# Freight rail usage and performance

## 2021-22 Quarter 2

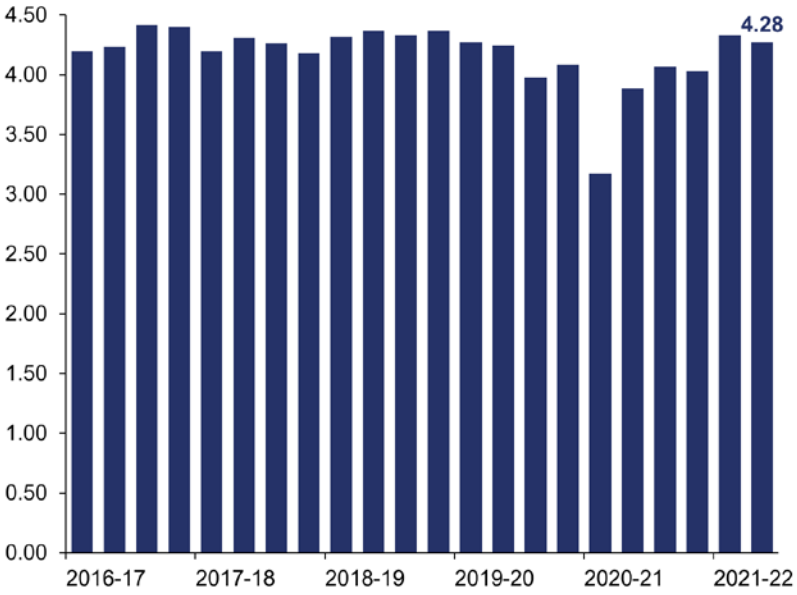
**14 December 2021**

In this release, freight rail usage and performance levels in financial year 2021-22 Q2 (1 July to 30 September 2021) are compared with both 2020-21 Q2 and 2019-20 Q2. This provides wider context given the effects of the coronavirus (COVID-19) pandemic during 2020-21.

Total **freight moved** was 4.28 billion net tonne kilometres in 2021-22 Q2, an increase of 10.0% compared with 2020-21 Q2. It was 0.7% higher than two years ago (2019-20 Q2).

### Freight moved has recovered to pre-pandemic levels

Freight moved (billion net tonne kms), Great Britain, 2016-17 Q1 to 2021-22 Q2




Total **freight lifted** was 19.8 million tonnes in 2021-22 Q2.

**Freight train kilometres** were 8.41 million kilometres in 2021-22 Q2.

The proportion of freight trains arriving within 15 minutes, as measured by the **Freight Delivery Metric**, was 94.1%.

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**, **freight lifted**, **freight delivery metric (FDM)**, **freight delays per 100 train km** and **freight train km by operator**.

**Sources:** Network Rail, Freight Operators.

**Latest quarter:** 2021-22 Q2 (1 July to 30 September 2021)

**Contents:**



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# 1. Freight moved

The total volume of freight moved was 4.28 billion net tonne kilometres in 2021-22 Q2. This was a 10.0% increase on the same quarter last year (2020-21 Q2). It increased by 0.7% compared with the same quarter two years ago (2019-20 Q2).

**Figure 1.1: All commodities increased their volumes moved compared with last year, except for international**

Freight moved (billion net tonne kilometres) by commodity, Great Britain, 2021-22 Q2 and change compared with 2020-21 Q2 (Table 1310)

