



2013-14 Annual Statistical Release

Rail Infrastructure, Assets and Environment

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Infrastructure on the railways, average age of rolling stock and sustainable development

2013 – 14 Annual (1 April 2013 to 31 March 2014)

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Introduction

This release contains information on rail infrastructure, assets and environment in Great Britain with the latest data in this release referring to 2013-14 (1 April 2013 to 31 March 2014). The data covered within the release are:

- Infrastructure on the railways – the number of kilometres of route open for passenger and freight traffic, the length of route which is electrified and the number of passenger stations on the Great Britain rail network
- Average age of rolling stock – the average age of rolling stock including all rail vehicles leased to franchised train operating companies by rolling stock leasing companies (ROSCOs) sourced from the Department for Transport (DfT)
- Sustainable development – Carbon dioxide (CO₂) emissions for passenger and freight operators. Passenger data is normalised to show the average CO₂ emission per passenger kilometre. Freight data is normalised to show the average CO₂ emission per net tonne kilometre of freight.

For more detail on data collection and the methodology used to calculate the data within this release please see the accompanying rail infrastructure, assets and environment quality report which can be found at: [Quality Reports](#).

This is an annual release and the latest data in this release refer to 2013-14, 1 April 2013 to 31 March 2014. All the data contained and referred to within this release can be accessed via the ORR [Data Portal](#).

National Statistics

The United Kingdom Statistics Authority (UKSA) designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007, signifying compliance with the Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs;
- are well explained and readily accessible;
- are produced according to sound methods; and
- are managed impartially and objectively in the public interest.

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

For more details please contact the Statistics Head of Profession Fazilat Dar at Fazilat.Dar@orr.gsi.gov.uk or on 020 7282 3705 or contact rstats@orr.gsi.gov.uk

Summary of key results

- Passenger and freight route open for traffic in 2013-14 was 15,753 kilometres, the same as the previous year.
- The total length of electrified route has slowly increased since the start of the time series. In 2013-14 5,268 kilometres of passenger and freight route was electrified, an increase of 0.1% on 2012-13 and 38.3% increase since 1985-86.
- The number of passenger stations has also gradually increased during the time series. In 2013-14 there were a total of 2,550 stations, an increase of 0.7% compared to the previous year and a 6.9% rise from the start of the time series.
- Since the beginning of the time series (2000-01 Q2) the average age of rolling stock at the National level has decreased by 1.32 years. In the Long Distance and London and South East sectors the average age has decreased by 3.18 and 2.95 years respectively, but has risen by 3.81 years in the Regional sector. In 2013-14 16 of the franchised train operators' average age of rolling stock increased by exactly one year on 2012-13, indicating that their fleet remains unchanged. Southern and TransPennine Express trains' average age of rolling stock decreased compared to the same time last year, indicating the introduction of newer rolling stock.
- Passenger train CO₂ emissions per passenger kilometre in 2013-14 were 44.8 grams, a 4.9% decrease on the 2012-13 value. Freight train CO₂ emissions per freight tonne kilometres in 2013-14 were 25.9 grams, an 8.1% decrease on 2012-13.

1. Infrastructure on the railways

About infrastructure on the railways

Infrastructure on the railways shows the characteristics of the infrastructure of the rail network, presenting data on the number of kilometres of route open for passenger and freight traffic, the length of route which is electrified and the number of passenger stations on the Great Britain rail network.

There are breaks in the time series between 2004-05 and 2006-07 due to data cleansing by Network Rail and changes in methodology. Further details on this can be found in the infrastructure, assets and environment [Quality Report](#).

1.1 Infrastructure on the railways

- The route open for traffic in 2013-14 was 15,753 kilometres, the same as the previous year and a 0.4% decrease since the last break in the time series in 2007-08.
- The length of electrified route has slowly increased since the start of the time series. In 2013-14 5,268 kilometres of passenger and freight route was electrified, an increase of 3km (0.1%) from 2012-13; 33.4% of the total route length is electrified. The increase in electrified route length is likely to be due to the completion of the first phase of the North West electrification project between Newton-le-Willows and Castlefield junction in December 2013¹ and electrification work being done as part of the Edinburgh-Glasgow Improvement Project².
- The decline in the total length of route open is likely to be due to passenger and freight lines closing, possibly more rural and freight only lines, for example the formal closure of North Woolwich station and the line to Stratford in December 2006. The length of route open for freight traffic only has decreased to 1,249 kilometres in 2013-14; a 6.1% decrease since 2007-08. The decrease in freight only route is offset in part by Network Rail's re-opening of disused lines; for example the East London branch line formerly part of the London Underground network which is now part of the London Overground and maintained by Network Rail.
- The number of passenger stations has also gradually increased during the time series. In 2013-14 there were a total of 2,550 stations, an increase of 0.7% compared to the previous year and a 6.9%

