

Freight rail usage and performance

January to March 2023

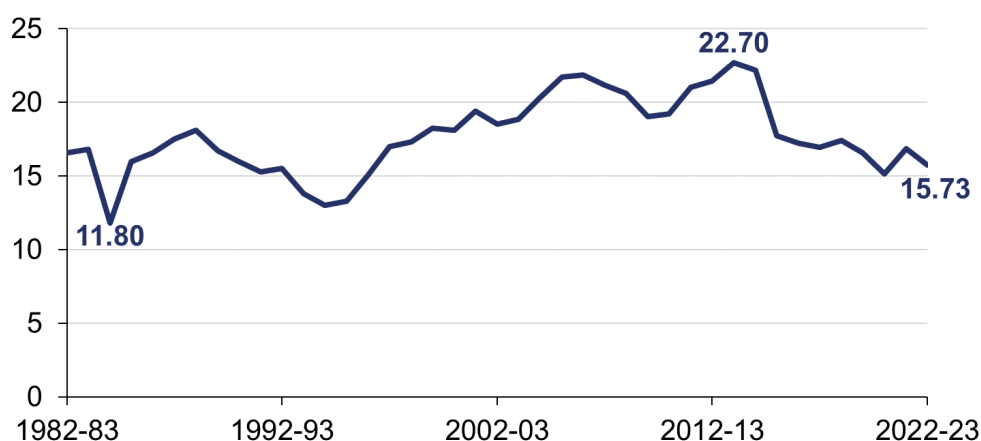
1 June 2023

In this release, freight rail usage and performance levels in the latest year (1 April 2022 to 31 March 2023) are compared with the previous year. Freight rail usage and performance levels in the latest quarter (1 January to 31 March 2023) are compared with the same quarter in the previous year. All metrics have been affected by strike action.

Total **freight moved** was **15.73 billion net tonne kilometres** in the latest year, a fall of 7% compared with the previous year.

Figure 1 Freight moved has generally decreased over the last decade

Freight moved (billion net tonne kilometres), Great Britain, annual data, April 1982 to March 2023 (Table 1310)



Total **freight lifted** was **72.2 million tonnes** in the latest year, a reduction of 10% compared with the previous year.

The proportion of freight trains arriving within 15 minutes, as measured by the **Freight Delivery Metric**, was **86.0%** in the latest year. This is the lowest level of freight performance since the time series began in 2013.

All data tables, a quality and methodology report and an interactive dashboard associated with this release are published on the [Freight rail usage and performance](#) page on the data portal. Key definitions are in Annex 1 of this release.

Background:

This quarterly statistical release contains information on the usage and performance of rail freight in Great Britain.

The statistics cover **freight moved** and **freight lifted (by commodity)**, **Freight Delivery Metric (FDM)**, **freight delays**, **freight train kilometres** and **freight vehicle kilometres (by operator)**, and **freight train movements**.

Sources: Network Rail, freight operators.

Latest quarter:

1 January to 31 March 2023

Contents:

Freight moved – p2
 Freight lifted – p6
 Freight Delivery Metric – p8
 Freight delay per 100 tkm – p10
 Freight train kilometres – p11
 Freight vehicle kilometres – p13
 Freight train movements – p14
 Annexes – p15

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Next publication:

21 September 2023

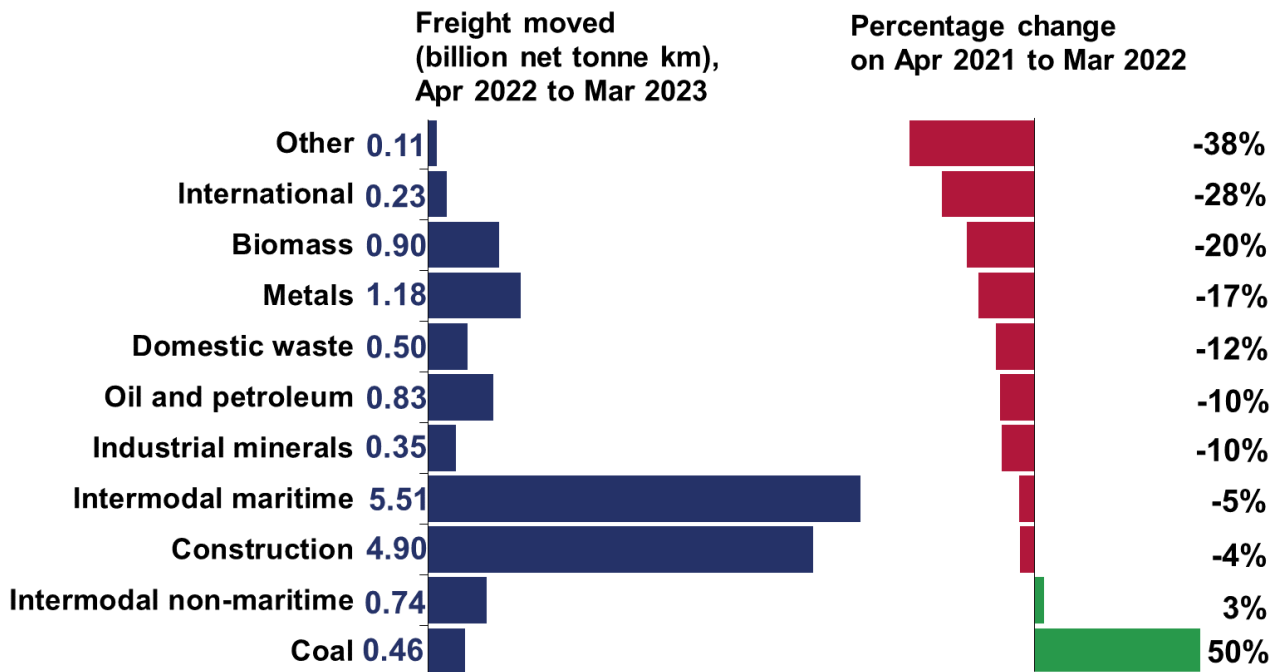


1. Freight moved

April 2022 to March 2023 annual

Figure 1.1 Most commodities saw a reduction compared with a year ago

Freight moved (billion net tonne kilometres) by commodity, Great Britain, April 2022 to March 2023 and change compared with April 2021 to March 2022 (Table 1310)



Freight moved in Great Britain dropped to 15.73 billion net tonne kilometres in April 2022 to March 2023. This was a decrease of 7% compared with a year ago. Most commodity groups had a reduction in freight moved volumes compared with the previous year. [Strike action](#) meant that there were fewer available days on which freight trains could run. It is likely that freight was transported by road instead on these dates.