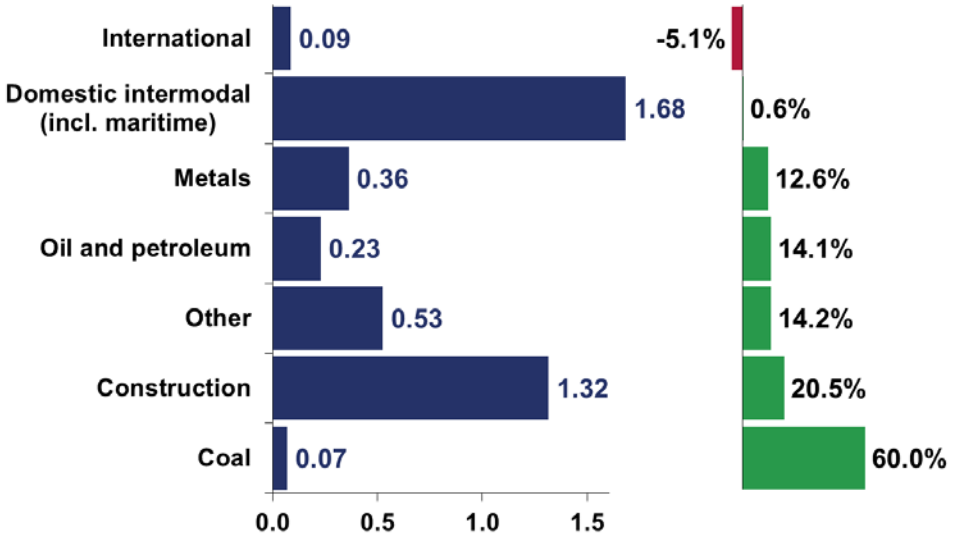
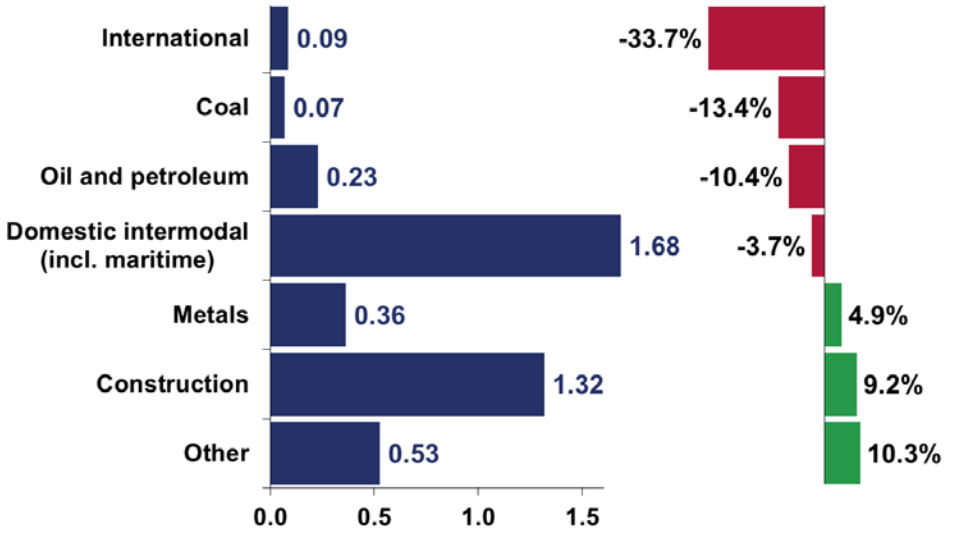



**Figure 1.2: Freight moved volumes for other, construction and metals are higher than they were two years ago**

Freight moved (billion net tonne kilometres) by commodity, Great Britain, 2021-22 Q2 and change compared with 2019-20 Q2 (Table 1310)



Coal volumes saw the biggest percentage increase compared with a year ago (2020-21 Q2), rising by 60.0%. This can be explained by the resumption in the use of coal in electricity generation at West Burton and Ratcliffe power stations. Reasons behind this include low levels of wind generation and high gas prices. Furthermore, the supply of electricity from France to the UK has been affected by a fire on the interconnector in Kent. However, coal had the second biggest percentage decrease compared with 2019-20 Q2, reducing by 13.4%.This is due to the closure of most of the remaining open cast mines.

Construction volumes increased by 20.5% compared with 2020-21 Q2 and by 9.2% compared with 2019-20 Q2. There have been high levels of demand for aggregates from house building and infrastructure work. The initial phase of HS2 construction work has contributed towards this, such as the building of access roads and compounds in Buckinghamshire and Oxfordshire.

In terms of absolute values, construction volumes were 1.32 billion net tonne kilometres in 2021-22 Q2, which is the highest Q2 value since the time series began in 1998-99. The construction sector has seen the largest increase since 2019-20 Q2, rising by 0.11 billion net tonne kilometres. The market share of construction is 30.8%, which is the second largest commodity share.

