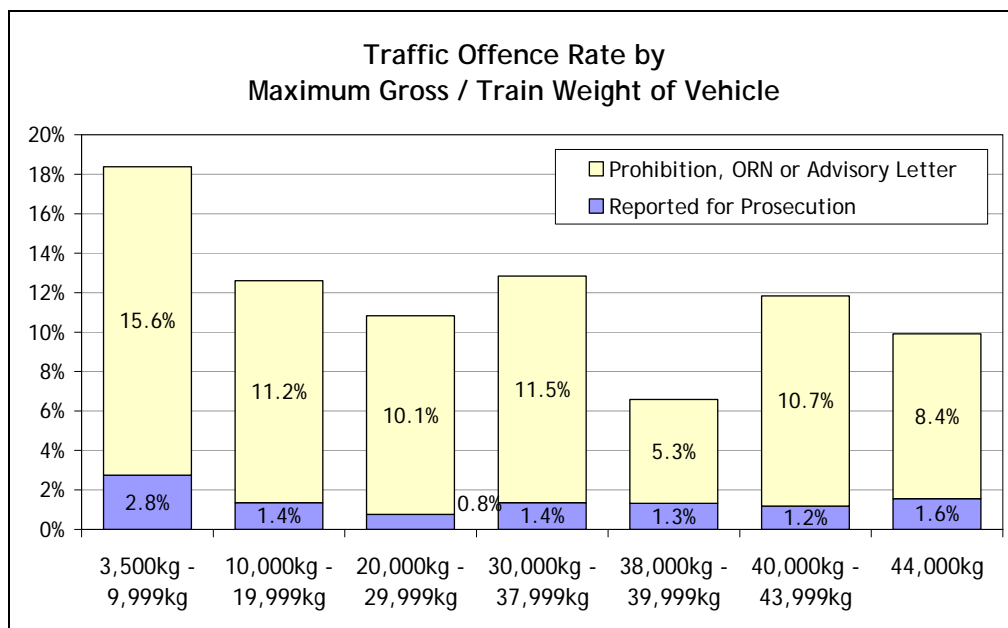
5.4. Maximum Permissible Gross/Train Weight

- 5.4.1. Vehicles with a maximum gross/train weight of 3.5 - 9.9 tonnes received the highest proportion of verbal warnings (30.1% of all issued); prohibitions, ORNs or advisory letters (30.5% of all issued); and reports for prosecution (35.5% of all issued).
- 5.4.2. The number of traffic offences resulting in vehicles being reported for prosecution was significantly higher for those vehicles with a maximum gross/train weight of 3.5 - 9.9 tonnes than for those in other weight categories. Sample sizes were too small for results of significant tests to be significant for vehicles with a maximum gross/train weight of between 30 and 43.9 tonnes.
- 5.4.3. The results revealed evidence of a negative correlation (-0.420) between the weight categories and the number of vehicles reported for prosecution, which suggests that as the weight of a vehicle increases, the likelihood of it being reported for prosecution due to a traffic offence decreases.
- 5.4.4. Vehicles checked with a maximum gross/train weight of between 3.5 and 9.9 tonnes were also significantly more likely to receive a prohibition, ORN, or

advisory letter than those in other weight categories. Those in the 38 - 39.9 tonnes and 44 tonnes categories were significantly less likely to receive a prohibition, ORN, or advisory letter than those in other weight categories.

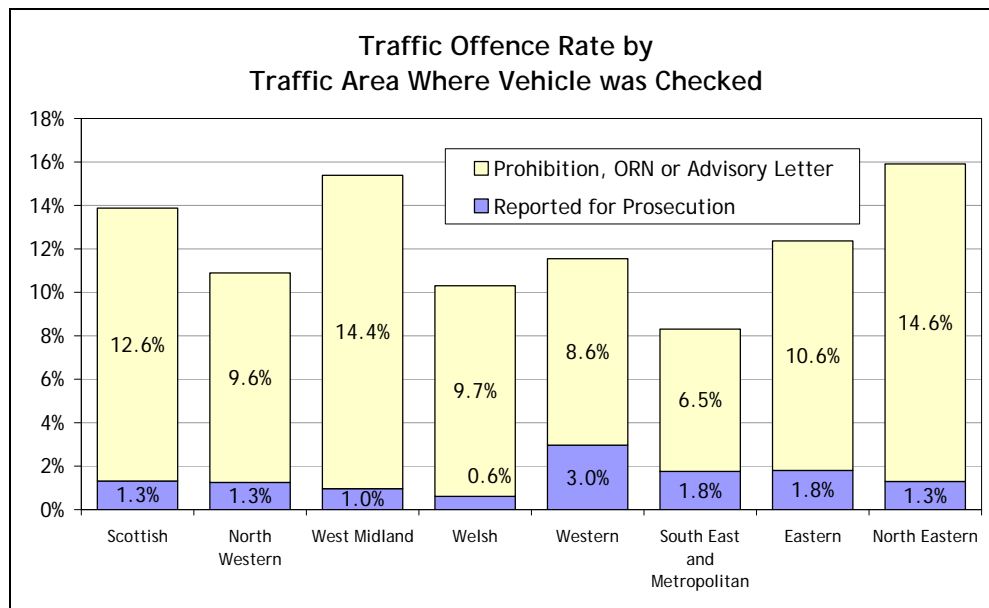
- 5.4.5. A negative correlation (-0.679) was evident between the weight categories and the number of prohibitions, ORNs or advisory letters issued, suggesting that as the weight of a vehicle increases, the likelihood of their committing a traffic offence resulting in their having any of these actions taken against them decreases.

