

Road freight statistics notes and definitions

1. Road Freight Surveys

- The Department for Transport runs three continuous road freight surveys:
 - The Continuing Survey of Road Goods Transport Great Britain (CSRGT GB). This survey measures the domestic activity of GB-registered heavy goods vehicles.
 - The Continuing Survey of Road Goods Transport Northern Ireland (CSRGT NI). This survey measures the domestic and international activity of NI-registered heavy goods vehicles.
 - The International Road Haulage Survey (IRHS). This survey measures the international activity of GB-registered heavy goods vehicles.

2. The Continuing Survey of Road Goods Transport Great Britain (CSRGT GB)

2.a Background

- The results in the domestic activity statistical release were derived from the CSRGT GB. This survey provides information on the domestic activity of GB-registered heavy goods vehicles over 3.5 tonnes gross vehicle weight (HGVs) working in the UK.
- The activity of Northern Ireland-registered HGVs, foreign-registered HGVs and freight carrying vehicles 3.5 tonnes gross vehicle weight or less (Light Goods Vehicles) are not measured by this survey.
- HGVs over 3.5 tonnes gross vehicle weight and taxed as goods vehicles account for over 90 per cent of all freight moved by road. There were around 390,000 of these vehicles in Q4 2010.

2.b CSRG T GB survey characteristics and response rates

- In 2010, the survey was based upon a sample of about 360 vehicles each week, a higher number than the figure of about 310 for 2009. The operator of the goods vehicle is asked to provide details of all domestic trips undertaken in one week; the domestic legs of any trips which start or end in a foreign country are also included.
- Table RFS0142 shows the survey response rate. This was 82 per cent in 2010, a slightly higher rate than in recent years.
- The sample of vehicles used in the CSRG T is selected from vehicle records maintained by the Driver and Vehicle Licensing Agency (DVLA). Prior to 2004, the sample was selected on a weekly basis from a sampling frame of vehicles that was updated weekly. From 2004, for practical and administrative reasons, the weekly sample has been selected from a sampling frame that is updated quarterly. A consequence of this is that the sampling frame becomes more out-of-date through the quarter, as vehicles are sold, scrapped, become unlicensed, etc. The returned weekly sample from 2004 onwards therefore also includes a higher proportion of forms for these vehicles, and therefore a smaller proportion of usable forms compared with 2003 and earlier years.
- Estimates of the total activity of the HGV population are derived by applying a grossing factor to the work done by each sampled vehicle. The mean of the previous end quarter and current end quarter figures are used to gross up results for each quarter. The grossing factors are calculated using the population of heavy goods vehicles for each quarter, from DVLA licensing records (the same records from which the sample is drawn).
- To ensure comparability with estimates for 2003, a further adjustment has been made to the grossing procedure from 2004 to allow for the change in sample selection methodology described above. For each stratum within which a sample is selected, the grossing factor is calculated as N/n , where N is the vehicle population (including unlicensed and scrapped vehicles) and n is the returned sample of forms used for analysis. The change in sample selection methodology has no effect on the calculation of the grossing factor. However, because it results in a greater proportion of unlicensed or scrapped vehicles in the returned sample it is applied to a smaller proportion of usable forms than in the previous year. Since 2004, it is therefore necessary to adjust the grossing factors to allow for this. The adjustment is calculated as the number of expected usable forms in 2004 based on the proportion of usable forms in the 2003 sample, divided by the achieved number of usable forms in 2004.

This produces a proportion of 1.0314 which is used to adjust the grossing factors.

2.c Sample design and sampling errors

- The CSRGT surveys goods vehicles and collects data about one week of activity from each vehicle in the sample. The sample is spread evenly over the year so that the sample is 'self weighting' in respect of seasonal effects.
- The vehicles covered by the survey are goods vehicles over 3.5 tonnes gross vehicle weight. The normal maximum weight limit for goods vehicles is 40 tonnes gross (44 tonnes for vehicles with 'road friendly' suspension, increased from 41 tonnes on 1 February 2001), though some exceptions are made for haulage of abnormal loads. This wide range in size and carrying capacity means that important estimates, such as road freight moved (tonne kilometres), can vary considerably from vehicle to vehicle. In order to make the best use of the sample size available, the questionnaires are not simply sent to a random selection of the whole vehicle population. Instead, random samples are selected from each of the various vehicle groups. This is known as stratified sampling.