'Other' freight moved was 14.2% higher than a year ago (2020-21 Q2) and increased by 10.3% compared with two years ago (2019-20 Q2). A rise in domestic waste has contributed to this due to the trend to work from home and the greater quantities of packaging materials associated with home deliveries. There is also a continued demand for biomass.

Oil and petroleum freight moved has increased by 14.1% compared with 2020-21 Q2. However, it has fallen by 10.4% compared with 2019-20 Q2. This is in the context of the continuing impact of the pandemic on the aviation sector. Fewer flights at Heathrow airport have meant that pipelines are able to supply enough fuel without the requirement for additional supplies of fuel by rail.

Metals increased by 12.6% compared with 2020-21 Q2 and by 4.9% compared with 2019-20 Q2. There has been increased demand for steel and iron ore.

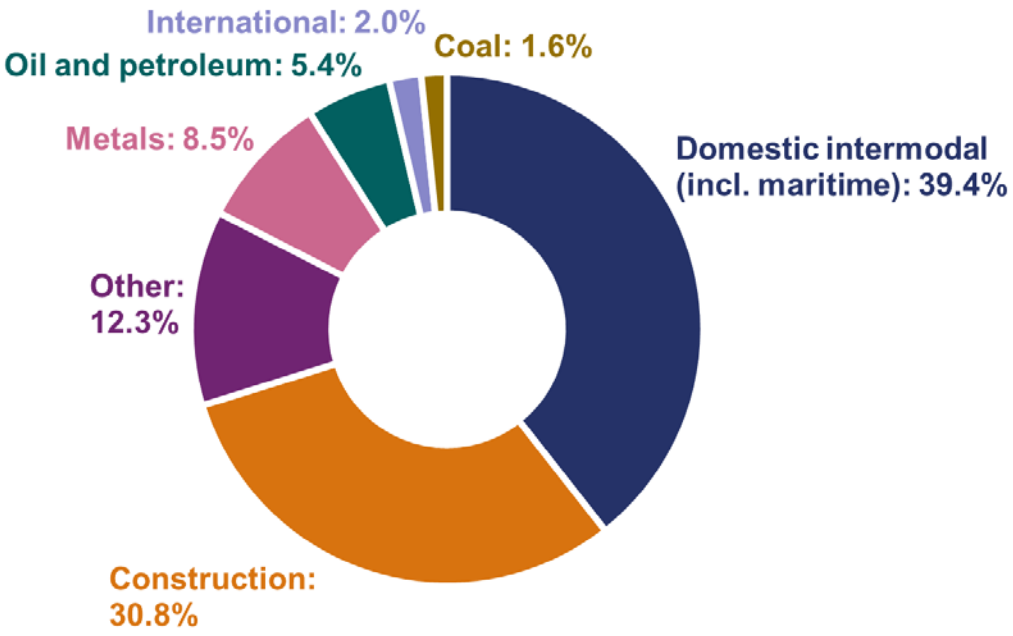
Domestic intermodal (transporting of goods to and from GB ports makes up the majority of this category) had the largest share of freight moved at 39.4%. This commodity increased by 0.6% compared with 2020-21 Q2. It decreased by 3.7% compared with 2019-20 Q2 in the context of disruption to world trade due to the pandemic, including a global shortage of containers and congestion at ports.

International was the only commodity to see a reduction in volumes compared with 2020-21 Q2, with a decrease of 5.1%. The reduction may be associated with low volumes of

automotive traffic to Europe through the Channel Tunnel due to reduced car production and shortages of key components such as microchips. International volumes recorded the largest percentage fall compared with 2019-20 Q2, reducing by 33.7%.