Figure 60



5.5. Traffic Area Where Vehicle was Checked

- 5.5.1. Vehicles checked in the Western Traffic Area received a significantly higher number of notices to report for prosecution than those checked in other Traffic Areas. No significant difference was found in the proportion of vehicles being reported for prosecution in the other Traffic Areas, although results were inconclusive for the Welsh Traffic Area, due to a small sample size.

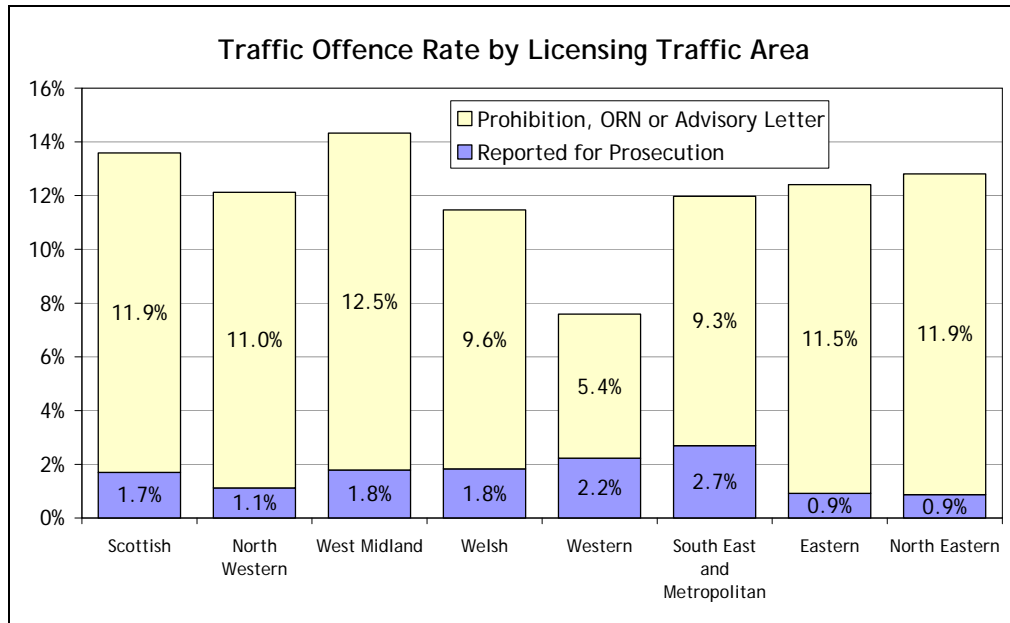
Figure 61

5.5.2. Vehicles checked in the West Midland and North Eastern Traffic Areas received a significantly higher proportion of prohibitions, ORNs or advisory letters than those checked in other Traffic Areas, whereas those checked in the Western and South East and Metropolitan Traffic Areas received a significantly lower proportion. No significant difference was found in the proportion issued to those checked in other Traffic Areas.

5.6. Traffic Area Where Operator of Vehicle was Licensed

5.6.1. There were no statistically significant differences found between the proportions of vehicles reported for prosecution between the different licensing areas. However, due to small sample sizes, results were inconclusive for vehicles licensed in the West Midland, Welsh and South East and Metropolitan Traffic Areas.

Figure 62

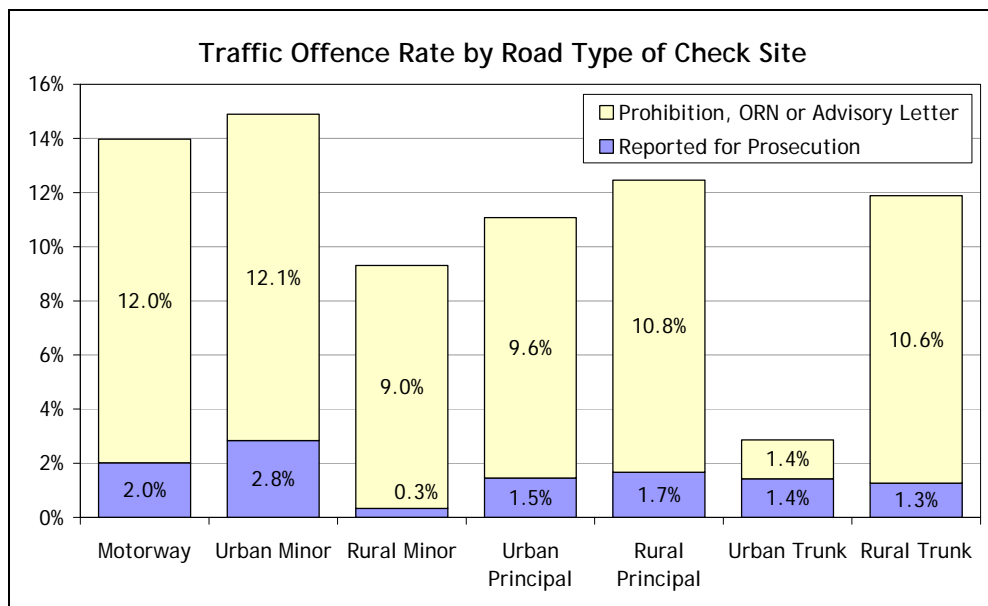


5.6.2. Vehicles licensed in the Western Traffic Area were significantly less likely to be issued a prohibition, ORN, or advisory letter than those licensed in other Traffic Areas. No other significant differences were found by licensing traffic area.

