THE FUTURE OF TRANSPORT

CLIENT PROJECT REPORT CPR2516

Survey of vehicle roadworthiness of HCVs and driver compliance with EU rules on driving times, breaks and rest periods

Summary of HGV and bus survey results - 2016 data

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1 Introduction

The aim of this survey was to determine the current levels of driver compliance and vehicle roadworthiness of HGVs and buses in Ireland with the operating licence, tachograph, CPC and EU drivers' hours' regulations.

The survey was designed by the Transport Research Laboratory (TRL) and carried out by the Vehicle Inspectors and Transport Officers at RSA. Heavy goods vehicles (HGVs) and buses were randomly stopped for inspection at roadside locations during 2016.

This was the third survey of its kind, the first two of which were carried out in 2012 and 2014. The majority of the data presented in this report relates to 2016, in order to maintain the biennial reporting.

This report is a summary of the results from the HGV and bus surveys undertaken in 2016, with comparisons to results from the 2014 and 2012 surveys. The final section of this report also contains some discussion about the evidence these surveys contain regarding the effectiveness of the Commercial Vehicle Reform (CVR) programme introduced in 2013, which aims to improve the roadworthiness of commercial vehicles in Ireland.

2 Terminology

In this report the term 'roadworthiness inspection' refers to the roadside inspection carried out by the Vehicle Inspectors as part of the survey. The term 'driver compliance check' refers to the roadside check of the compliance of drivers with EU rules on driving times, breaks and rest periods, tachograph and driver CPC requirements, and operator licensing compliance. These checks are carried out by the Transport Officers.

The term 'defect' refers to a motor vehicle or trailer roadworthiness defect and the term 'infringement' refers to a breach of the licensing, tachograph, CPC or drivers' hours' requirements.

'HGV survey' refers to the survey of HGVs (i.e. vehicle categories N2 and N3) and trailers (i.e. O3 and O4). 'Bus survey' refers to the survey of passenger vehicles with more than eight passenger seats (i.e. vehicle categories M2 and M3).

3 Notes about the data

To compare between the three surveys, the 2014and 2016 data were weighted using the road type of the inspection site. Weighting the data adjusts the results from the 2014and 2016 inspections to take into account differences in the location of the inspections from the survey in 2012 to ensure, as far as possible, the results from all the surveys are comparable to the results from 2012.

The results from the bus survey are based on much smaller sample sizes than the results from the HGV survey. As a result, care should be taken when interpreting the figures from the bus survey, as small changes in the number of vehicles in each group mean that larger changes in the proportions may be due to chance alone. Due to the small number of buses inspected at the roadside, the results from the bus survey were not weighted. For

operational reasons, e.g. reducing the delays experienced by bus passengers, most bus inspections are carried out on the companies' premises or on location at events and not at the roadside (the focus of this report).

Vehicles were randomly selected to participate in the survey; however, selection of inspection sites may introduce bias into the results. In 2012, many of the bus inspection sites were located near to schools or on school routes. As a result, school buses may be over-represented in this survey and the results are not necessarily representative of the national bus fleet as a whole. For this reason, care should be taken when comparing the results of the 2012 and 2014/2016 bus surveys as the results may not be directly comparable.

This report only contains inspections which were not the result of targeted enforcement i.e. vehicles were selected at random to be included in the survey. As a result, the number of vehicles and drivers inspected is likely to differ from the numbers presented in other RSA publications, since these also include targeted inspections.

4 HGV survey

4.1 Key findings - roadworthiness inspections

The Vehicle Inspectors checked 14,119 vehicles (8,873 HGVs and 5,246 trailers) in 2016.

Figure 1 shows the proportion of HGVs and trailers that were non-compliant (i.e. had at least one defect recorded) in all the surveys.