2.d Stratified Sampling

- The vehicle population has natural groupings arising from the administrative rules governing the construction and use of goods vehicles. These vehicle groups (shown below) are based on ten gross weight bands and characterised by different types of freight activity.

Rigid HGVS: Up to 7.5 tonnes; Over 7.5 to 15 tonnes; Over 15 to 18 tonnes; Over 18 to 26 tonnes; Over 26 tonnes

Articulated HGVs: Up to 26 tonnes; Over 26 to 34 tonnes; Over 34 to 38 tonnes; Over 38 to 40 tonnes; Over 40 tonnes

- The sample is allocated to each of the ten groups based on the strategy of:
 - optimising the estimates of total freight activity by sampling in proportion to how much each group contributes to the overall road freight activity; and
 - because the above results in quite large sample errors for the lighter rigid groups, there is some reallocation with the aim of bringing those errors within plus or minus 10 per cent.
- The sample sizes so derived for each vehicle group are then divided equally over each

region to ensure adequate coverage for each area.

- The sample sizes used to calculate sampling error in Table RFS0143 are for the number of forms returned for vehicles that had worked during the survey week. In previous years, the sample sizes also included forms returned for vehicles which had not worked.
- There is proportionately more variation in estimates that are based on groups with smaller sample sizes (for example, for quarterly data and data for some disaggregations of vehicle type). Users should be aware of this when analysing data in some of the tables in this publication.

2.e Revisions to the CSRGT GB for 2006 to 2009

- Users should note that it has been necessary to revise the statistics from the CSRGT GB for years 2006 to 2009 for this publication.
- As described in 2.d above, the population of licensed goods vehicles is used to weight the CSRGT GB survey results to produce an estimate of the total domestic activity of GB-registered HGVs working in the UK.
- In December 2010, the vehicle licensing statistics were revised when a number of vehicles which were initially described as 'licensed' were reallocated to the 'SORN' (Statutory Off Road Notice) category.
- The vehicle licensing data were revised from quarter 1 2006 up to quarter 2 2010. Prior to 2006, vehicles where the licensed status was unclear were treated slightly differently and only a very small number were misallocated.
- The revisions had a net effect of reducing the licensed vehicle stock figures by between 260,000 and 300,000 vehicles a quarter (about 0.8 per cent).
- However, the revisions had a more significant effect on the HGV population, reducing them by about 3.5 per cent. These revisions have had a direct impact on the weights used to generate national freight statistics from the CSRGT GB.
- As the weighting factors are calculated by dividing the population by the sample size in each sampling strata, the revisions have affected the factors in two ways:
 - By reducing the population of HGVs used to calculate weights for the CSRGT GB

- By reducing the sample size used to calculate weights for the CSRGT GB. Vehicles that were reallocated when the population figures were revised should not have been sampled in the CSRGT GB.
- Revised populations in each CSRGT GB strata have been made available for 2008 Q3 to 2010 Q4. Revised populations in the CSRGT strata for 2006 Q1 to 2008 Q2 have been estimated based on the overall reduction in the goods vehicle population for each quarter in these periods.
- For 2007 Q3, 2008 Q3 and 2009 Q2 to 2009 Q4, information has been made available to calculate revised CSRGT GB sample sizes for each strata (i.e. SORN vehicles that were reallocated and should not have been sampled have been removed). The reduction in the sample size for other quarters where detailed information was not available has been estimated based on the information available for 2007 Q3, 2008 Q3 and 2009 Q2 to 2009 Q4.
- The table below shows the percentage change from the previous figures to the revised figures for tonnes lifted, tonnes moved and vehicle kilometres.

	Tonnes lifted (millions)	Tonne kilometres (billions)	Vehicle kilometres (millions)
Previous figures			
2006	1,813	156	22,289
2007	1,869	161	22,445
2008	1,734	152	21,171
2009	1,422	132	18,846
2010	-	-	-
Revised figures			
2006	1,776	152	21,848
2007	1,822	157	21,900
2008	1,668	146	20,395
2009	1,356	125	18,024
2010	1,489	139	18,769
Percentage difference			
2006	-2.0	-2.0	-2.0
2007	-2.5	-2.6	-2.4
2008	-3.8	-3.9	-3.7
2009	-4.7	-5.0	-4.4
2010	-	-	-

- Figures for 2010 are on a consistent basis to the revised 2006 to 2009 CSRGT figures. Statistics prior to 2006 have not been revised.
- Statistics from the CSRGT NI and IRHS (road freight surveys described further on in the

Notes and Definitions) are not affected by the revisions.