5.7. Road Type of Check Site

5.7.1. There were no statistically significant differences found between the proportions of vehicles reported for prosecution on most of the different road types. However, due to small sample sizes, results were inconclusive for vehicles checked whilst travelling on urban trunk roads, and both rural and urban minor roads.

Figure 63

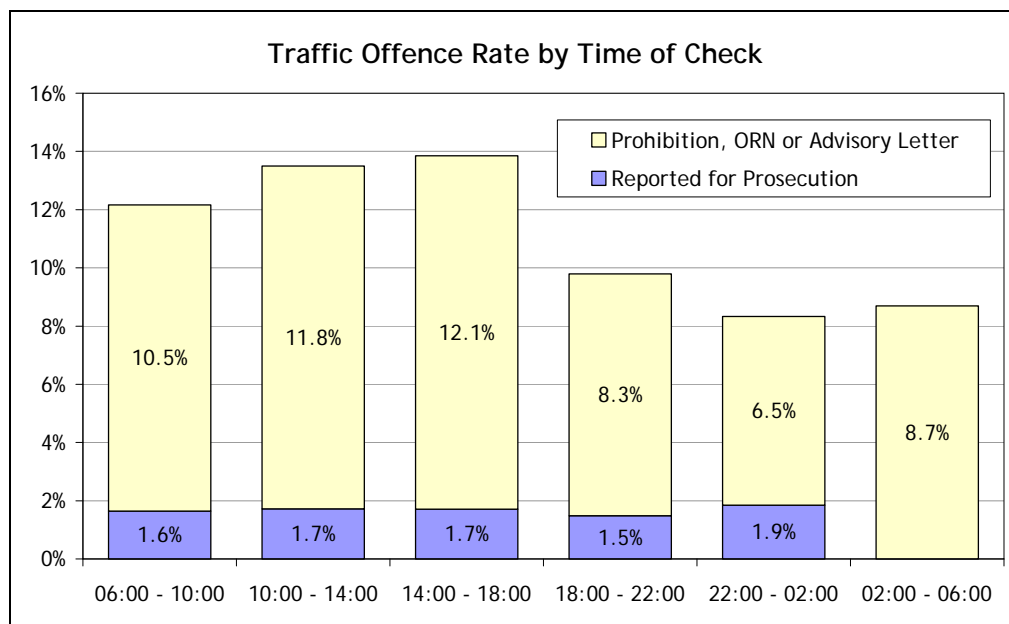


- 5.7.2. Vehicles checked whilst travelling on urban trunk roads received a significantly lower proportion of prohibitions, ORNs, or advisory letters than those checked whilst travelling on other road types. No significant differences were found on any other road types.

5.8. Time of Check

- 5.8.1. Although significance tests were carried out on the rates of reports for prosecution and time of check, no significant differences in the results were found. Due to small sample sizes, no conclusive results could be determined for vehicles checked between 22:00 and 02:00, and between 02:00 and 06:00.

Figure 64

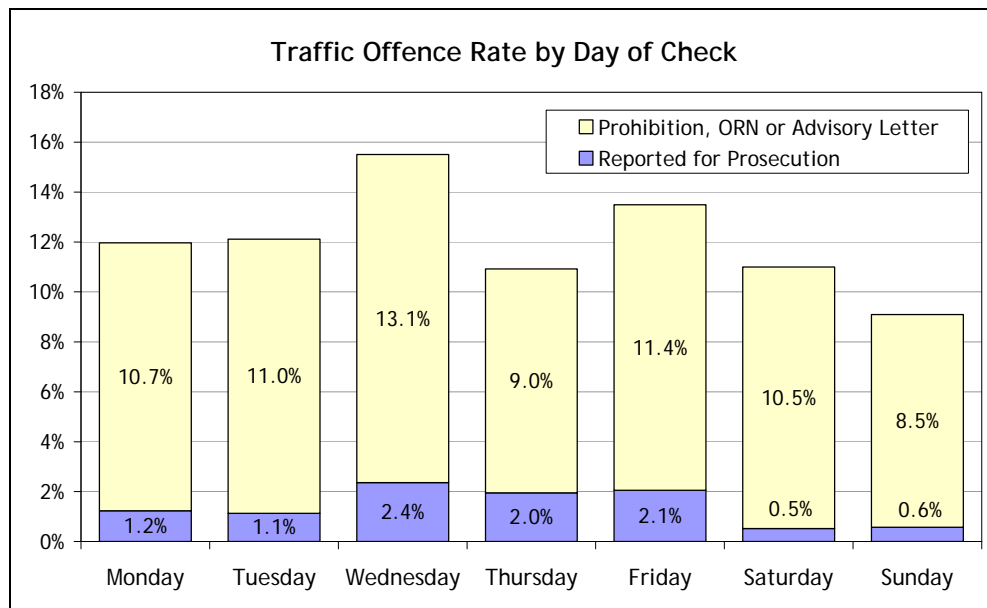


- 5.8.2. Vehicles checked between 22:00 and 02:00 were significantly less likely to be issued with a prohibition, ORN, or advisory letter than those checked during other time periods. No other significant differences were found in the distribution of prohibitions, ORNs, or advisory letters by time period of the check.

