

HGV fatal accident rates

MTRU research for Campaign for Better Transport October 2013

Introduction

In the 2008 MTRU report on HGVs, attention was drawn to UK data for 2007 showing that heavy goods vehicles are much more likely to be involved in fatal accidents per mile travelled than other vehicles, as shown in Table 1 below. This disaggregates the data to avoid any distortions caused by some vehicles travelling further on a type of road which has fewer accidents overall. The table has now been repeated for the years 2008-2012 (the latest year available).

What the tables set out, for the different categories of road, is the proportion of all vehicle traffic on that road type that is HGVs (DfT statistics define this as over 3.5tonnes gross vehicle weight). It compares this to the proportion of accidents causing fatalities that HGVs are involved in, again for the different road types. Thus in Table 1 HGVs were 12.2% of vehicle traffic on Motorways, but were involved in 41% of accidents resulting in fatalities. These two percentages are used to show how much more or less likely HGVs were to be involved in fatal accidents compared to an the average for all vehicles.

Table 1
HGV traffic and fatal accidents by road type 2007

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 12.1 | 99.2 | 12.2% | 41.0% | 336.0% |
| A | 13.3 | 226 | 5.9% | 17.2% | 292.2% |
| Minor | 3.7 | 181.1 | 2.0% | 7.2% | 352.6% |

Source: TSGB 2007, Goods Vehicle Statistics 2007, Goods Vehicle Accidents and Casualties 2007, all DfT

Table 2 Updated using 2008 data
HGV traffic and fatal accidents by road type

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 12.1 | 100.1 | 12.1% | 36.7% | 303.6% |
| A | 12.9 | 222.8 | 5.8% | 17.8% | 306.9% |
| Minor | 3.7 | 185.9 | 2.0% | 7.2% | 361.8% |

Source: Road Statistics 2008, Tables 3.2 and 3.6, Road Freight Statistics 2008 Section 5, both DfT

**Table 3 Updated using 2009 data
 HGV traffic and fatal accidents by road type**

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 11.2 | 98.9 | 11.3% | 31.1% | 275.5% |
| A | 11.9 | 221.1 | 5.4% | 13.6% | 252.0% |
| Minor | 3.2 | 181.1 | 1.7% | 6.7% | 384.3% |

Source: Quarter 2 traffic report 2010, Road Freight Statistics 2009 Section 5, both DfT

**Table 4 Updated using 2010 data
 HGV traffic and fatal accidents by road type**

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 11.9 | 98.2 | 12.1% | 38.1% | 314% |
| A | 11.4 | 219.6 | 5.2% | 16.1% | 309% |
| Minor | 3.1 | 178.2 | 1.7% | 7.3% | 427% |

Source: Traffic statistics table TRA0104, Accident statistics Table RAS 30017, both DfT

**Table 5 Updated using 2011 data
 HGV traffic and fatal accidents by road type**

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 11.0 | 98.9 | 11.2% | 40.6% | 363% |
| A | 11.7 | 219.2 | 5.3% | 15.7% | 296% |
| Minor | 2.6 | 168 | 1.5% | 5.8% | 387% |

Source: Traffic statistics table TRA0104, Accident statistics Table RAS 30017, both DfT

**Table 6 Updated using 2012 data
 HGV traffic and fatal accidents by road type**

| <i>Traffic in billion veh kms</i> | HGV traffic | All motorised traffic | HGV % | % fatalities involving at least 1 HGV | Ratio of HGV to all motor vehicles |
|-----------------------------------|-------------|-----------------------|-------|---------------------------------------|---|
| Motorway | 10.9 | 99.8 | 10.9% | 52.3% | 480% |
| A | 11.7 | 217.3 | 5.4% | 18.1% | 335% |
| Minor | 2.4 | 167.0 | 1.4% | 7.2% | 514% |