- More information on the revisions to the vehicle licensing statistics is available [here](#).

3. Continuing Survey of Road Goods Transport Northern Ireland (CSRGT NI)

3.a. Background

- The CSRGT NI measures the activity of HGVs registered in Northern Ireland.
- The CSRGT NI is administered in the same way as the CSRGT GB with two key differences between the two surveys. Firstly, the Department for Regional Development in Northern Ireland supply the vehicles to be sampled and the vehicle populations for the purposes of grossing. Secondly, the survey form covers both domestic and international journeys made by Northern Irish registered vehicles. These are mostly trips made to and from the Republic of Ireland.
- Prior to 2004 there existed one survey to capture international haulage by vehicles registered in Great Britain and Northern Ireland. This single survey was subsequently split into two surveys (the IRHS and the CSRGT (NI)) from 2004 onwards.
- However, journeys made solely between the Republic of Ireland and Northern Ireland have been excluded from the published statistics.
- Statistics for Northern Ireland-registered vehicles from this survey are available from the Department for Regional Development at the following link:
www.drdni.gov.uk/index/statistics/stats-catagories/ni_transport_statistics.htm.

4. The International Road Haulage Survey (IRHS)

4.a Background

- The IRHS covers international work undertaken by GB-registered powered goods vehicles travelling on roll-on/roll-off ferries or the Channel Tunnel. Hauliers operating internationally are asked to provide details of all trips leaving the UK on specified days. The chosen days depend on haulier size (determined by the number of annual trips made) and vary in frequency from one day each month for big hauliers to 4 weeks' coverage once every two years for the smallest hauliers, in all cases amounting to approximately 1 day in 25.

-
- The results for 2009 were based upon a sample of 4,700 round trips and have been grossed up to the total number of GB-registered vehicles travelling on ferries or the Channel Tunnel.
 - Journeys that were made solely between the Republic of Ireland and Northern Ireland are excluded from the statistics.
 - Statistics derived from the Department for Transport's International Road Haulage Survey (IRHS) for 2004 onwards were revised last year following a methodological review of grossing procedures by the Office for National Statistics under a Quality Improvement Fund (QIF) Project.

4.b Revisions to the IRHS

- In 2010, the Department took the opportunity to review and revise the grossing procedures through the QIF project which was commissioned by the DfT in response to a UK Statistics Authority (UKSA) assessment of Road Freight statistics.
- Road freight statistics had passed the assessment process in January 2010 and this confirmed the designation of the outputs as National Statistics. The UKSA assessment included a requirement to provide more information about data quality and suggested including brief explanations as to why particular choices were made when writing up methodological details for publications. The investigation into the grossing methods described helped address this requirement.
- The full report on the grossing revisions is available [here](#).
- As a result of the revised grossing methodology, IRHS data for 2004 onwards are not directly comparable to those prior to 2004, and users should treat comparisons between these time periods with caution.

5. Activity of foreign-registered HGVs in the UK

- The statistics on the activity of foreign-registered HGVs in the UK have been taken from the Eurostat Transport Statistics Database [here](#).
- Eurostat collects data from EU member states under the Council Regulation (EC) number 1172/87 on statistical returns in respect of the carriage of goods by road. The latest data available from Eurostat at the time of preparation of this bulletin were for 2010.

6. Vehicle groupings

- The vehicle groupings used in the statistical releases attempt to reflect operational characteristics as follows:

Rigid vehicles

Up to 7.5 tonnes

7.5 to 17 tonnes

18 tonnes is the weight limit for two axle vehicles.

17 to 25 tonnes

Prior to 1st January 1993 the weight limit for three axle vehicles was 24.39 tonnes. From 1st January 1993 this was raised to 26 tonnes if the vehicle is fitted with 'road friendly' suspension, otherwise the limit is 25 tonnes.

Over 25 tonnes

32 tonnes is the weight limit for four axle vehicles.

Articulated vehicles

Up to 33 tonnes

36 tonnes is the weight limit for four axle vehicles.