5.9. Day of Check

- 5.9.1. Although significance tests were carried out on the rates of reports for prosecution and day of check, no significant differences in the results were found. However, due to small sample sizes, no conclusive results could be determined for vehicles checked on Saturdays or Sundays.

Figure 65

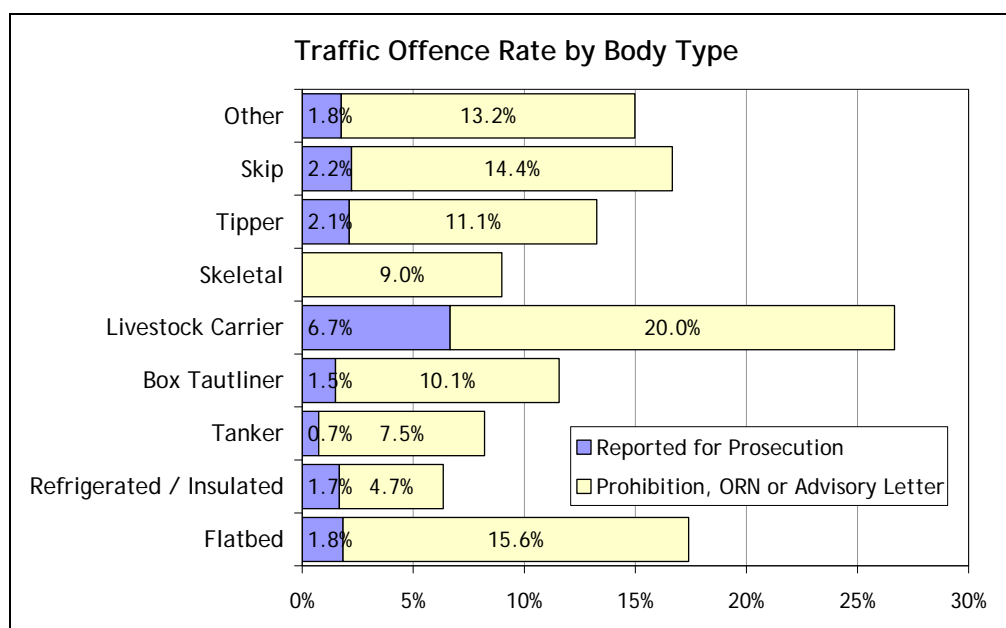


5.9.2. The only significant difference revealed by significance tests carried out on the numbers of prohibitions, ORNs, or advisory letters issued by day of the week was with regards to Wednesdays, where a significantly higher proportion were issued than on other days.

5.10. Body Type

5.10.1. Although significance tests were carried out on the rates of reports for prosecution and body type of vehicles, no significant differences in the results were found. However, results were inconclusive for Refrigerated/Insulated vehicles, Tankers, Livestock Carriers, Skeletal HGVs, Skips and Other Vehicles due to small sample sizes.

Figure 66

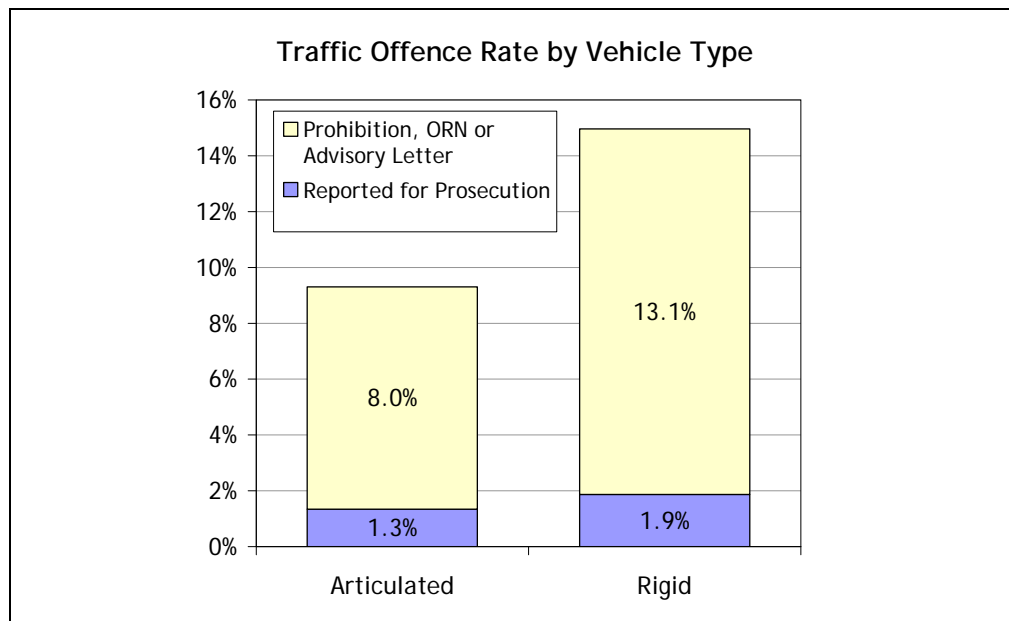


- 5.10.2. Flatbed HGVs received a significantly higher proportion of prohibitions, ORNs, or advisory letters than vehicles of other body types, whilst Refrigerated/Insulated HGVs received a significantly lower proportion. No conclusive significance test results could be determined for Livestock Carriers due to a small sample size.