Intermodal maritime decreased by 5% compared with the previous year. Aside from the pandemic, it was the lowest volume for nine years. It had the largest share (35%) of all freight moved between April 2022 and March 2023.

Construction, which has the second largest share of all freight moved (31%), saw a decrease of 4%. Despite the reduction, it was the second greatest volume recorded since the time series began in April 1998. There were very high levels of deliveries to [HS2 construction sites](#) in the latest quarter which strengthened this trend.

Volumes of metals dropped by 17%. There were 1.18 billion net tonne kilometres moved, making it the lowest value since the start of the time series. Metals have a share of 8% of all freight moved.

Biomass volumes fell by 20%. It was the lowest value seen for five years. There has been a reduction in biomass being needed for bio-fuel production as a result of the [growing levels of renewable energy generation](#).

Oil and petroleum saw a reduction of 10%. Aside from the pandemic, it saw the lowest volume since the time series began.

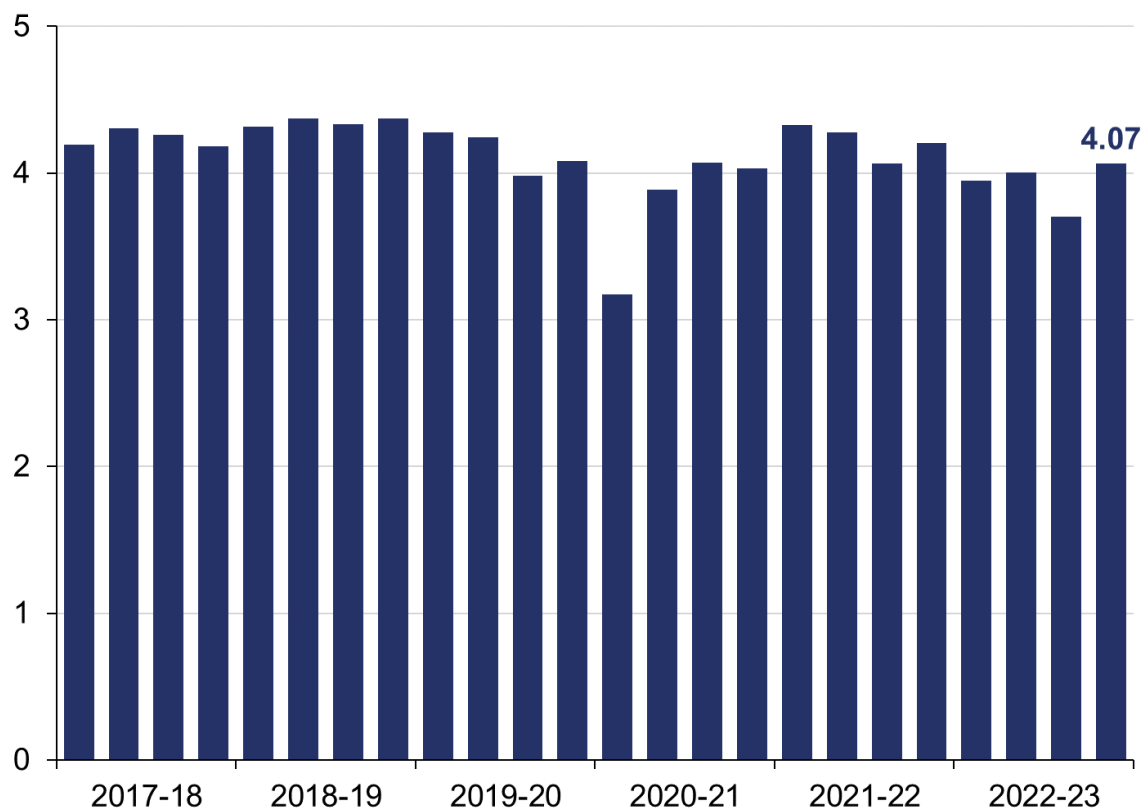
Intermodal non-maritime increased by 3% compared with the previous year. It was one of only two commodities groups where volumes have risen.

Volumes of coal saw the largest percentage increase, increasing by 50%. It is the highest volume recorded for four years. [Rising gas prices](#) and the [National Grid preparing for power shortages in the winter](#) have led to greater quantities of coal being transported.

January to March 2023 quarter

Figure 1.2 This quarter saw the most freight moved of any quarter this year but remained lower than the same quarter in the previous year.

Freight moved (billion net tonne kilometres), Great Britain, quarterly data, April 2017 to March 2023 (Table 1310)



The total volume of freight moved was 4.07 billion net tonne kilometres in the latest quarter (1 January to 31 March 2023). This was a 3% decrease on the same quarter the previous year (1 January to 31 March 2022). Most commodity groups saw a fall in freight moved volumes compared with the same quarter the previous year.

There were fewer days available to transport freight due to strike action across the industry impacting each month in the quarter. Freight trains were unable to run for a full day (or at all) when the [Network Rail signallers' strikes](#) took place, an issue that was heightened by strike dates falling on consecutive days. It is notable that there were fewer strike days in comparison with October to December 2022.

Intermodal maritime saw a negligible change on the same quarter the previous year. As the commodity with the largest share of freight moved, it accounts for over a third of all freight moved between January and March. Deep Sea container shipping has been returning to a more stable pattern.

Construction made up a third of all freight moved in the quarter, which is the second largest share of all freight moved. Freight volumes in this sector increased by 6%, reaching 1.35 billion net kilometres, the highest value since the time series began in April 1998. Deliveries to [HS2 construction sites](#) were at a high level and general market demand recovered strongly, probably driven in part by the completion of construction projects by the end of the financial year.

Volumes of metals fell by 17% compared with the previous year. There were 0.28 billion net tonne kilometres, making it the lowest January to March quarter since the start of the time series. Metals account for 7% of all freight moved.

Biomass volumes fell by 16%. The [winter weather was mild](#), resulting in lower levels of biomass being needed for bio-fuel production.

Oil and petroleum volumes reduced by 19%. [High fuel prices](#) depressed demand for transport fuels and for heating oil. Oil and petroleum had the second largest decrease, after the 'Other' category which fell by 61%.

Intermodal non-maritime had the largest increase, rising by 18%. This was boosted by new daily [domestic intermodal services from Highland Spring](#) at Blackford, near Gleneagles, and for [MSC from Hams Hall](#) to Scotland.

Domestic waste saw a decrease of 17%. [Internet shopping for non-food consumer goods remains down](#) on levels seen during and immediately after the pandemic, with a consequent reduction in packaging waste.