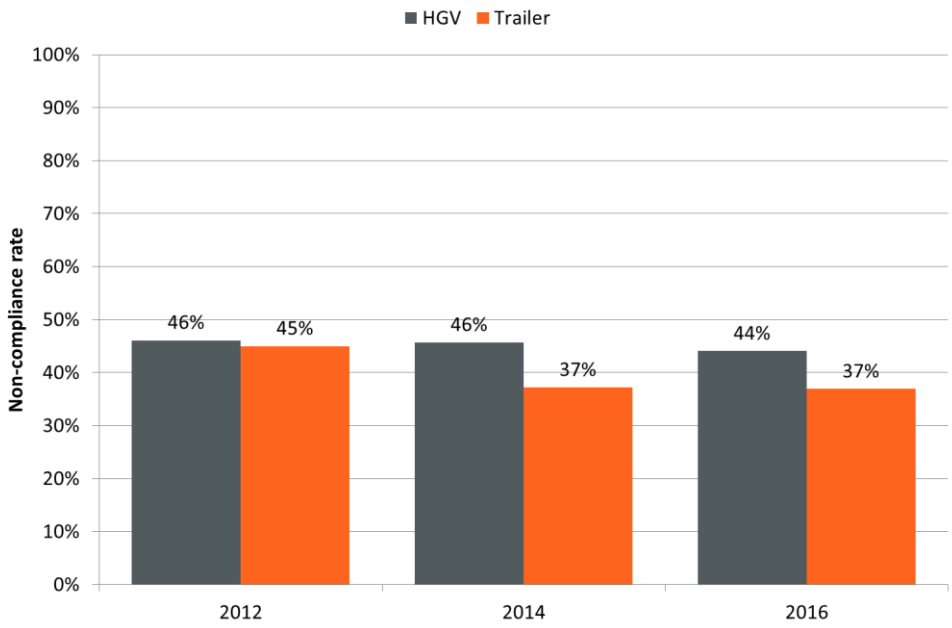

Figure 1: HGV and trailer vehicle roadworthiness inspection non-compliance rates

In 2012, 46% of the inspected HGVs had at least one defect; this had declined to 44% in 2016. The decline for trailers with at least one defect was larger (from 45% in 2012 to 37% in 2016); this decline was statistically significant.

HGVs

The results from the 2016 analysis of 8,873 HGVs showed:

- Forty four percent of the inspected HGVs had at least one defect (23% had a maximum defect severity of minor, 19% were major, and 2% were dangerous). 56% had no defects recorded.
- In total, 7,604 defects were detected; an average of 0.86 defects per HGV inspection.
- The most common defect category in which HGVs failed inspections was the 'lamps, reflectors, electrical equipment' category (21% of inspections). However, when the data are broken down into the different subcategories, defects with tyres were the most common (532 defects). Of the defects listed within the top 10, defects with the vehicles' anti-lock braking systems were most commonly recorded as dangerous (94%).
- Inspection site, vehicle age and inspection province were identified as important factors for predicting which HGV inspections are likely to record a defect. No significant difference in the proportion of vehicles with a defect was found across the days of the week.
    - Defects were more commonly found at weighbridges (where 59% of HGVs had at least one defect) and least commonly found on motorways (38%), although these are both based on a small number of inspections so care must be taken when interpreting this result.
    - Defects were more commonly recorded for older vehicles than newer vehicles: the proportion of HGVs with at least one defect increased from 18% for vehicles aged 0-2 years to 67% for vehicles aged over 21 years.
    - Inspections in Munster had the highest proportion of HGVs (49%) with at least one defect and Ulster had the lowest (31%).

Comparison of HGV results to previous surveys show:

- The proportion of HGV inspections with at least one defect was similar across all surveys (46% in 2012 and 2014 and 44% in 2016).
- However, the results indicate that the defects which are being detected were less serious in 2016 than in 2012 (21% dangerous or major compared to 27%).
- 'Tyres' remained the most common defect in all surveys (8% of HGVs in 2012 and 2014 and 6% in 2016). 65% of these defects were recorded as dangerous.

Trailers

The results from the 2016 analysis of 5,246 trailers showed:

- Thirty seven percent of trailers had at least one defect recorded, 16% of the inspections had a maximum defect severity of minor, 19% were major, and 2% were dangerous. 63% had no defects.
- In total, 2,980 defects were detected: an average of 0.6 defects per trailer inspection.
- Trailers most commonly failed the inspection due to defects with the 'identification of the vehicle' (15% of inspections).
- Absence of a Certificate of Roadworthiness (CRW) at the roadside (captured as 'absence of technical inspection', 'CRW expired' or 'CRW not displayed) was the most common breach.
- Of the defects listed within the top 10, defects with the trailers' anti-lock braking system were commonly recorded as dangerous (97%).
- Inspection sites and inspection province were identified as important predictors of whether an inspection would detect a trailer defect. No significant difference in the proportion of vehicles with a defect was found across the days of the week.
    - The findings for trailers were similar to those seen for HGVs: more trailers inspected at weighbridges recorded defects (56%) than at other inspection sites, and fewer at ports (29%); the same caveats on small sample sizes apply.
    - Inspections in Munster had the highest proportion of trailers with at least one defect (43%). Ulster had the lowest (28%).