¹ <http://www.networkrailmediacentre.co.uk/News-Releases/Network-Rail-delivers-first-phase-of-North-West-electrification-1f44.aspx>

² <http://www.railwaygazette.com/news/infrastructure/single-view/view/cumbernauld-electrification-completed.html>

rise from the start of the time period³. The number of stations is also expected to increase further from 2014 onwards under the New Station Fund⁴.

Annual infrastructure on the railways data is presented here: [Data Portal](#)

A list of pre-created infrastructure on the railways tables available on the data portal is presented in Annex 2.

Revisions: There have been no revisions to the previously published dataset.

Details of any future revisions will be found at: [Revisions Log](#)

³ This data has been marked as provisional, we are seeking clarification from Network Rail on the increase in station numbers

⁴ The fund is part of a £37 billion worth of investment spend from 2014 to 2019, <https://www.gov.uk/government/news/new-144-million-railway-station-to-be-built-in-devon>

2. Average age of rolling stock

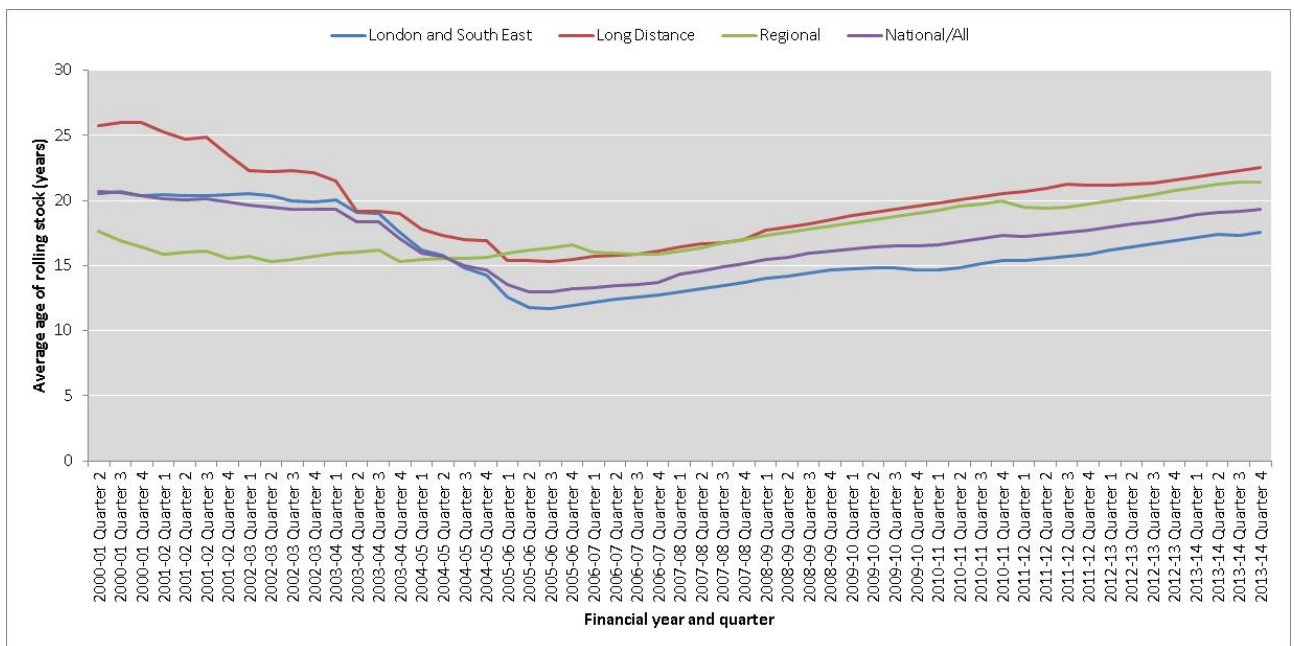
About average age of rolling stock

Average age of rolling stock includes all rail vehicles leased to franchised train operating companies by rolling stock leasing companies (ROSCOs) and is used as an indicator of comfort on the railways.