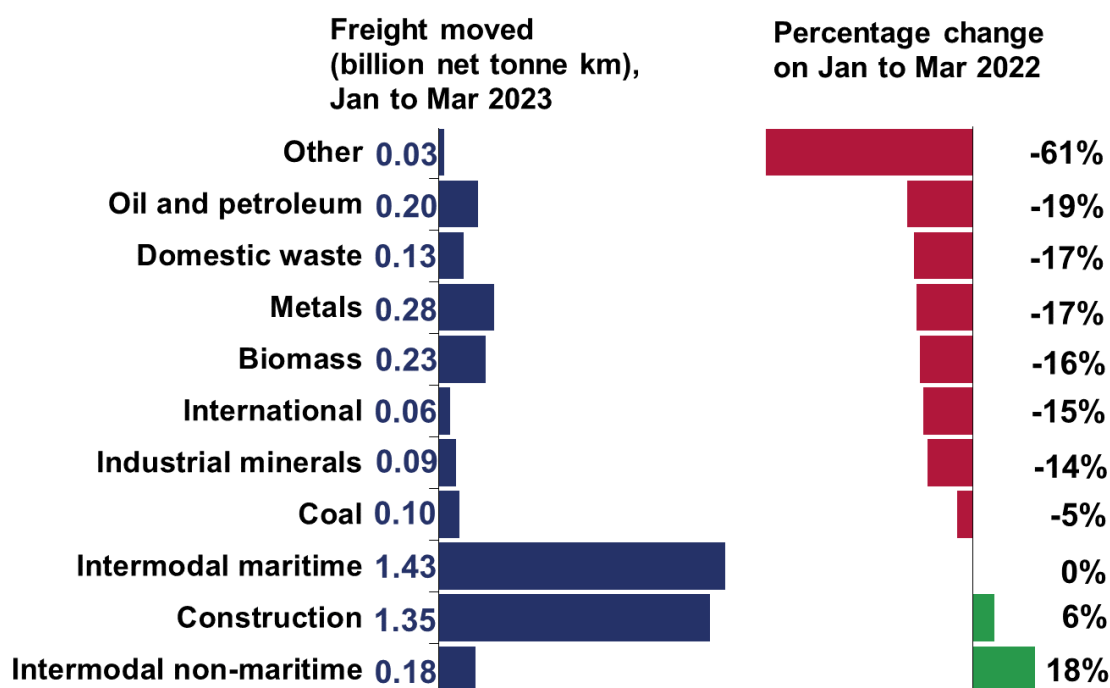
Volumes of coal fell by 5%. Imports of [coal for National Grid security purposes](#) were down, following the accrual of coal before the winter. The winding down of production at the [UK's last opencast site near Merthyr Tydfil](#) has also contributed to the downward trend.

Industrial minerals volumes reduced by 14% compared with the previous year. This reflects the impact of [high energy costs](#) on industrial production.

International volumes fell by 15%. 0.06 billion net tonne kilometres were recorded, making it the lowest January to March value since the start of the time series.

Figure 1.3 Intermodal non-maritime and construction have increased compared with the same quarter a year ago

Freight moved (billion net tonne kilometres) by commodity, Great Britain, January to March 2023 and change compared with January to March 2022 (Table 1310)



2. Freight lifted

April 2022 to March 2023 annual

There were 72.2 million tonnes of freight lifted in April 2022 to March 2023. This was a decrease of 10% compared with a year ago.

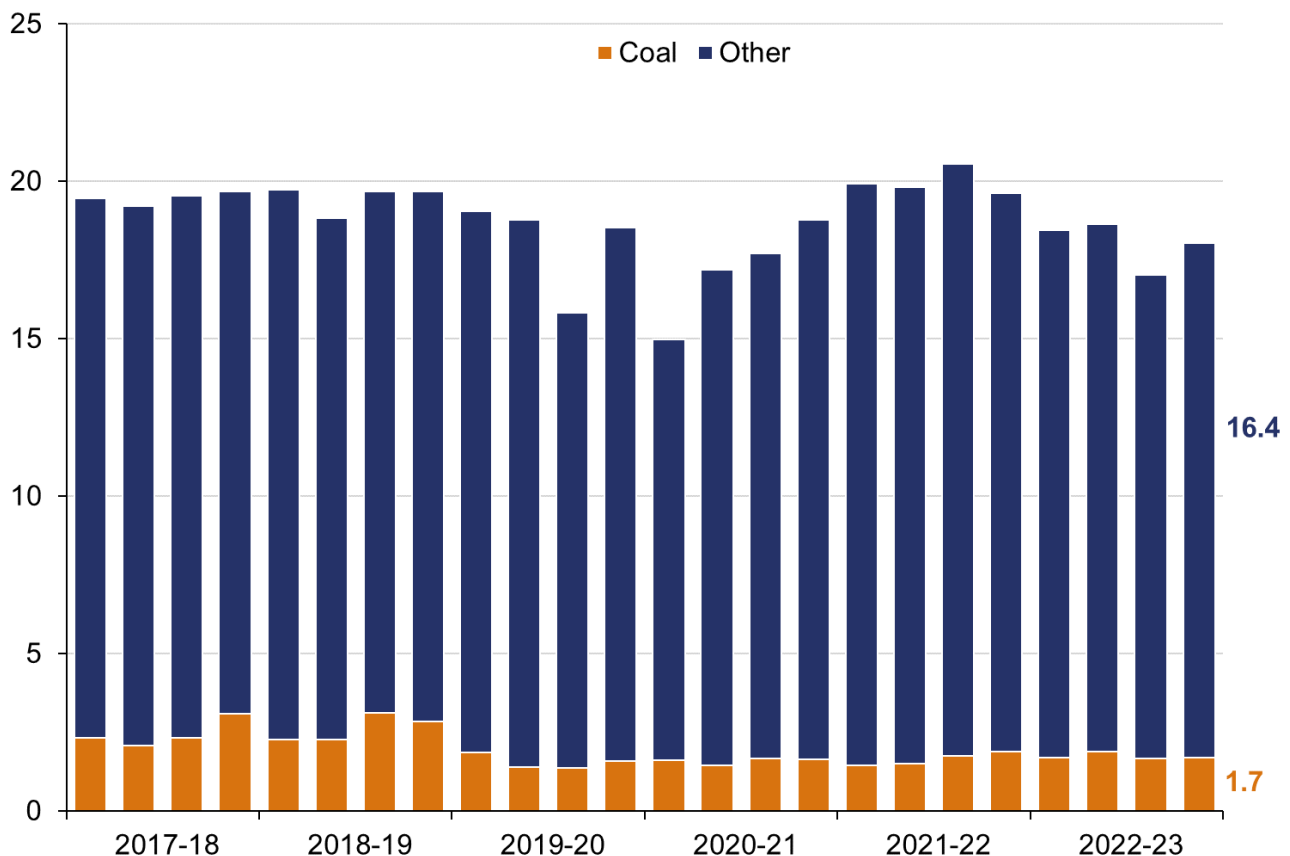
Other freight lifted accounts for 90% of the total amount of freight lifted, which amounts to 65.2 million tonnes in the latest year. It decreased by 11% compared with the previous year.