Comparison of results for trailers to previous surveys shows:

- The proportion of trailers with at least one defect has significantly reduced (from 45% in 2012 to 37% in 2014 and 2016).
- The proportion of trailers with maximum defect severity dangerous has also decreased (3% in 2012 compared to 1% in 2014 and 2% in 2016).

4.2 Key findings - driver compliance checks

In 2016 the Transport Officers carried out 2,396 HGV driver compliance checks.

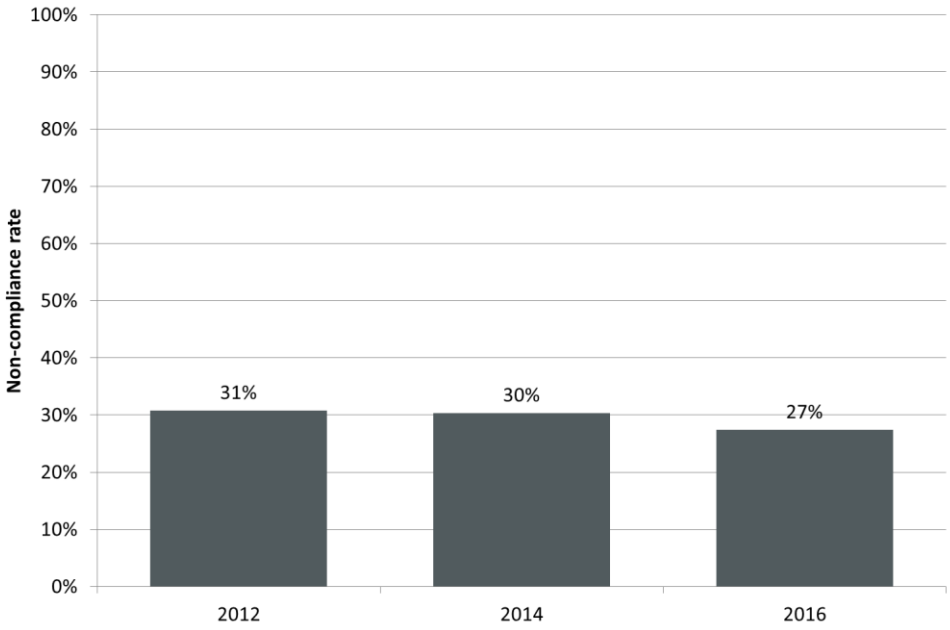

Figure 2: HGV driver compliance check non-compliance rates

In 2012 31% of HGV drivers had at least one infringement; this was lower in subsequent years (30% in 2014 and 27% in 2016). This difference was significant.

HGV drivers

The 2016 results from 2,396 driver compliance checks showed:

- Twenty seven percent of HGV driver inspections had at least one infringement; 6% of which had a maximum infringement severity 'very serious', 8% had maximum infringement severity 'serious' and 13% had maximum infringement severity 'minor'.
- In total, 1,699 infringements were detected across 2,396 checks: an average of 0.7 infringements per driver compliance check.
- The most common infringements were 'Fail to take adequate breaks' (271 infringements) and 'Fail to take daily rest period' (161 infringements).
- There was some indication that vehicle age is important when predicting whether a compliance check was likely to identify an infringement: 6-10 year old vehicles had a higher proportion of inspections with at least one infringement recorded than newer or older vehicles.

Comparison of the results to previous surveys shows:

- The proportion of driver compliance checks with at least one infringement was lower in 2016 (27% compared to 31% in 2012).
- The proportion of driver compliance checks with a maximum infringement severity 'very serious' was 9% in 2012, 10% in 2014 and reduced to 6% in 2016.

5 Bus survey

5.1 Key findings - roadworthiness inspections

In 2016 1,102 bus roadworthiness inspections were carried out by the Vehicle Inspectors.