**Figure 1.3: Over two thirds of all freight moved was domestic intermodal or construction freight**

Proportion of freight moved by commodity, Great Britain, 2021-22 Q2 (Table 1310)



# 2. Freight lifted

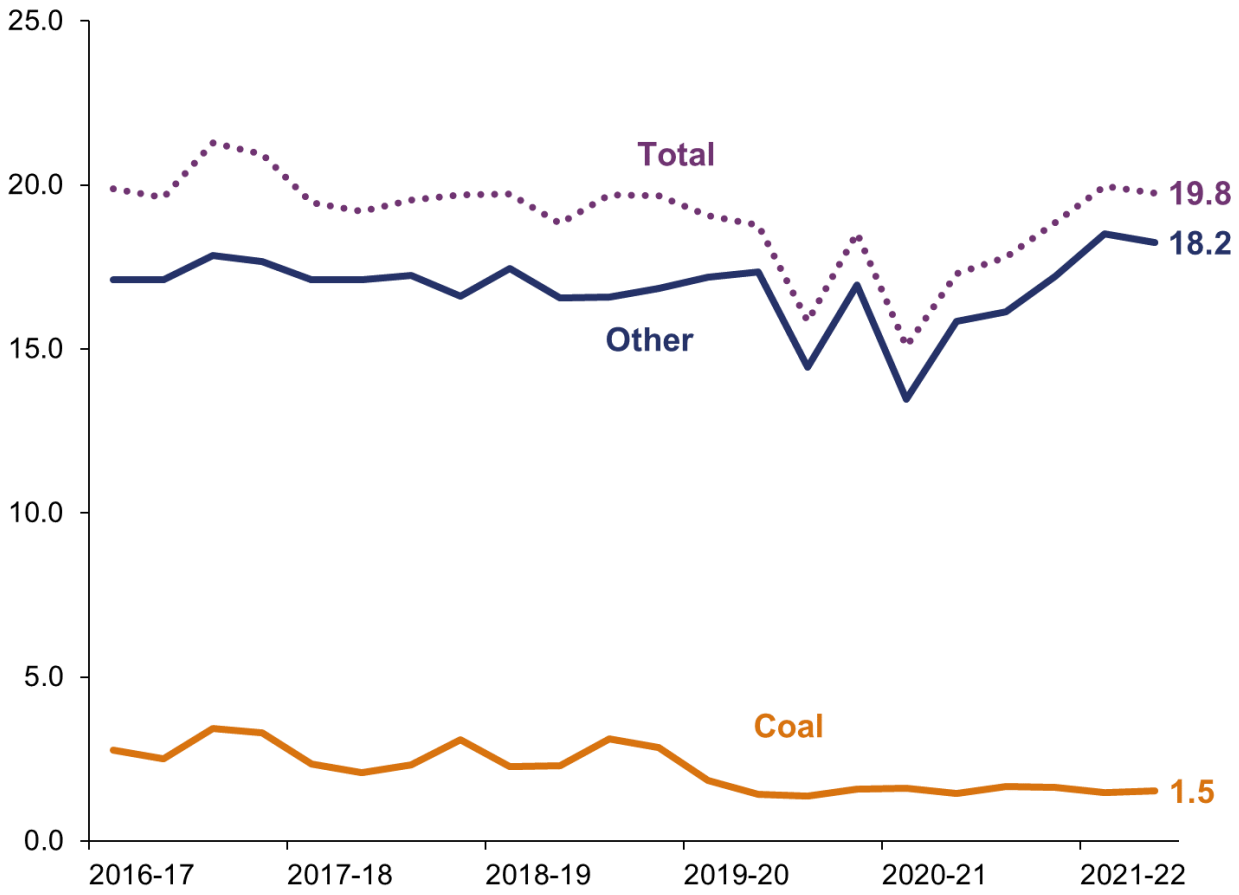
The total amount of freight lifted in 2021-22 Q2 was 19.8 million tonnes, an increase of 14.3% compared with 2020-21 Q2. It was 5.3% higher than two years ago (2019-20 Q2).

The amount of coal lifted was 1.5 million tonnes. It increased by 4.5% compared with 2020-21 Q2 and by 7.6% compared with 2019-20 Q2.

Other freight lifted was 18.2 million tonnes, which was the highest Q2 value since the time series began in 1996-97. It increased by 15.2% compared with 2020-21 Q2 and by 5.1% compared with 2019-20 Q2.