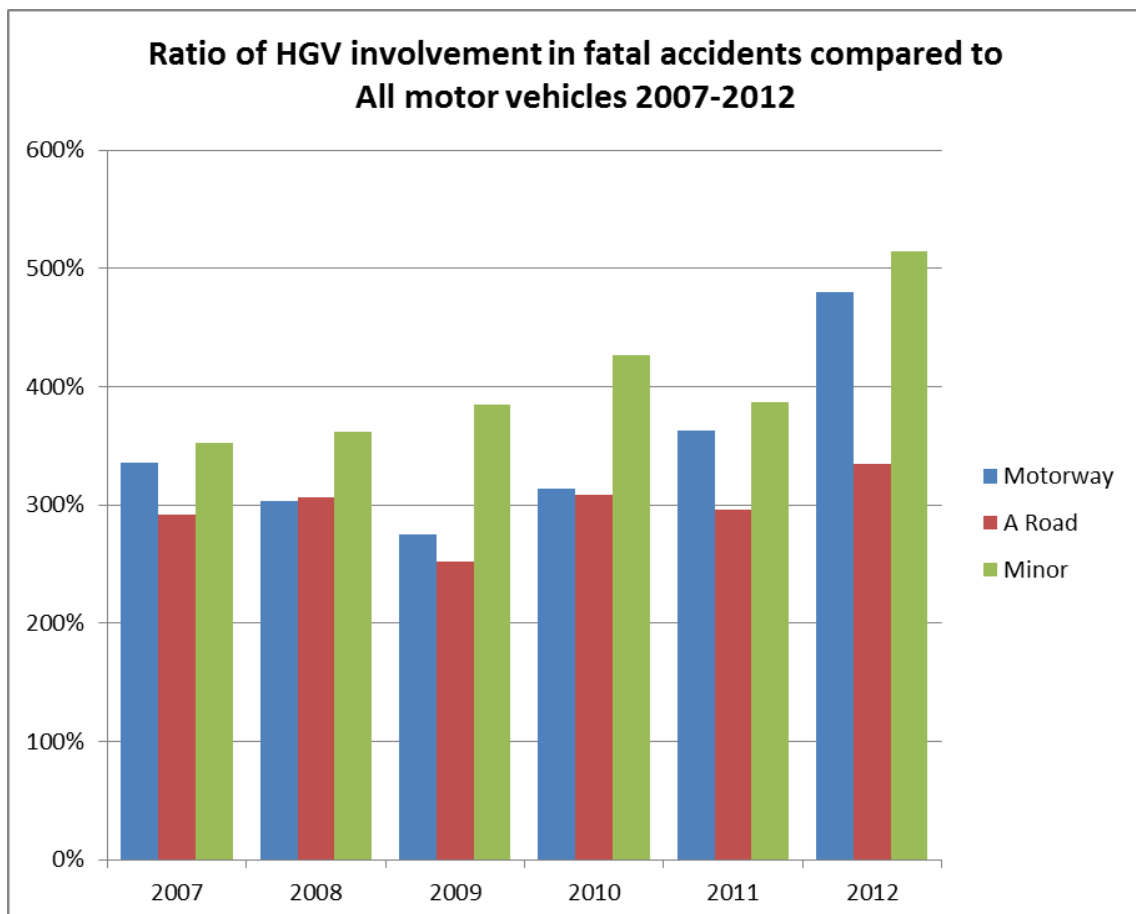
Source: Traffic statistics table TRA0104, Accident statistics Table RAS 30017, both DfT

Commentary

The aggregation of accident statistics can conceal real impacts, particularly for different types of accidents and types of road. It is to be expected that HGV accidents would show different patterns, in this case they are much more likely to be involved in fatal accidents than other vehicles because of their special characteristics, including size, construction and weight.

The original 2007 report explored the long term problem with HGVs involved in fatal accidents, when considered mile for mile on the same type of road. Variation in accident figures for any one year can be misleading so the building up of a time series has been important and this note uses the latest figures (2012), published by DfT in September 2013.

Looking at these figures, the improvement on motorways and A roads in 2009 was not continued in 2010 or 2011 and 2012 was the worst year in this data set so far. The ratio for minor roads was also the worst since 2007. Overall, HGVs remain significantly more likely to be involved in fatal accidents, mile for mile on the same type of road, than other vehicles. This is clear from the time series, shown in the chart below.



While the tables show the relative involvement of HGVs by type of road, the number of fatal accidents varies between road types. For reference, the numbers of fatalities

in 2012 are set out below. Thus motorways have fewer accidents fatalities per vehicle kilometre, including fatalities, partly because there are no cyclists or pedestrians, and partly due to the highway and junction design. Table also shows how the percentage for fatalities used in Tables 1 to 6 is derived.

Table 7 Numbers of fatal accidents 2012

| | HGV | All | HGV as % of total |
|----------|-----|-----|-------------------|
| Motorway | 46 | 88 | 52.3 |
| A Road | 175 | 967 | 18.1 |
| Minor | 50 | 699 | 7.2 |

Different types of HGVs

Further work should be possible to distinguish between different weight bands of HGVs, given the far higher dynamic forces in collisions which involve the heaviest HGVs. This would depend on reliable data on casualties and may require using a series of 3 to 5 years. Looking at all casualties would also reveal the different patterns of involvement, for example it is likely that fewer slight casualties involve HGVs. A look at KSI ratios for 2012 suggest that HGVs are still about twice as likely to be involved in accidents as the traffic percentage would suggest.

Conclusion

The overall conclusion is that there is a clear issue, as might be expected from the vehicle design and the forces involved, in terms of collisions involving HGVs which result in fatalities. The conclusion is that there is a different pattern of accidents which involve HGVs, and simple claims that they are “safer” than other vehicles are not supported by this analysis.

Further analysis would lead to definition of some of the HGV characteristics which were causing a disproportionate involvement in fatal accidents, and how to deal with them.