Coal freight lifted was 6.9 million tonnes in the latest year, an increase of 11% compared with a year ago. Stocks of coal were accrued at the Ratcliffe, West Burton and Drax power stations as a [contingency in the event of winter power shortages](#). Coal freight lifted has increased steadily over the previous three years.

January to March 2023 quarter

Figure 2.1 Total freight lifted in the latest quarter was lower than any other January to March quarter over the previous five years

Freight lifted (million tonnes) by commodity (coal and other), Great Britain, quarterly data, April 2017 to March 2023 (Table 1315)



The total amount of freight lifted in the latest quarter was 18.0 million tonnes. It decreased by 8% compared with the same quarter the previous year. It was the lowest January to March quarter since the start of the time series in April 1996.

Other freight lifted was 16.4 million tonnes, which was 8% lower compared with the previous year. It was the lowest January to March quarter for nine years.

The amount of coal lifted was 1.7 million tonnes. It has fallen by 10% compared with the same quarter the previous year.

3. Freight Delivery Metric (FDM)

April 2022 to March 2023 annual

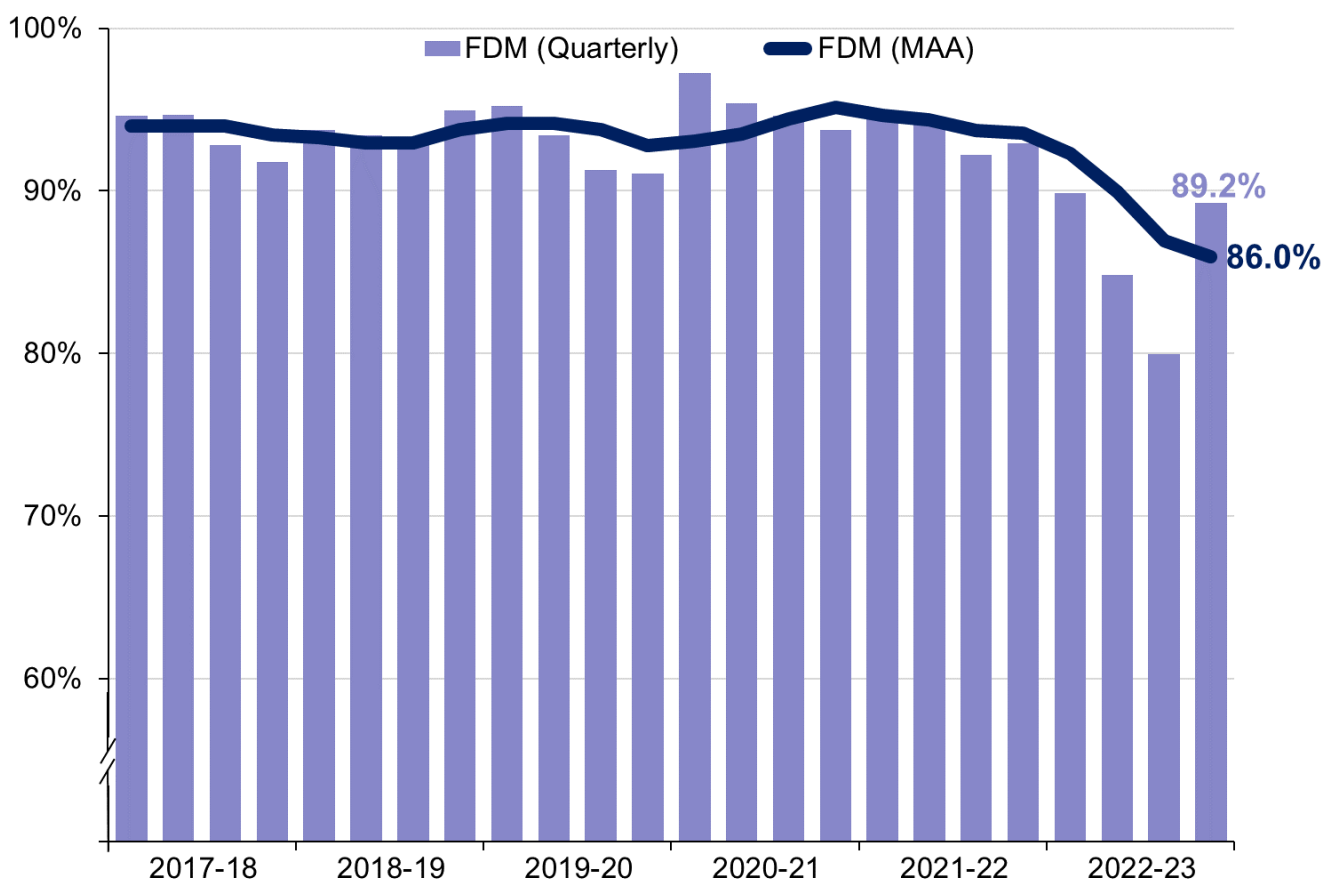
Freight punctuality, as measured by the Freight Delivery Metric, was 86.0% between April 2022 and March 2023. It was 7.6 percentage points (pp) lower than the previous year. This was the lowest FDM Moving Annual Average (FDM MAA) since the time series began in January 2014. Freight punctuality has continued to deteriorate every quarter since the FDM MAA peaked at 95.2% in April 2020 to March 2021.

To calculate FDM during the strike action it was necessary to estimate the number of freight trains that should have run on each of the days. This was done by taking the average of trains run on the same day of the week in each of the previous four weeks. Public holidays were excluded from this calculation.

January to March 2023 quarter

Figure 3.1 The FDM for the latest quarter represents the worst January to March freight punctuality since the start of the time series

Freight Delivery Metric (quarterly and moving annual average), Great Britain, quarterly data, April 2017 to March 2023 (Table 1320)



The Freight Delivery Metric was 89.2% in the latest quarter, which is the poorest January to March punctuality since the time series began in April 2013. It was 3.7 percentage points lower than the same quarter the previous year. Freight punctuality has improved since October to December 2022, with the FDM rising by 9.3 pp.

Data for the Freight Delivery Metric by Region (FDM-R) by railway period is available on the data portal in [Table 1324](#).