**Figure 2.1: Other freight lifted at 18.2 million tonnes was the highest Q2 value since the time series began**

Freight lifted (million tonnes) by commodity (coal and other), Great Britain, 2016-17 Q1 to 2021-22 Q2 (Table 1315)

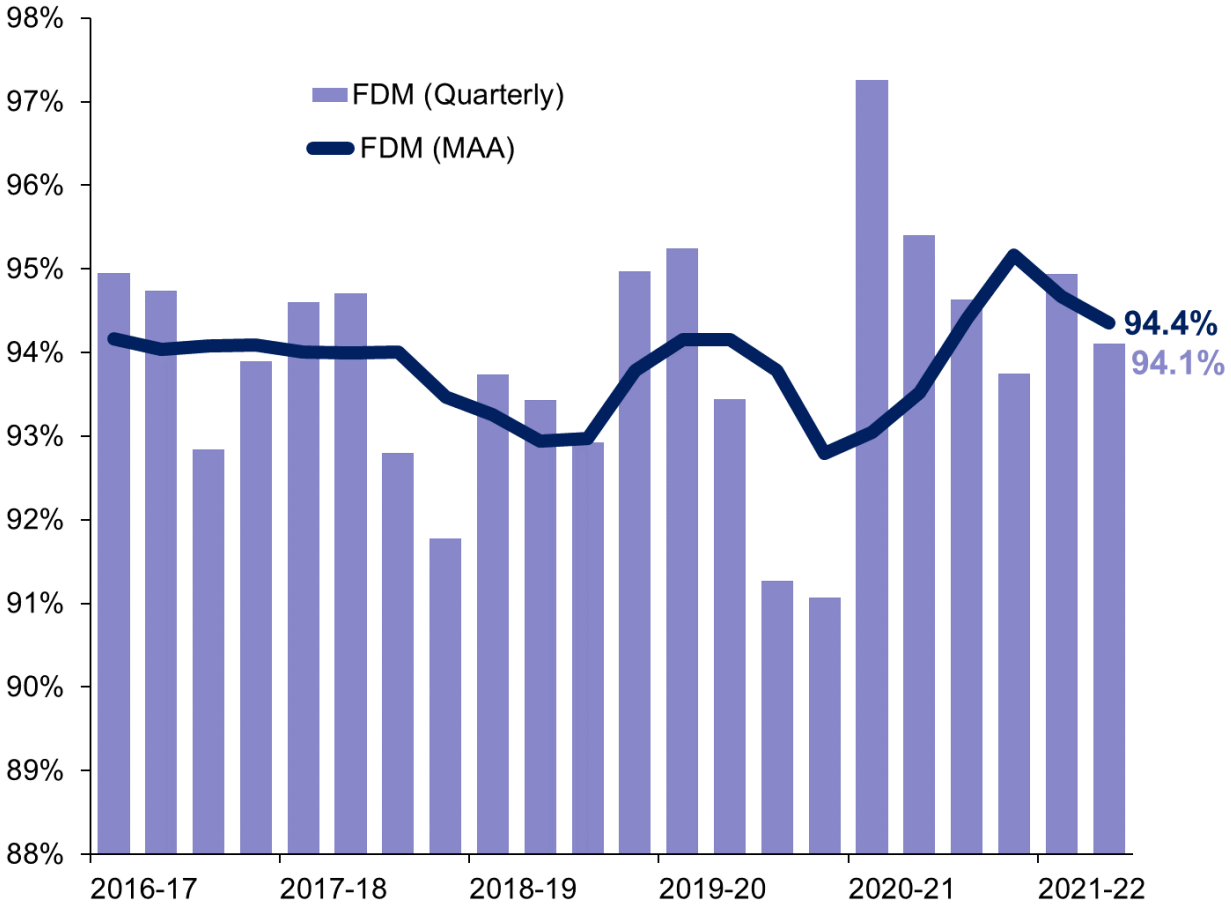


# 3. Freight Delivery Metric (FDM)

The Freight Delivery Metric was 94.1% in 2021-22 Q2, 1.3 percentage points lower than the same quarter in 2020-21. It was 0.7 percentage points higher than the same quarter two years ago (2019-20 Q2).