If the fleet remains unchanged, we expect the average age to increase by 0.25 years each quarter. Should the increase for a TOC be less than 0.25 years this would indicate that some new or younger rolling stock has been introduced or some older stock has been phased out. Any increase greater than 0.25 years would indicate that some older stock has been put into service or some younger stock has been removed. A vehicle drops out of the data when its lease either expires or is terminated.

2.1 Average age of rolling stock by sector

Average age of rolling stock by sector – chart
Great Britain data 2000-01 up to 2013-14



- Since the beginning of the time series (2000-01 Q2) the average age of rolling stock at a National level has decreased by 1.32. In the Long Distance and London and South East sectors the average age has decreased by 3.18 and 2.95 years respectively, but has risen by 3.81 years in the Regional sector.

- In 2013-14 16 of the franchised train operators' average age of rolling stock increased by one year on 2012-13, indicating that their fleet has remained unchanged. The average age of rolling stock for South West Trains increased by 1.03 compared to the same time last year. This is likely due to the introduction of two five-car Class 458/5 electric multiple-units rebuilt from former Gatwick Express vehicles⁵.
- Southern and TransPennine Express trains' average age of rolling stock decreased by 0.82 and 0.55 respectively compared to the same time last year. For Southern this due to the introduction of a new fleet of Class 377 trains in 2013⁶ and for TransPennine Express the introduction of new Class 350 Desiro trains between December 2013 and March 2014⁷.
- Rolling stock procurements have significantly increased fleet size and reduced rolling stock age. While the average age of rolling stock has increased since 2005-06, this trend will reverse during CP5 because of the introduction of new electric vehicles for the Intercity Express, Thameslink and Crossrail programmes. This will both increase fleet size and decrease average age of rolling stock⁸.

Annual average age of rolling stock data is presented here: [Data Portal](#)

A list of pre-created average age of rolling stock tables available on the data portal is presented in Annex 2.

Revisions: There have been no revisions to the previously published dataset.

Details of any future revisions will be found at: [Revisions Log](#)

⁵ <http://www.railwaygazette.com/news/single-view/view/south-west-trains-prepares-to-introduce-longer-trains.html>

⁶ <http://www.southernrailway.com/mobile/news/southerns-new-train-enters-service/>

⁷ <http://www.tpexpress.co.uk/about-us/new-trains/new-train-faqs/>

⁸ [GB rail: dataset on financial and operational performance](#)

3. Sustainable development

About sustainable development

Sustainable development data is an environmental indicator showing normalised CO₂ emissions from traction energy for passenger and freight trains. Passenger data has been normalised to show the average CO₂ emission per passenger kilometre and freight data has been normalised to show the average CO₂ emission per net tonne kilometre of freight.

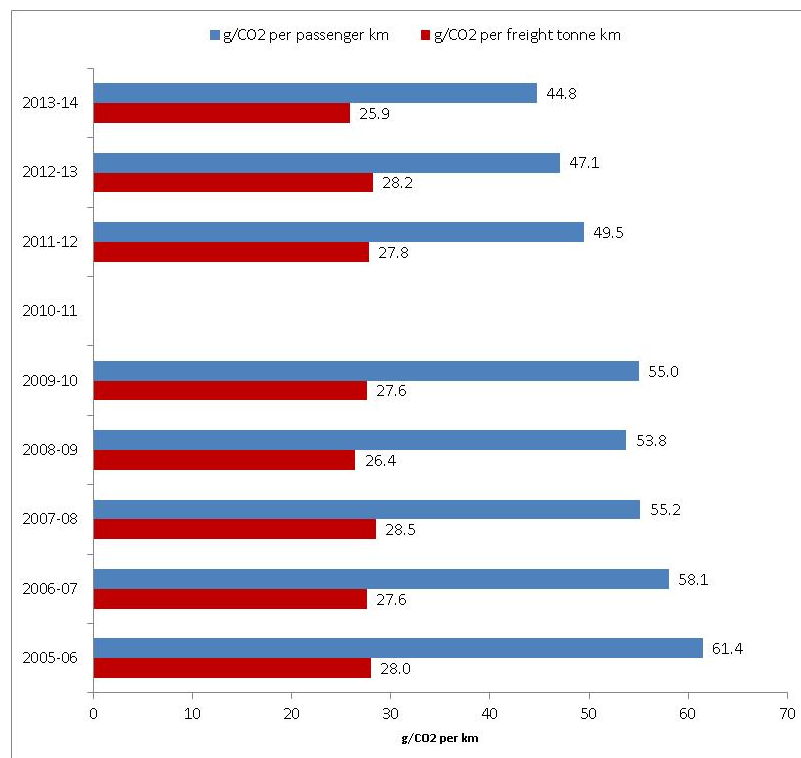
CO₂ emissions are calculated from actual and estimated data for energy consumption, for 2013-14 energy consumption had to be estimated for Colas Rail, Devon & Cornwall Railways, Europorte Channel, Grand Central and Heathrow Express