4. Freight delay per 100 train kilometres

April 2022 to March 2023 annual

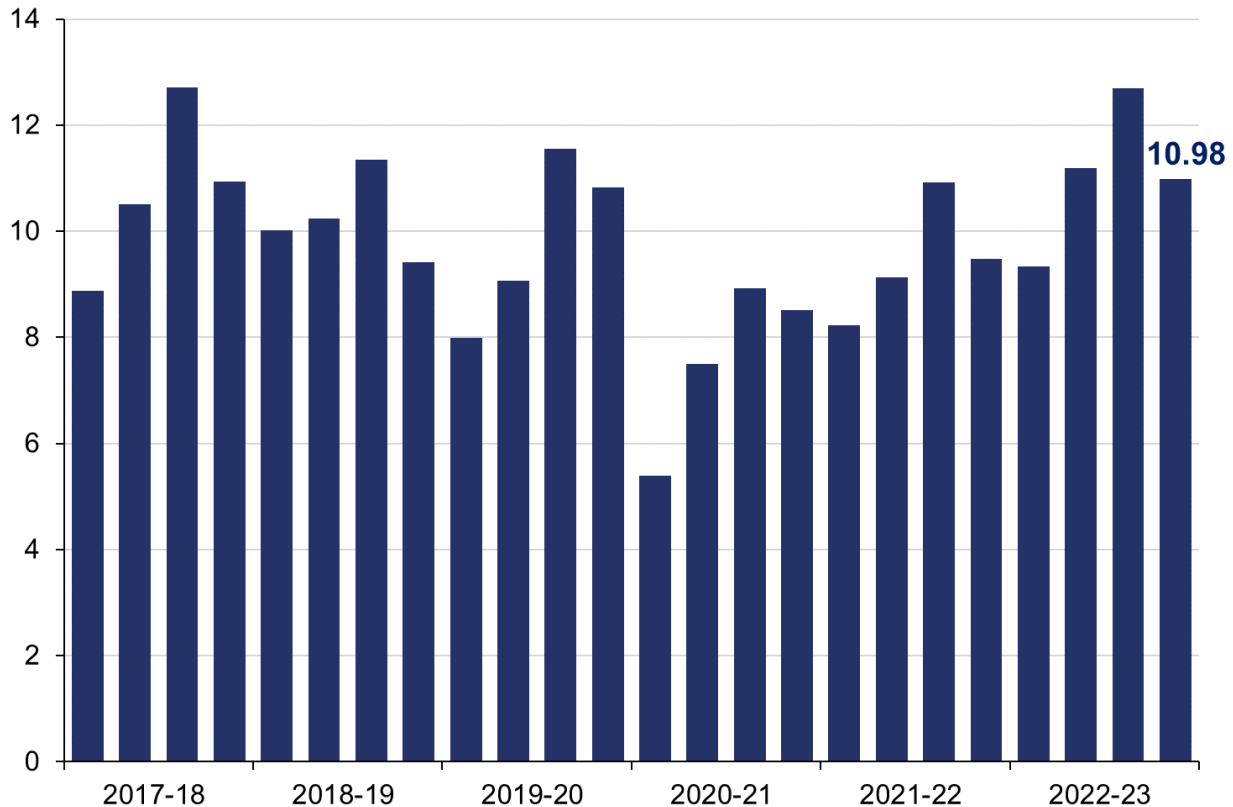
Freight delay per 100 train kilometres rose to 11.05 minutes in the year to March 2023. This was a deterioration of 17% compared with a year ago; and an absolute increase of 1.61 minutes per 100 train kilometres. It is the poorest level of freight delay in eight years.

January to March 2023 quarter

Freight operators experienced 10.98 minutes of delay per 100 train kilometres in the latest quarter. This was 16% higher (i.e. worse) than the same quarter the previous year. Freight delay in the latest quarter was the worst January to March quarter since January to March 2015.

Figure 4.1 Freight delay in the latest quarter was worse than any other January to March quarter in the last five years

Freight delay per 100 train kilometres, Great Britain, quarterly data, April 2017 to March 2023 (Table 1325)



5. Freight train kilometres

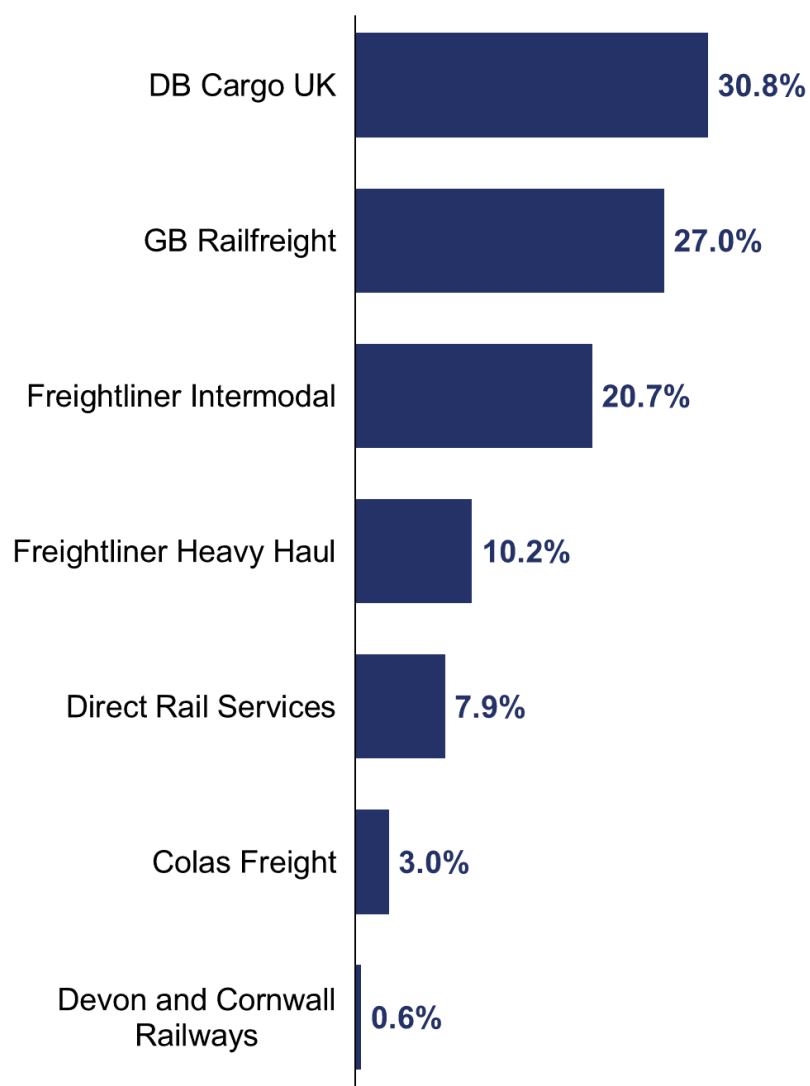
April 2022 to March 2023 annual

Freight train kilometres across Great Britain fell by 1.90 million to 31.87 million between April 2022 and March 2023, a decrease of 6% compared with a year ago.