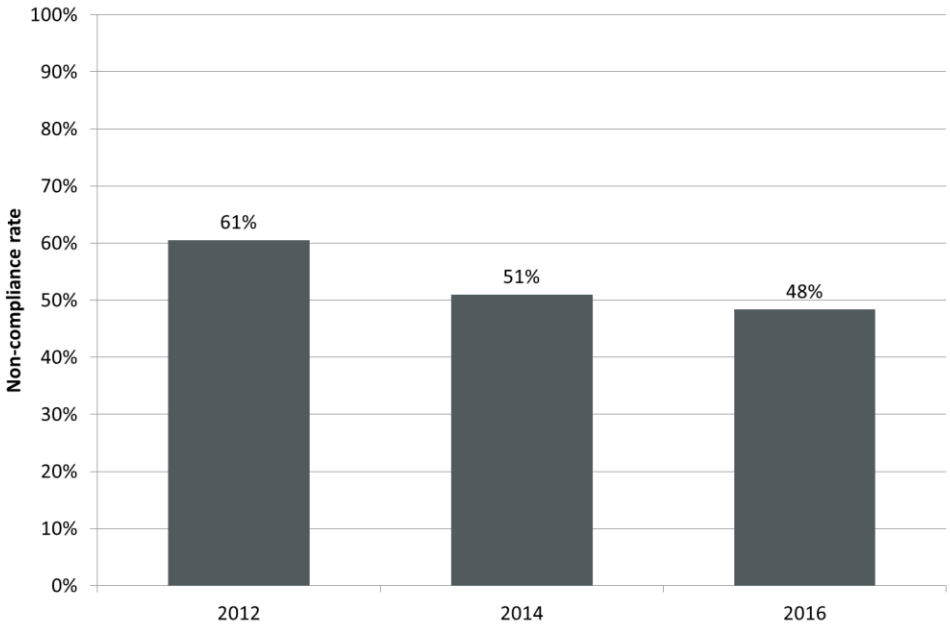

Figure 3: Bus roadworthiness inspection non-compliance rates

In 2012 61% of the buses inspected had one or more defects recorded. This reduced to 48% in 2016. This difference was significant.

Buses

The results from 1,102 bus roadworthiness inspections showed:

- Forty eight percent of buses inspected had at least one defect: 2% had a maximum defect severity of dangerous, 19% were major and 27% were minor.
- In total, 1,110 defects were detected: an average 1.0 defect per inspection.
- Buses most commonly failed the inspection due to defects in the 'other equipment' category (22% of inspections). This category includes defects with safety belts, fire extinguishers, locks, tachograph equipment, and first aid kits. Defects with the fire extinguisher were the most common defect (89 defects).
- Defects with the tyres were also common (70 defects identified). 64% of the tyre defects were given the severity ‘major’ or ‘dangerous’. Older buses were significantly more likely to have a defect recorded than newer buses, increasing from 32% of vehicles aged 0-2 years to 53% aged over 21 years.
- Buses inspected in Connacht also showed a significantly higher proportion with defects (58%) compared to Ulster (30%).

Comparison of the results to previous surveys shows:

- There was significantly fewer buses with defects in 2016 compared to 2012 (48% compared to 61%), although there was some bias present in the 2012 survey so caution should be taken interpreting these results.
- In 2012, a much higher proportion of the vehicles inspected had a major or dangerous defect (36%) compared to the proportions found in 2014 (16%) and 2016 (21%).

5.2 Key findings - driver compliance checks

In 2016, 116 bus driver compliance checks were carried out by the Transport Officers. The small sample size means that caution should be taken when interpreting these results.