**Figure 3.1: FDM moving annual average (MAA) peaked at 95.2% in 2020-21 Q4**

Freight Delivery Metric (quarterly and MAA), Great Britain, 2016-17 Q1 to 2021-22 Q2 (Table 1320)



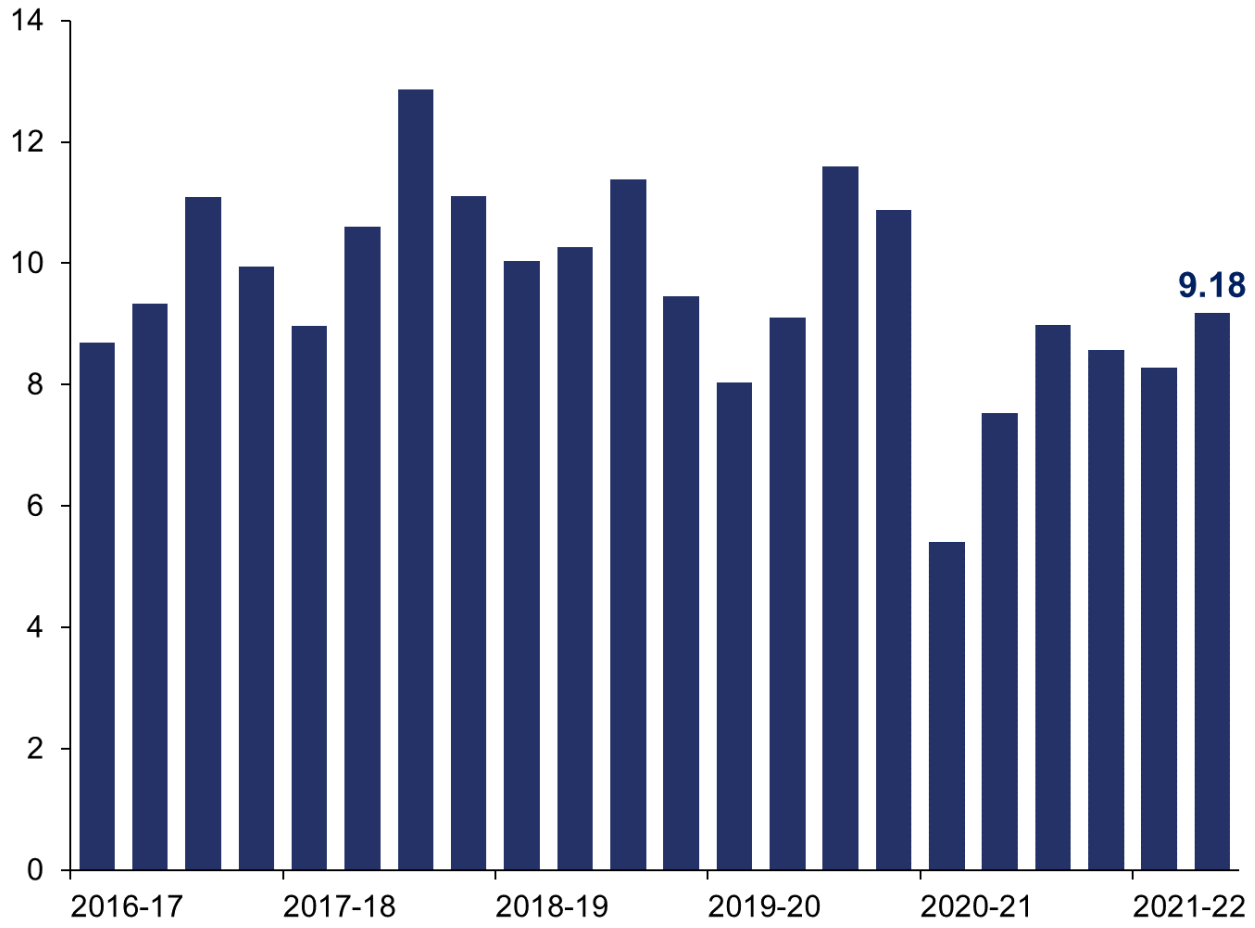

Data for the Freight Delivery Metric by Region (FDM-R) by railway period is available on the data portal in Table 1324.

# 4. Freight delay per 100 train kilometres

Freight operators experienced 9.18 minutes of delay per 100 train kilometres in 2021-22 Q2. This was 21.8% higher (i.e. worse) than the same quarter a year earlier (2020-21 Q2). It was 0.8% higher than the same quarter two years ago (2019-20 Q2).