5.11. Vehicle Type

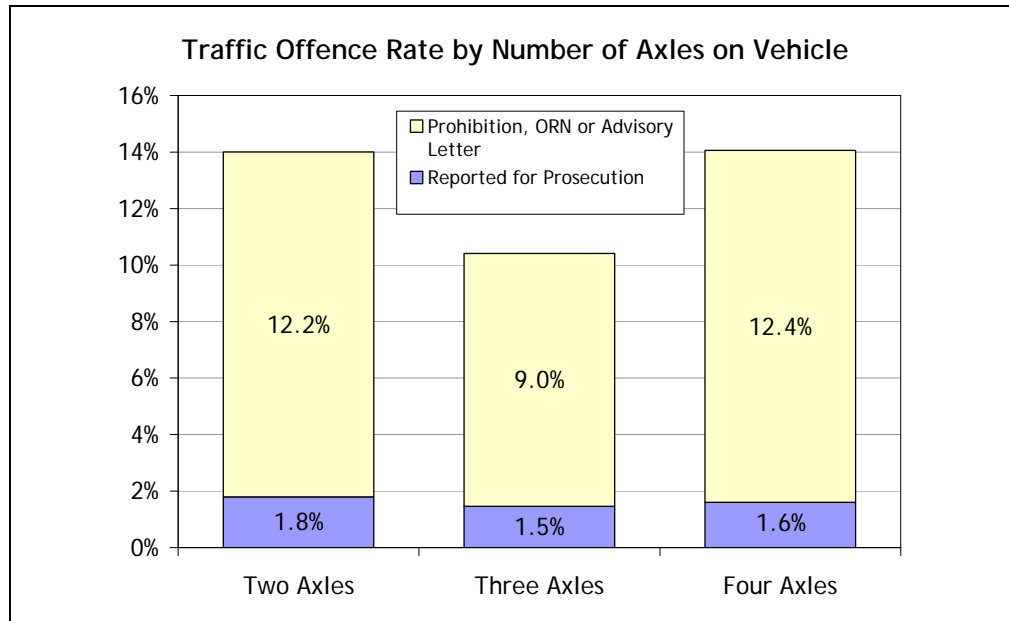
- 5.11.1. Although significance tests were carried out on the rates of reports for prosecution and vehicle type, no significant differences in the results were found.
- 5.11.2. Rigid vehicles are significantly more likely to receive a prohibition, ORN or advisory letter than articulated vehicles.

Figure 67



5.12. Number of Axles on Vehicle

- 5.12.1. This section considers the number of axles on the tractor unit or rigid vehicle only. It does not include the number of axles on the trailer.
- 5.12.2. No significant differences in the proportions of vehicles reported for prosecution by the number of axles on the vehicle were found, although no conclusive results could be determined for vehicles with four axles, due to a small sample size.

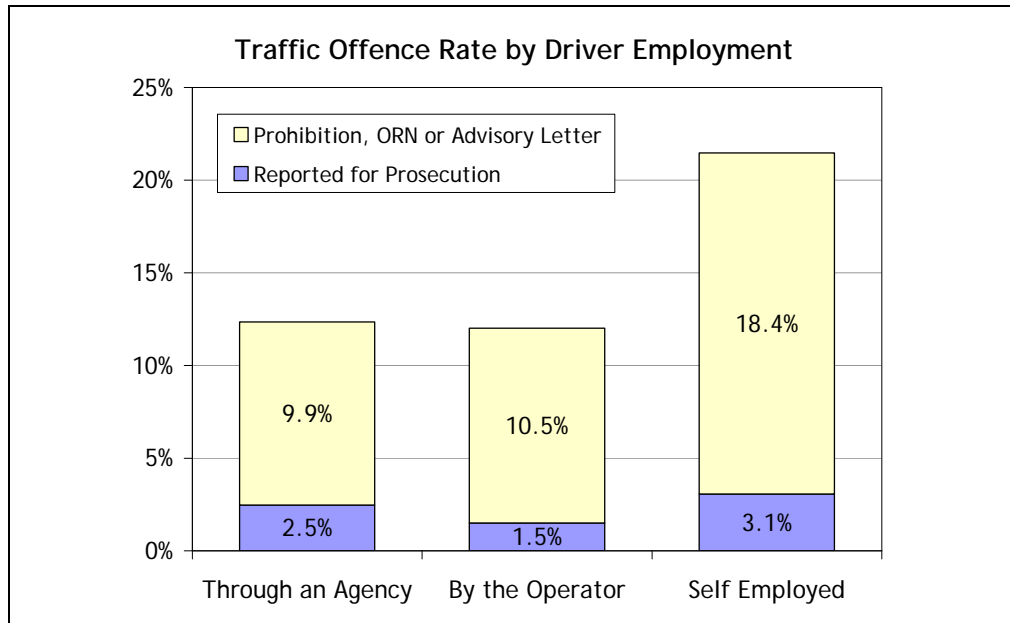
Figure 68

5.12.3. Vehicles with two axles received a significantly higher proportion of prohibitions, ORNs, or advisory letters than those vehicles with different numbers of axles combined. Vehicles with three axles received a significantly lower proportion. Although the proportion received by vehicles with four axles appears to be high, when the number of checks covered by this category is taken into account, this proportion is not significant (see 2.2.6 for further details).