Over 33 tonnes

The gross vehicle weight limit for five axle vehicles is 40 tonnes. The limit for six axle vehicles fitted with 'road friendly' suspension was increased from 41 tonnes to 44 tonnes from February 2001.

All vehicles

Over 3.5 tonnes

An Operator's Licence is required for those using vehicles with a gross weight of more than 3.5 tonnes.

- Note: From 2004, the survey sample has been selected within new weight groups to reflect current trends in vehicle type, weight and legislative groups (see notes above). However, for comparability with earlier years, in this report, analyses have continued to be presented on the basis of the above weight groups.

7. Road freight survey questionnaires

- The questionnaires and guidance notes for the Continuing Survey of Road Goods Transport (both Great Britain and Northern Ireland) and the International Road Haulage Survey can be found at the following links on the Department for Transport website:
 - [Continuing Survey of Road Goods Transport Great Britain](#)
 - [Continuing Survey of Road Goods Transport Northern Ireland](#)
 - [International Road Haulage Survey](#)

8. Definitions used in road freight statistics publications

Average length of haul	Tonne kilometres divided by tonnes lifted.
Average load	Tonne kilometres divided by loaded kilometres.
Great Britain	England, Scotland and Wales but excluding Northern Ireland.
Goods lifted	Measured in tonnes (see below).
Goods moved	Measured in tonne kilometres (see below).
Goods vehicles in this publication	Vehicles of more than 3.5 tonnes gross plated weight but excluding certain special categories such as recovery vehicles, mobile cranes etc., i.e. heavy vehicles which do not carry goods.
Gross vehicle weight	The maximum permissible weight of the vehicle and its load.
Hire or reward	Goods vehicle operators who carry goods for other people for hire or reward.
Journey	A complete international round-trip, starting and finishing in Great Britain (used in the IRHS). A journey can consist of a number of consignments.
Own account	Goods vehicle operators who carry goods only in the course of their own trade or business.
Plated weight	The same as gross vehicle weight (see above): when goods vehicles are first registered an official plate is issued showing the maximum permissible gross vehicle weight.
Public haulage	The same as hire or reward (see above).
Tonnes lifted	The quantity derived by adding together the weight of all the loads carried.
Tonne kilometres	A measure of freight moved which takes account of the weight of the load and the distance through which it is hauled. For example, a load of 26 tonnes carried a distance of 100 kilometres represents 2,600 tonne kilometres.

9. Commodity groupings

Group	Commodity classification detail	NST codes¹
Agricultural Products	Bulk cereals, potatoes, other fresh and frozen fruit and vegetables. Sugar (inc. beet). Live animals and animal foods.	01-03, 06, 08, 11, 17
Beverages	Alcoholic and non-alcoholic (except tea, coffee and milk).	12
Other foodstuffs	Meat, fish, dairy products, cereals, other foods (inc. tea and coffee). Tobacco.	13,14,16,18
Wood, timber and cork		05
Fertiliser	Natural and chemical	71,72
Sand, gravel and clay		61
Other crude minerals	Stone, chalk and other minerals	62,63,65
Ores	Ferrous and non-ferrous ores. Iron and steel waste	41,45,46
Crude materials	Wool, cotton, man-made fibres and other textile materials. Hides, skins, rubber. Paper (inc. pulp and waste)	04,09,84
Coal and Coke	Includes lignite and peat	21-23
Petrol and petroleum products	Includes crude oil	31-34,83
Chemicals		81,82,89
Cements	Cement and lime	64
Other building materials	Bricks, etc. concrete, glass, glassware and pottery	69,95
Iron and steel products	Pig iron, crude steel (sheets, bars etc.) Unwrought and non-ferrous alloys	51-56
Other metal products n.e.s.	Structural parts etc.	94
Machinery and transport equipment	Vehicles, tractors, electrical and non-electrical machines	91-93
Miscellaneous manufactures	Leather, textiles and clothing n.e.s. Other manufactured articles n.e.s.	96,97
Miscellaneous articles n.e.s.	Arms and ammunition; commodities n.e.s. Unknown commodities; packing containers, packaging only, pallets, parcels, household waste	70,73,88,98,99

¹ Nomenclature Statistique de Transport is the classification of commodities for transport statistics used in the European Communities.