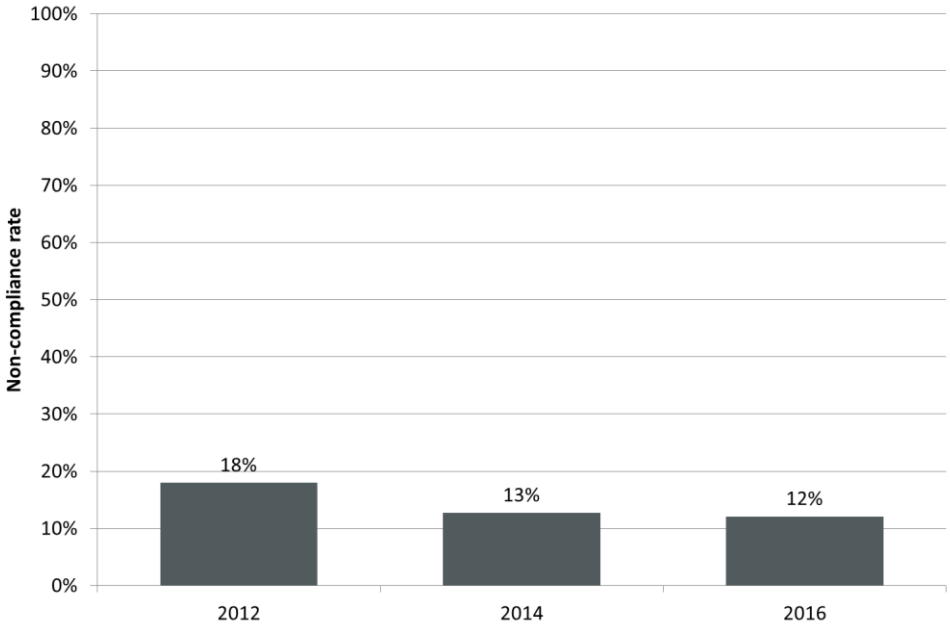

Figure 4: Bus driver compliance check non-compliance rates

In 2012 18% of drivers checked had an infringement compared to 13% in 2014 and 12% in 2016. This decrease was not significant across the three years.

Bus drivers

The results from 116 bus driver compliance checks show:

- Twelve percent of the inspected drivers had at least one infringement, 4% had a maximum infringement severity of very serious, 4% were serious, and 4% were minor.
- In total, 14 infringements were found across the 116 inspections; an average of 0.13 infringements per inspection.
- 'Failure to take adequate break' in relation to the driver was the most common infringement recorded (4 infringements).

It was not possible to make robust comparisons to the previous surveys due to the small sample size for this survey.

6 Observations on the impact of the Commercial Vehicle Reform Programme

In 2013 a major roadworthiness reform program was introduced by the Road Safety Authority. The commercial vehicle reform (CVR) program aims to improve roadworthiness standards of commercial vehicles through roadside enforcement, operator compliance, and the standard of testing. Through the changes introduced as a result of the CVR program, a number of improvements were expected to occur over the course of the following few years. This section discusses whether there are indications that the changes have influenced the roadworthiness of HGVs, trailers and buses in Ireland.

Considering the overall level of compliance with roadworthiness regulations, we see that the proportion of HGVs with at least one defect has remained fairly static. However, there was a decline in the proportion of trailers with at least one defect and for buses, which might suggest that the CVR has influenced compliance rates.

Additionally, the average number of defects per inspection has declined over the three surveys and the proportion of vehicles with a maximum severity of major or dangerous has dropped, suggesting that overall compliance may have improved.

The introduction of CVR made it compulsory for operators to have a preventative vehicle maintenance system in place. Among other responsibilities, walk around checks are required to be carried out by the driver before driving to highlight defects, including those associated with tyres, vehicle identification and visibility, with the aim to reduce risk of a collision. Following the introduction of the CVR programme, premises inspections were introduced to ensure that operators had adequate preventative maintenance systems in place, including ensuring that these walk-around checks were happening. A stepped approach is taken at these inspections with advice and education being offered at first inspection. Where non-compliance continues enforcement is escalated with operators being issued with official Direction Notices and ultimately to prosecution where operators fail to comply with such directions.

If this part of the CVR program has been effective then it would be expected that the defects which are detectable during a walk around check, would be detected less frequently when vehicles are stopped for roadside inspections. Comparing the results for HGVs across the three surveys, the proportion of vehicles that failed in the inspection areas ‘identification of vehicle’ and ‘axles, wheels, tyres and suspension’ has decreased from the 2012 survey. There was an increase in the proportion of inspections that failed in ‘visibility’ in 2014 but this has declined since then. Trailers and buses showed improvements across all inspection areas.

‘Braking equipment’ also showed substantial improvements in compliance between 2012 and 2016, in particular for trailers where there was 20% failure in 2012 which reduced to 12% in 2016.

As the Certificate of Roadworthiness (CRW) is now issued centrally, the impact on compliance can be assessed by observing the number of vehicles recording either ‘absence of technical inspection’ or ‘CRW expired’ or ‘CRW not displayed’. The data suggests there

has been a decline in the proportion of vehicles with this breach since 2012, mainly for buses and HGVs.

This improvement in compliance is further supported by additional Authority reporting which shows improvements with respect to 'on time' presentation for the annual test since the introduction of the new system in September 2013 (Table 1).

Table 1: Percentage of vehicles presenting 'on time' for test

Vehicle type	October 2013	October 2014	October 2015	October 2016
HGV	64%	68%	72%	75%
Trailer	45%	65%	74%	75%
Bus	61%	80%	81%	80%

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