5.13. Driver Employment

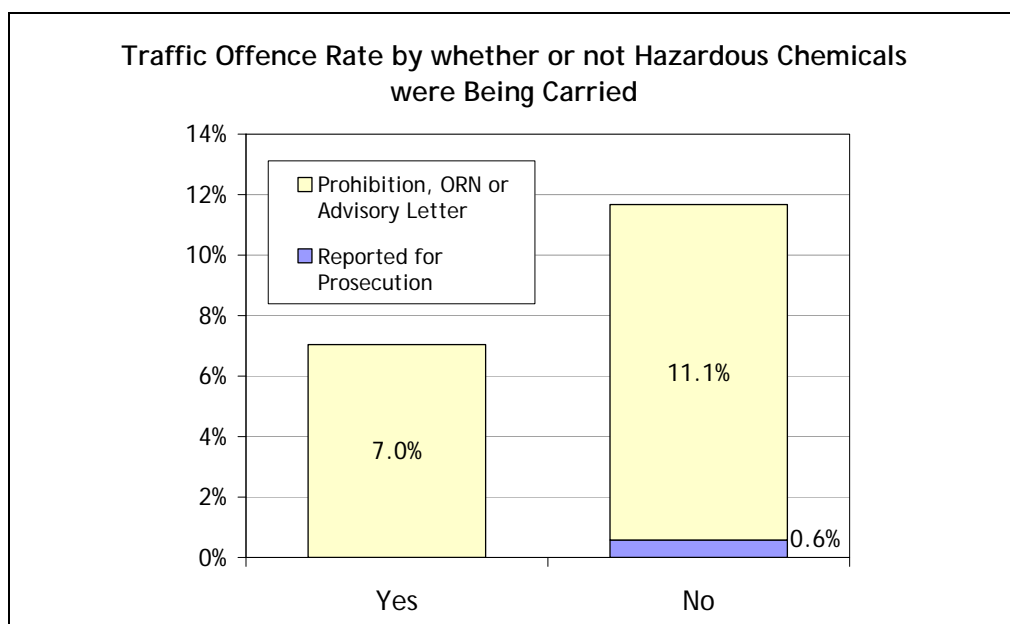
5.13.1. No significant difference was found in the proportion of vehicles reported for prosecution being driven by those employed by an operator; however the sample sizes for those driven by self-employed drivers and those working with an agency were too small to produce any conclusive results.

5.13.2. Drivers employed by an operator were significantly less likely to receive a prohibition, ORN, or advisory letter following their check than drivers of other employment groups. Self-employed drivers were significantly more likely to do so. Although the proportion of drivers employed through an agency who received a prohibition, ORN, or advisory letter was less than that for drivers employed by the operator, this proportion was not significant; this is due to the differences in the number of checks undertaken within each employment group (see 2.2.6 for further details).

Figure 69

5.14. Carriers of Hazardous Chemicals

- 5.14.1. There was insufficient data to be able to determine whether there were any significant differences in the number of vehicles being reported for prosecution by whether or not they were carriers of hazardous chemicals.
- 5.14.2. Significance tests applied to the numbers of vehicles receiving prohibitions, ORNs, or advisory letters by whether or not they were carriers of hazardous chemicals found no statistically significant differences.

Figure 70

6. Conclusions

6.1. Main Results for Condition of Vehicles

- 6.1.1. VOSA checked 3773 GB registered vehicles during the 2008 HGV FCC. Of these, 3.9% had immediate prohibitions; a further 5.9% incurred a delayed prohibition. An additional 9.8% received an inspection notice. These are point estimates¹¹ of prohibitions rates.
- 6.1.2. The proportion of immediate prohibitions issued in 2008 (3.9%) was significantly lower than in previous years. Furthermore, this represents a statistically significant trend, showing that the number of immediate prohibitions issued to vehicles has dropped at an average rate of 0.32% per annum over the twelve year period that the survey has covered.
- 6.1.3. The proportion of delayed prohibitions issued in 2008 (5.9%) was significantly lower than in previous years. This also represents a statistically significant trend, with the number of delayed prohibitions issued to vehicles dropping at an average rate of 0.36% per annum over the twelve year period of the survey.
- 6.1.4. The proportion of inspection notices issued in 2008 (9.8%) was significantly lower than in previous years. This also represents a statistically significant trend, with the number of inspection notices issued to vehicles dropping at an average rate of 0.74% per annum over the twelve year period that the survey has been running.
- 6.1.5. 8.1% of vehicles checked in the 2008 check had one prohibitable defect, 1.2% had two prohibitable defects and 0.5% had three or more prohibitable defects. In total, 9.8% of the vehicles had at least one prohibitable defect.
- 6.1.6. The average number of vehicle defects found per vehicle (where a defect has been found) for 2008 was 1.23. Over the twelve year period that the survey has covered, the average number of vehicle defects per vehicle has shown a statistically significant decrease of 0.04.
- 6.1.7. Analysis of the accuracy of the 2008 figures suggests that there is a 95% chance that between 3.1% and 4.7% of the miles travelled by HGVs are travelled by vehicles with a defect warranting an immediate prohibition. For total prohibitions, the corresponding interval is 7.7% to 11.8%. See Annex B.3.5 for further discussion/explanation of this point.