The operator with the largest share of train kilometres is DB Cargo UK with 30.8%. This has fallen from 34.1% last year.

Figure 5.1 DB Cargo UK and GB Railfreight make up over half of the share of freight train kilometres

Proportion of freight train kilometres by operator, Great Britain, annual data, April 2022 to March 2023 (Table 1333)



January to March 2023 quarter

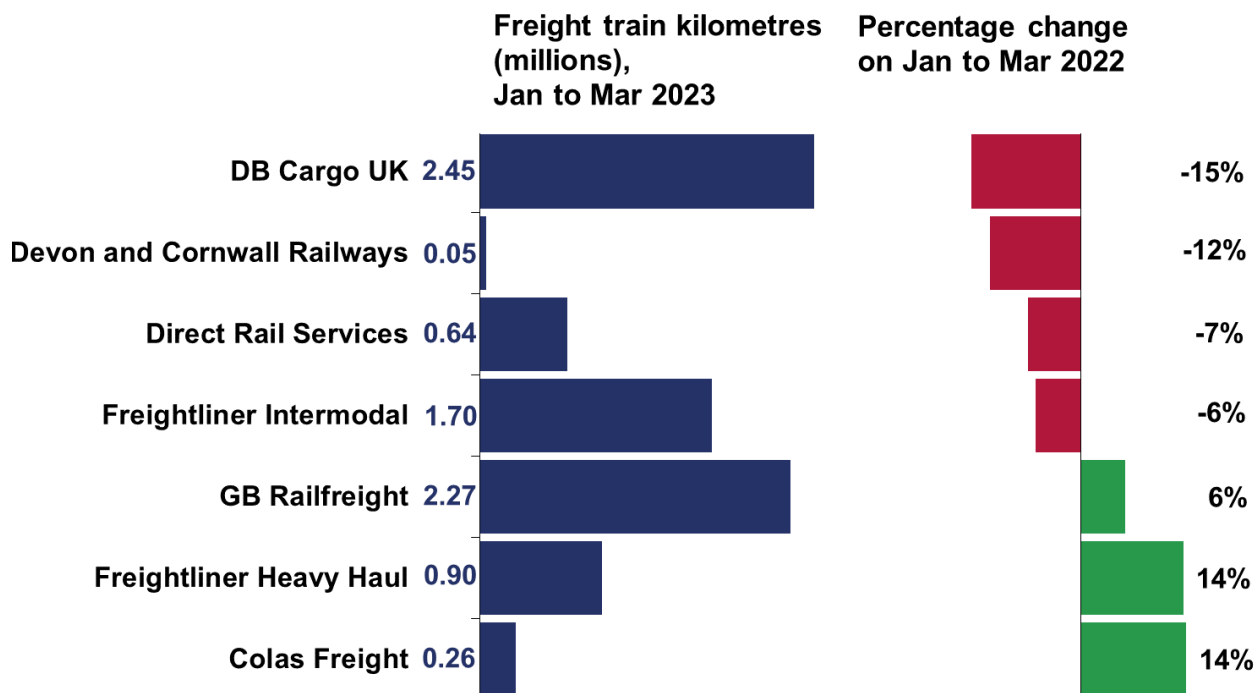
In the latest quarter, 8.27 million freight train kilometres were recorded. This was 4% lower than the same quarter the previous year.

Three operators had increases in freight train kilometres compared with a year ago. The largest increases were for Colas Freight and Freightliner Heavy Haul, both rising by 14%.

DB Cargo UK (down 15%) and Devon and Cornwall Railways (down 12%) were the operators with the largest percentage decrease in freight train kilometres compared with the same quarter the previous year.

Figure 5.2 Colas Freight and Freightliner Heavy Haul had similar increases in freight train kilometres

Freight train kilometres (millions) by operator, Great Britain, January to March 2023 and change compared with January to March 2022 (Table 1333)



Data on the breakdown of freight train kilometres by traction type (electric or diesel) is available on the data portal in [Table 1333](#).

6. Freight vehicle kilometres

April 2022 to March 2023 annual

Freight vehicle kilometres fell by 35.03 million to 700.94 million between April 2022 and March 2023, a decrease of 5% compared with a year ago.

GB Railfreight and Freightliner Intermodal both have the largest share of vehicle kilometres, each with a share of 28%.

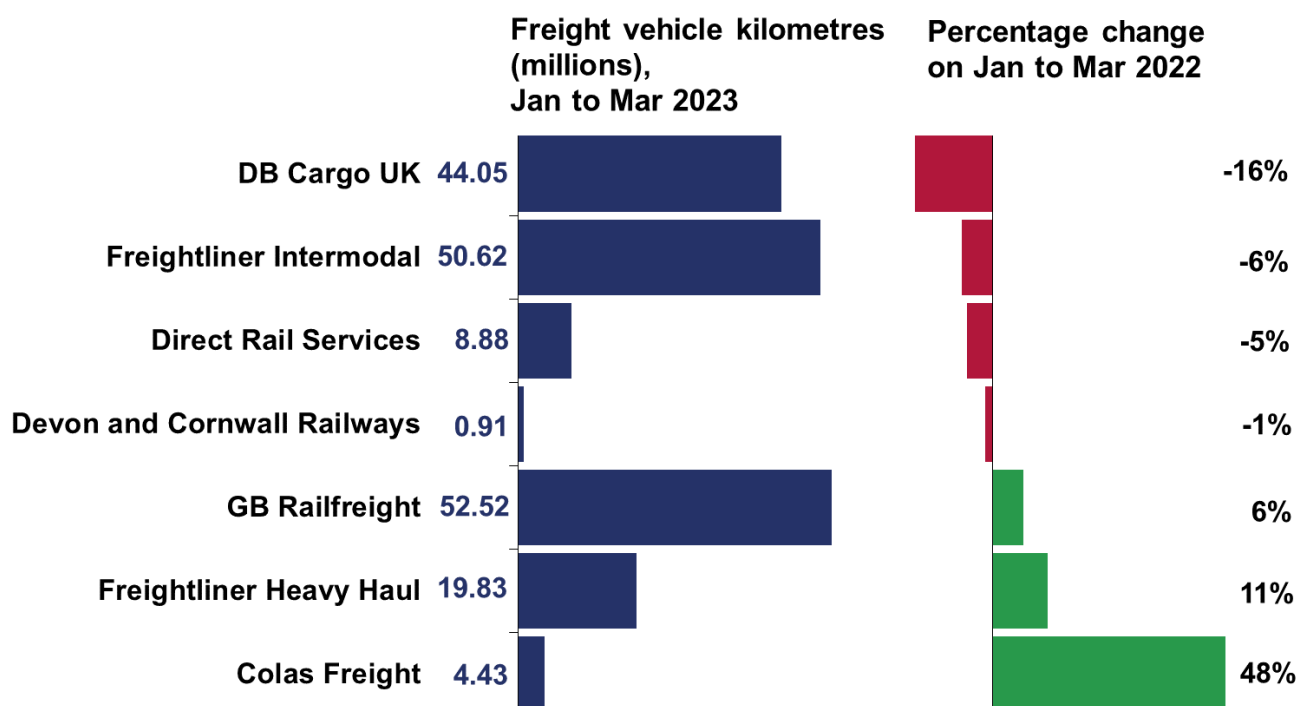
January to March 2023 quarter

Freight operators recorded 181.24 million freight vehicle kilometres in the latest quarter. It decreased by 3% compared with the same quarter the previous year.