There was no data for 2010-11 due to a change in the data collection process, consequently comparisons to CO₂ emissions in earlier years should be made with caution. Please see the [quality report](#) for more information.

3.1 Sustainable development

Sustainable development – chart

Great Britain data 2005-06 up to 2013-14 (no data for 2010-11)



- Both passenger and freight CO₂ emissions per passenger kilometres/net freight tonne kilometres have been decreasing each year since 2005-06.
- Passenger train CO₂ emissions per passenger kilometre in 2013-14 were 44.8 grams; compared to 2012-13 this is a 4.9% reduction in emissions per passenger kilometre. The decrease in emissions could be due to a greater number of electric trains and the use of newer and more efficient rolling stock which produce less carbon emissions compared to diesel powered or older trains. Passenger kilometres have been increasing faster than timetabled train kilometres⁹; this trend could also be contributing to the decrease in CO₂ emissions per passenger kilometre.
- Freight train CO₂ emissions per freight tonne kilometres in 2013-14 were 25.9 grams, 8.1% reduction compared to 2012-13.
- New environmental legislation came into force in 2012 setting tougher emission targets for diesel engines. Coupled with rising fossil fuel prices this may provide Network Rail with stronger business cases for further electrification of the network. As a consequence the CO₂ emissions per train kilometre may decrease further in the coming years¹⁰.

Annual sustainable development data are presented here: [Data Portal](#)

A list of pre-created sustainable development tables available on the data portal is presented in Annex 2.

Revisions: There have been no revisions to the previously published dataset.

Details of any future revisions will be found at: [Revisions Log](#)

⁹ [Passenger rail usage statistical release](#)

¹⁰ [Network Rail strategic business plan](#)

Annex 1 – Statistical release themes and publication timetable

Statistical release	Data	Publication schedule
Passenger and Freight Rail Performance - Quarterly	Public performance measure Freight performance measure Cancellations and significant lateness	Q2: 13th November 2014 Q3: 5th February 2015 Q4: 7th May 2015
Passenger Rail Usage – Quarterly	Passenger kilometres Passenger journeys Passenger revenue Timetabled train kilometres	Q2: 11th December 2014 Q3: 3rd March 2015 Q4: 4th June 2015
Freight Rail Usage - Quarterly	Freight moved Freight lifted Freight delay per 100 train kilometres Freight market indicators (Q4 only)	Q2: 27th November 2014 Q3: 19th February 2015 Q4: 21st May 2015
Passenger Rail Service Satisfaction - Quarterly	Complaints Complaints comments received by London TravelWatch and Passenger Focus National rail enquiries	Q2 :18th December 2014 Q3: 19th March 2015 Q4: 18th June 2015

Annex 2 – List of pre-created performance reports available on the ORR Data Portal

All data tables can be accessed on the data portal free of charge. The ORR data portal provides on screen data reports, as well as the facility to download data in Excel format and print the report. We can provide data in csv format on request.

Infrastructure on the railway

- Infrastructure on the railways – [Table 2.52](#).

Average age of rolling stock

- Average age of rolling stock by sector – [Table 2.30](#).
- Average age of rolling stock by train operating company – [Table 2.31](#).

Sustainable development

- Sustainable development: Estimates of normalised passenger and freight CO2 emissions – [Table 2.100](#).
- Sustainable development: Estimates of passenger and freight energy consumption and CO2 emissions – [Table 2.101](#).

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