6.2. Main Results for Condition of Trailers

- 6.2.1. Of the 3773 vehicles checked in the 2008 HGV FCC, 1701 were drawing trailers. Of these, 3.4% had immediate prohibitions and a further 7.5% incurred delayed prohibitions. An additional 5.6% received an inspection notice, although no further action was taken.
- 6.2.2. Analysis of the year-on-year figures for trailers for the twelve year period that the survey has covered revealed no significant trends.
- 6.2.3. There was a significantly lower proportion of immediate prohibitions issued to trailers in 2008 (3.4%) than in previous survey years.

¹¹ A point estimate is an estimate of a population parameter, in this instance a prohibition rate, for a population that is calculated from a sample of that population.

- 6.2.4. There was no significant difference between the proportion of delayed prohibitions issued to trailers in 2008 (7.5%) and the proportion issued in previous survey years.
- 6.2.5. There was no significant difference between the proportion of inspection notices issued to trailers in 2008 (5.6%) and the proportion issued in previous survey years.
- 6.2.6. Analysis of the accuracy of the 2008 figures suggests there is a 95% chance that between 2.3% and 4.5% of miles travelled by HGV trailers involves trailers with a defect warranting an immediate prohibition. For total prohibitions the corresponding interval is 8.9% to 13.0%. Further details can be found in Annex B.3.5.

6.3. Main Results for Traffic Offences

- 6.3.1. 3773 checks for traffic offences were made in 2008. Of these, 1.6% resulted in at least one offence being reported for prosecution, a further 10.9% in an advisory letter, prohibition or ORN, and an additional 10.3% in a verbal warning. It should be noted that for comparison purposes, in 2003 new traffic offence categories Prohibitions and ORNs were introduced. 2008 is the fifth survey year that these new categories have been grouped under Advisory Letters (See also 6.3.3 below).
- 6.3.2. The proportion of traffic offences resulting in a vehicle being reported for prosecution (1.6%) was significantly lower in 2008 than in previous years. Furthermore, this represents a statistically significant trend, showing that the number of vehicles reported for prosecution has dropped at an average rate of 0.55% per annum over the twelve year period of the survey.
- 6.3.3. The proportion of traffic offences resulting in an advisory letter, prohibition or ORN (10.9%) was significantly higher in 2008 than in previous years. Comparing this 2008 proportion with those from 2003 onwards (from when Prohibitions and ORNs were introduced to the Advisory Letters category), it is again found to be significantly higher than the proportion issued in the previous survey years.
- 6.3.4. The proportion of traffic offences resulting in a verbal warning (10.3%) was significantly lower in 2008 than in previous years.
- 6.3.5. Analysis of the accuracy of the 2008 figures suggests there is a 95% chance that between 1.2% and 2.1% of miles travelled by HGVs involves vehicles that are committing a traffic offence which warrants a report for prosecution. For prohibitions, ORNs and advisory letters, the corresponding interval is between 9.5% and 12.2%. Further details can be found in Annex B.3.5.

6.4. Other Findings

6.4.1. Introduction

- 6.4.1.1. The check results were analysed in an attempt to identify types of vehicles that were more likely to exhibit roadworthiness defects or less likely to comply with traffic regulations. These findings do not imply that every vehicle in the categories highlighted will be in a poor condition or will be breaking traffic regulations; the intention is that this data be used as an indication of the types of vehicles that might be targeted during VOSA's normal operations.

6.4.1.2. Note that there are complicated interactions between the factors considered. For example, new vehicles are more likely to exceed the 38 tonne threshold than old ones and articulated vehicles are more likely to weigh more than rigid vehicles. A category may have a significant result more because of its relationship with another factor than because of any direct cause.

6.4.2. Roadworthiness

- 6.4.2.1. There is a correlation between the age of a vehicle and its roadworthiness. The older a vehicle, the lower the level of roadworthiness. Older vehicles (aged eight years or older) were more likely to receive prohibitions, while younger vehicles (aged up to two years) were less likely to receive prohibitions.
- 6.4.2.2. Trailers drawn by vehicles between four and five years old received significantly fewer prohibitions than trailers drawn by vehicles of other ages. Trailers drawn by vehicles aged between eight and nine years received significantly more prohibitions and immediate prohibitions than trailers drawn by vehicles of other ages. There was a strong, positive correlation between the likelihood of a trailer receiving an immediate prohibition and the age of its drawing vehicle.
- 6.4.2.3. There is a negative correlation between the maximum gross/train weight of a vehicle and its roadworthiness. Vehicles with a maximum gross/train weight between 3.5 and 9.9 tonnes were more likely to receive prohibitions (both immediate and total) than those in other weight categories. Conversely, vehicles weighing 44 tonnes were less likely to receive prohibitions (both immediate and total).
- 6.4.2.4. Vehicles *checked* in the Scottish and North Eastern Traffic Areas received significantly more prohibitions than vehicles checked in other Traffic Areas, whereas those checked in the Western and Eastern Traffic Areas received significantly fewer. Vehicles checked in the Eastern Traffic Area received more inspection notices, while those checked in the West Midland Traffic Area received fewer inspection notices.
- 6.4.2.5. Trailers *checked* in the Eastern and Western Traffic Areas received significantly fewer prohibitions than those in other Traffic Areas, whereas trailers checked in the South East and Metropolitan and North Eastern Traffic Areas received significantly more. Significantly fewer inspection notices were issued to trailers checked in the North Western and Western Traffic Areas.
- 6.4.2.6. Vehicles *licensed* in the Scottish Traffic received significantly more total prohibitions than those licensed in other areas, whilst those licensed in the Western and Eastern Traffic Areas received significantly fewer.
- 6.4.2.7. Trailers drawn by vehicles *licensed* in the South East and Metropolitan and North Eastern Traffic Areas received significantly more prohibitions than those drawn by vehicles licensed in other Traffic Areas.
- 6.4.2.8. Vehicles checked on rural trunk and rural principal roads received significantly more prohibitions and inspection notices than vehicles checked on other road types. Those checked whilst travelling on urban principal roads received significantly fewer inspection notices than those checked on other road types.