Colas Freight had the largest increase in freight vehicle kilometres (up by 48%) and DB Cargo UK had the largest decrease (down by 16%).

Figure 6.1 The freight vehicle kilometres for Colas Freight increased by almost half

Freight vehicle kilometres (millions) by operator, Great Britain, January to March 2023 and change compared with January to March 2022 (Table 1343)



Data on the breakdown of freight vehicle kilometres by traction type (electric or diesel) is available on the data portal in [Table 1343](#).

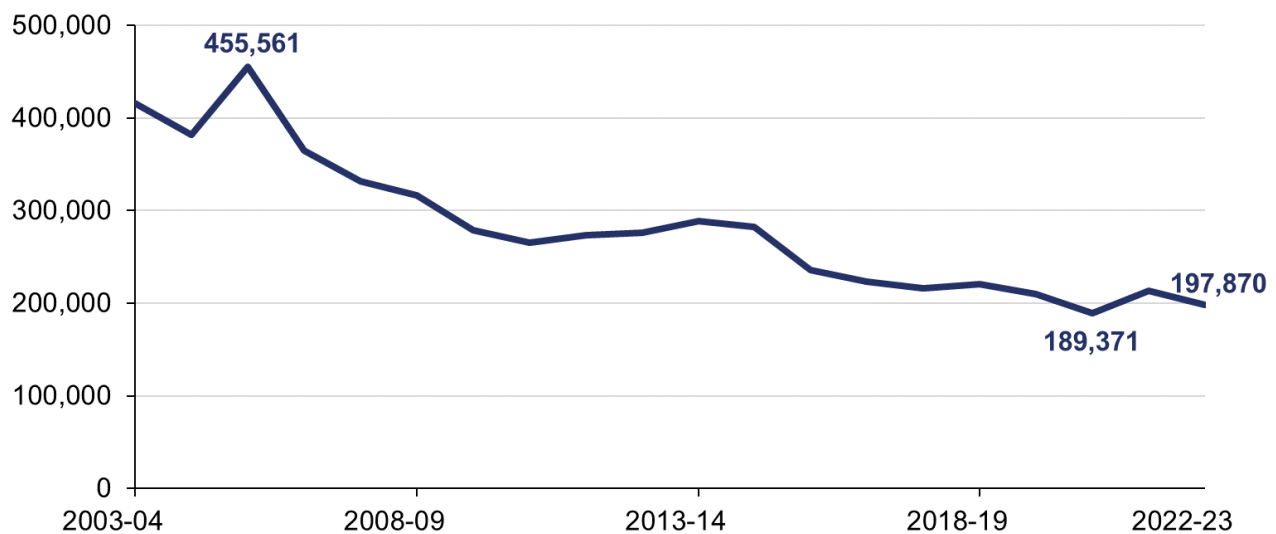
7. Freight train movements

April 2022 to March 2023 annual

There were 197,870 freight trains that ran on the mainline network in April 2022 to March 2023. This was a reduction of 7% compared with the previous year.

Figure 7.1: The number of freight trains running fell to under 200,000

Freight trains run, Great Britain, annual data, April 2003 to March 2023 (Table 1330)



Data is not currently available for rail freight market share (Table 1350) and impact on road haulage (Table 1340). We are working with our data suppliers to address this and hope to update in the next quarterly release.

8. Annexes

Annex 1 – Definitions

- **Freight moved** measures the amount of freight moved on the railway network, taking into account the weight of the load and the distance carried. It is measured in net tonne kilometres.
- **Freight lifted** is the mass of goods carried on the rail network measured in tonnes, excluding the weight of the locomotives and wagons. Unlike freight moved it takes no account of the distance travelled.
- **Freight Delivery Metric (FDM)** measures the percentage of commercial freight services that arrive at their planned destination within 15 minutes of their booked arrival time, or with less than 15 minutes of delay caused by Network Rail or another operator that is not a commercial freight operator. *A higher score indicates better performance.*
- **Freight Delivery Metric by Region (FDM-R)** is derived from FDM for each Network Rail Region.
- **Moving annual average (MAA)** reflects the proportion of trains that met FDM in the past 12 months. In the final quarter of the year (January to March), the MAA also represents the FDM for the financial year.
- **Freight delay per 100 train kilometres** is a normalised measure of delay experienced by freight operators. It is calculated from the total delay experienced by all GB freight operators divided by their train mileage. Freight train mileage can fluctuate depending on demand so a normalised measure allows for comparison over time regardless of changing levels of freight traffic on the network. *A lower score indicates better performance.*
- **Freight train kilometres** is the actual kilometres travelled by freight operators on all mainline infrastructure, terminals and yards. The data is sourced from Network Rail's Track Access Billing System (TABS). The data in the table covers electric, diesel and all traction. Competition between freight operators means we would expect a greater level of variation in mileage from year to year than in the passenger market.

- **Freight vehicle kilometres** is the actual vehicle kilometres travelled by freight operators on all mainline infrastructure, terminals and yards. This is calculated by multiplying the number of rail vehicles (e.g. coaches) by the distance travelled. A train with a locomotive and four carriages travelling one kilometre will generate one **train kilometre** and five **vehicle kilometres**. The data is sourced from Network Rail's Track Access Billing System (TABS). The data in the table covers electric, diesel and all traction. Competition between freight operators means we would expect a greater level of variation in mileage from year to year than in the passenger market.
- **Freight train movements** measures the number of freight trains run on the mainline rail network. The data is sourced from Network Rail annually and covers only trains that are chargeable. Each freight train is designated into a chargeable or non-chargeable category. Non-chargeable categories include empty trains to/from depots, operators moving equipment to/from site for Network Rail engineering work and unplanned train schedules (i.e. last minute).

Further information on each of these measures and other definitions can be found in the [Freight quality and methodology report](#).

Annex 2 – Quality and methodology

Data sources and methodology

Most of the quarterly data, and annual data on freight train movements, is sourced from Network Rail, with the exception of freight lifted data. This data is sourced directly from the seven largest freight operators (DB Cargo UK, Freightliner Intermodal, Freightliner Heavy Haul, GB Railfreight, Direct Rail Services, Colas Freight, and Devon and Cornwall Railways).

Annual data used to calculate rail freight impact on road haulage and rail freight market share is sourced from Department for Transport. This is included in the final quarter of the financial year (January to March) releases only. These have not been updated in this release due to the data not being available

To provide more comprehensive coverage of the freight market, estimates of freight lifted have been calculated for Devon and Cornwall Railways (April 2011 onwards) and Colas Freight (April 2010 to March 2020). From April 2020, Colas Freight are providing actual freight lifted data, but Devon and Cornwall Railways will continue to be estimated in future releases. These estimates are based on calculating the number of freight train movements in a quarter for each operator (estimated from their actual train mileage data) and multiplying that by the average tonnes lifted per train for the latest full year, at a national level.

Network Rail provides data to ORR within 21 days of the end of each of the 13 railway reporting periods (each period lasts four weeks). The quarterly data in this release sourced from Network Rail are derived by splitting the periodic data according to the number of days of the period that fall within each quarter.

The latest freight train kilometres data, freight vehicle kilometres data and freight delay per 100 train kilometres data should be treated as provisional. Freight operators can provide Network Rail with additional data (e.g. cancellations) and Network Rail may re-attribute delays over time.

Further development of these statistics

Our freight lifted statistics are currently disaggregated between Coal and Other. Following the slowdown in Coal traffic, this split has limited value. We are investigating the possibility of providing a more disaggregated set of commodities in future.

Revisions

There have been revisions to previously published data:

- Table 1310: The quarterly total for 'Other' in October to December 2022 has been revised, which also caused the total to be revised.
- Table 1320: There has been an update to the source data behind April to June 2021. This has resulted in a small revision to the FDM for April to June 2021 and to every FDM moving annual average between April 2021 to March 2022.
- Table 1324: The source data was revised for April 2021 to March 2022 Period 02 and Period 05, which caused revisions in the respective periodic FDM. It also caused revisions in the FDM moving annual average from April 2021 to March 2022 Period 02 though to April 2022 to March 2023 Period 04.

Details of previous revisions can be found in the [revisions log](#).

Further information on data sources, quality, and the methodology used to calculate the data within the release can be found in the [Freight quality and methodology report](#).

How these statistics can and cannot be used



- Measuring rail freight volumes and market share by commodity over time
- Comparing distances run by freight operators and over time
- Monitoring the impact of Network Rail and passenger operator caused delay on freight punctuality
- Comparing the size of the rail freight market relative to other modes



- Using freight trains ran as an indication of freight volumes due to [train lengthening schemes](#) and more efficient use of the network
- Using freight train kilometres by operator as a proxy for market share of volumes due to the variation in freight train distances
- Identifying origin and destination of freight flows
- Estimating freight revenues (refer to [rail industry finance](#))
- Estimating freight emissions (refer to [rail emissions](#))

Annex 3 – List of data tables associated with this release and other related statistics

Data tables

All data tables can be accessed on the [data portal](#) free of charge in OpenDocument Spreadsheet (.ods) format. We can also provide data in csv format on request.

All tables associated with this release can be found under the Data tables heading at the bottom of the [Freight rail usage and performance](#) page.

Freight usage

- Freight moved by commodity (quarterly) – Table 1310
- Freight moved by commodity (periodic) – Table 1314
- Freight lifted (quarterly) – Table 1315

Freight performance

- Freight Delivery Metric (FDM) (quarterly) – Table 1320
- Freight Delivery Metric by Network Rail Region (FDM-R) (periodic) – Table 1324
- Freight delays per 100 train kilometres (quarterly) – Table 1325

Freight traffic

- Freight trains run (annual) – Table 1330
- Freight train kilometres by operator (quarterly) – Table 1333
- Freight vehicle kilometres by operator (quarterly) – Table 1343

Other related statistics

Passenger rail usage statistics are published on the [Passenger rail usage page](#) on the data portal.

Passenger rail performance statistics are published on the [Passenger rail performance page](#) on the data portal.

Estimates of passenger and freight energy consumption and carbon dioxide equivalent (CO₂e) emissions are published on the [Rail emissions page](#) on the data portal.

The Department for Transport (DfT) also publishes some [multimodal freight statistics](#) as part of the [Transport Statistics Great Britain publication](#).

European comparisons

Due to differences in how freight punctuality is measured in other countries, opportunities to make direct comparisons with statistics in this release are limited.

Data from other European countries is published in the [IRG-Rail Tenth Annual Market Monitoring Report](#), including comparable traffic volume data based on freight train kilometres.

Annex 4 – ORR’s statistical publications

Statistical Releases

This publication is part of ORR’s [National Statistics](#) accredited releases, which consist of seven annual publications: **Estimates of station usage; Rail industry finance (UK); Rail fares index; Rail safety statistics; Rail infrastructure and assets; Rail emissions; Regional rail usage;** and four quarterly publications: **Passenger rail performance; Freight rail usage and performance; Passenger rail usage; Passenger rail service complaints.**

In addition, ORR also publishes a number of Official Statistics, which consist of five annual publications: **Common Safety Indicators; Passenger satisfaction with complaints handling; Train operating company key statistics; Occupational health; Rail statistics compendium;** and four quarterly publications: **Signals passed at danger (SPADS); Delay compensation claims; Disabled Persons Railcards (DPRC); Passenger assistance.**

All the above publications are available on the [data portal](#) along with a list of [publication dates](#) for the next 12 months.

National Statistics

The United Kingdom Statistics Authority designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics. National Statistics status means that official statistics meet the highest standards of **trustworthiness, quality** and public **value**.

The majority of our [statistical releases were assessed in 2012](#) and hold National Statistics status. Since this assessment we have improved the content, presentation and quality of our statistical releases. In addition, in July 2019 we launched our new data portal. Therefore, in late 2019 we worked with the [Office for Statistics Regulation](#) (OSR) to conduct a compliance check to ensure we are still meeting the standards of the Code. On 4 November 2019, [OSR published a letter](#) confirming that ORR’s statistics should continue to be designated as National Statistics. OSR found many positive aspects in the way that we produce and present our statistics and welcomed the range of improvements made since the statistics were last assessed. [Estimates of Station Usage statistics were assessed in 2020](#).

For more information on how we adhere to the Code please see our [compliance statements](#). For more details or to provide feedback, please contact the Statistics Head of Profession (Lyndsey Melbourne) at rail.stats@orr.gov.uk.



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