- 6.4.2.9. Trailers checked on rural principal and urban trunk roads received significantly more inspection notices than those on other road types.
- 6.4.2.10. Vehicles checked between 18:00 and 22:00 received significantly fewer prohibitions (immediate and total) and inspection notices than those checked during different time periods, suggesting that vehicles travelling during this period are more roadworthy. Those checked between 10:00 and 14:00 received significantly more immediate prohibitions than those checked during other time periods and those checked between 06:00 and 10:00 received significantly more inspection notices than other time periods.
- 6.4.2.11. Trailers checked between 22:00 and 02:00 received significantly more inspection notices than vehicles checked in other time periods.
- 6.4.2.12. Vehicles checked on Mondays received significantly more immediate prohibitions than those checked on other days.
- 6.4.2.13. There were no significant differences between the proportions of prohibitions or inspection notices issued and the day of the week that trailers were checked.
- 6.4.2.14. Box/Tautliner and Refrigerated/Insulated HGVs had significantly fewer total and immediate prohibitions than other body types. Tippers received significantly more total prohibitions, and Skips received significantly more inspection notices, than vehicles of other body types.
- 6.4.2.15. Trailers pulled by Box/Tautliner and Refrigerated/Insulated vehicles received significantly fewer total and immediate prohibitions than those drawn by vehicles of other body types.
- 6.4.2.16. Rigid vehicles were significantly more likely to receive a prohibition or an inspection notice than articulated vehicles. This finding may be due to the relationship (mentioned previously) that rigid HGVs tend to be older and have lower plated weights than articulated HGVs.
- 6.4.2.17. Vehicles with two axles received significantly more inspection notices and immediate prohibitions than other vehicles. Vehicles with three axles were significantly less likely to receive an inspection notice or a prohibition (immediate or delayed), suggesting that they are more roadworthy than vehicles with a different number of axles.
- 6.4.2.18. No significant differences were found in the proportion of prohibitions or inspection notices issued to trailers with different numbers of axles.

6.4.3. Traffic Compliance

- 6.4.3.1. In keeping with previous compliance checks, the age of a vehicle proved to be a clear indicator as to the condition and the compliance of a vehicle and operator. This is a useful indicator for targeting, being immediately apparent on looking at an HGV.
- 6.4.3.2. Vehicles with a maximum gross/train weight of 3.5 - 9.9 tonnes were significantly more likely to receive a prohibition or inspection notice than other weight categories. They were also significantly more likely to be reported for prosecution or receive a prohibition, ORN or advisory letter. Vehicles weighing 44 tonnes were significantly less likely to receive a prohibition or inspection notice than other weight categories and were also significantly less likely to receive a prohibition, ORN or advisory letter, along with vehicles in the 38 - 39.9 tonnes weight category.

- 6.4.3.3. Vehicles *checked* in the Western Traffic Area were significantly more likely to be reported for prosecution than those checked in other Traffic Areas. Those checked in the West Midland and North Eastern Traffic Areas were significantly more likely to receive a prohibition, ORN or advisory letter, while those stopped in the Western and South East and Metropolitan Traffic Areas were significantly less likely to receive a prohibition, ORN or advisory letter, than vehicles stopped in other Traffic Areas.
- 6.4.3.4. Vehicles *licensed* in the Western Traffic Area were significantly less likely to receive a prohibition, ORN or advisory letter than vehicles licensed in other Traffic Areas.
- 6.4.3.5. Vehicles travelling on urban trunk roads were significantly less likely to receive a prohibition, ORN or advisory letter than vehicles using other roads.
- 6.4.3.6. Vehicles checked between 22:00 and 02:00 were significantly less likely to be issued with a prohibition, ORN or advisory letter than vehicles checked during other time periods.
- 6.4.3.7. Vehicles checked on a Wednesday were significantly more likely to receive a prohibition, ORN or advisory letter, than vehicles checked on other days of the week.
- 6.4.3.8. Refrigerated/Insulated HGVs were significantly less likely to receive a prohibition, ORN or advisory letter than vehicles of other body types, whereas Flatbed HGVs were significantly more likely to do so.
- 6.4.3.9. Rigid vehicles were significantly more likely to receive a prohibition, ORN or advisory letter than articulated vehicles.
- 6.4.3.10. Vehicles with two axles were significantly more likely to receive a prohibition, ORN or advisory letter than other vehicles, whilst vehicles with three axles were significantly less likely to do so.
- 6.4.3.11. Drivers employed by an operator were significantly less likely to receive a prohibition, ORN or advisory letter than drivers of other employment types. Self-employed drivers were significantly more likely to do so.