**Figure 4.1: Freight delay per 100 train kilometres was lowest in 2020-21 Q1 at 5.41 minutes**

Freight delay per 100 train kilometres, Great Britain, 2016-17 Q1 to 2021-22 Q2 (Table 1325)



# 5. Freight train kilometres

Freight train kilometres increased by 12.6% compared with the same quarter last year and decreased by 0.7% compared with two years ago. In 2021-22 Q2, 8.41 million kilometres were recorded.

For the seven freight operators with the most train kilometres, each saw a rise in their train kilometres compared with 2020-21 Q2. Devon and Cornwall Railways had the largest percentage increase with 65.9%, followed by Colas Freight with a rise of 49.8%.

When compared with two years ago (2019-20 Q2), the two largest percentage increases were for Freightliner Heavy Haul (58.5%) and Direct Rail Services (22.1%). Freightliner recorded the biggest fall over the same period with a reduction of 15.9%.

**Figure 5.1: Freight train kilometres increased for all seven operators**

Freight train kilometres (millions) by operator, Great Britain, 2021-22 Q2 and change compared with 2020-21 Q2 (Table 1333)

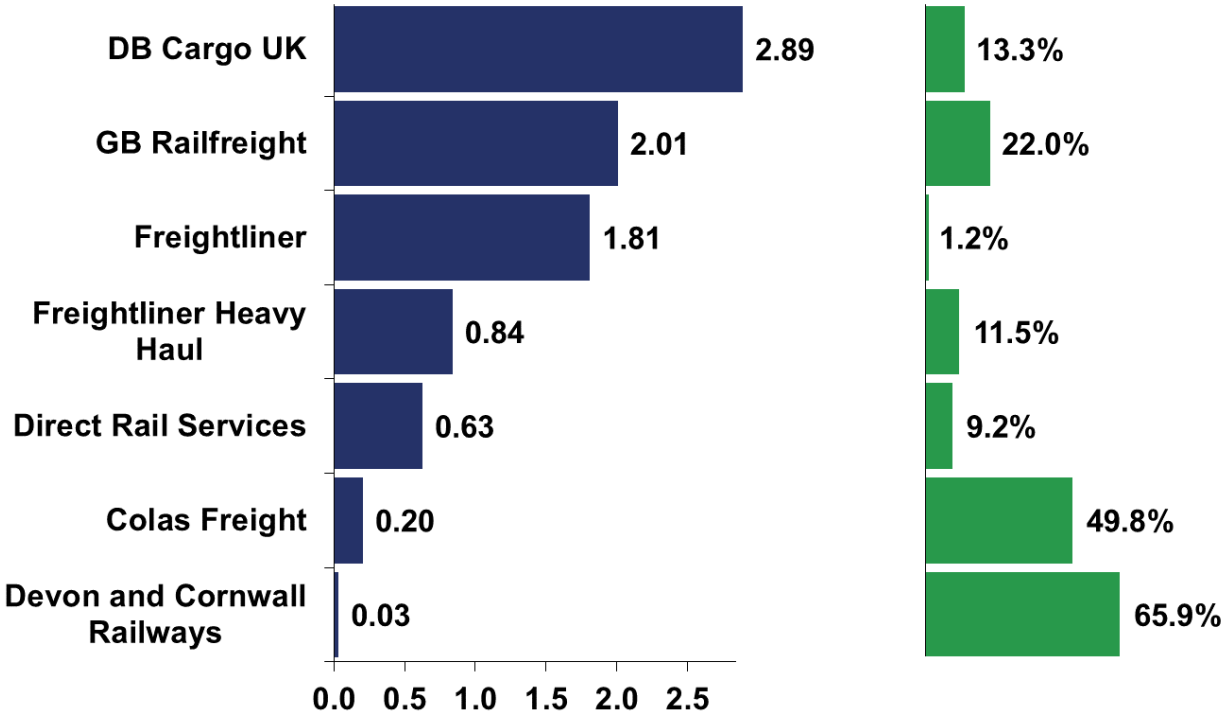
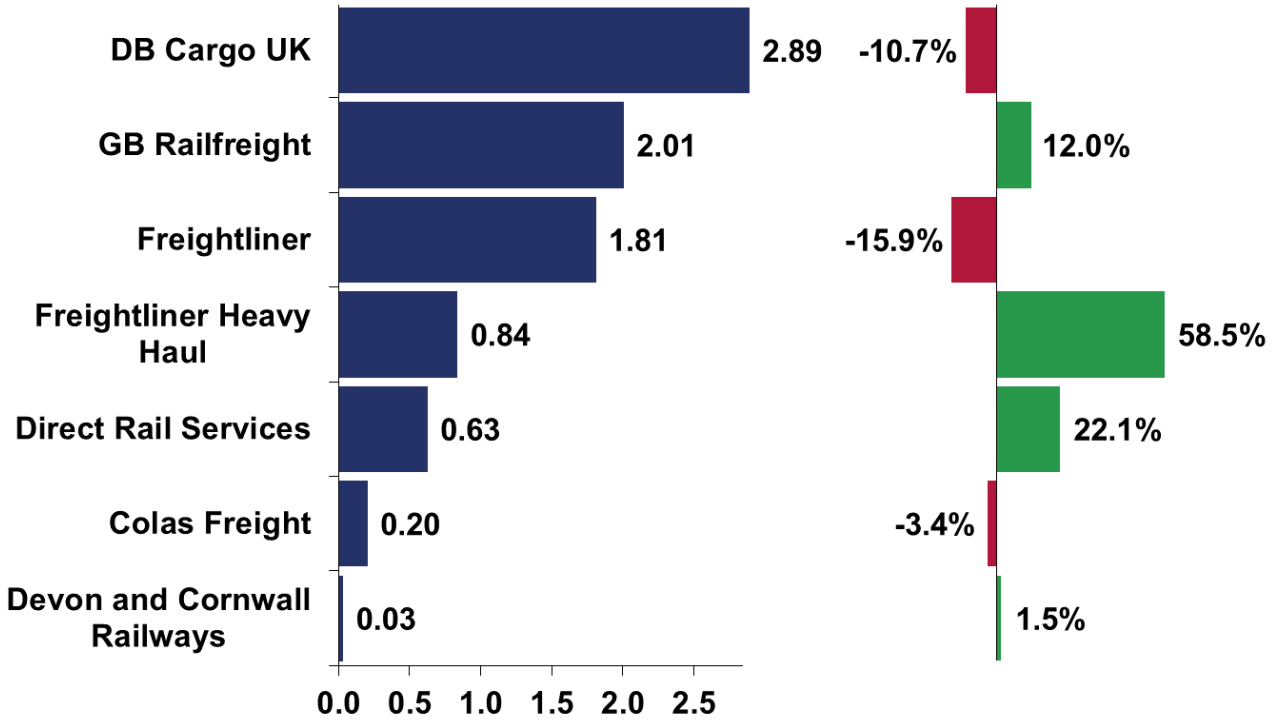


**Figure 5.2: Freight train kilometres for four operators were higher than two years ago**

Freight train kilometres (millions) by operator, Great Britain, 2021-22 Q2 and change compared with 2019-20 Q2 (Table 1333)



# 6. 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 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 Q4, 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 Network Rail infrastructure**.** The data is sourced from Network Rail's Track Access Billing System (TABS) and covers only the mileages charged through TABS. 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).

- **Rail freight impact on road haulage** is measured using two metrics:
  - **Rail freight lorry kilometres equivalent** measures the distance that road vehicles (HGVs) would need to travel to move the volumes of freight carried on rail.
  - **Avoided lorry journeys** measures the number of road vehicle trips that would need to be made to move freight carried on rail.
- **Rail freight market share** compares the volumes of freight lifted (tonnes) and freight moved (net tonne kilometres) on road (HGVs), waterways and rail. These shares are calculated using Department for Transport's annual figures published in Transport Statistics Great Britain

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 six largest Freight Operators (DB Cargo UK, Freightliner, 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 Q4 releases only.

To provide more comprehensive coverage of the freight market, estimates of freight lifted have been calculated for Devon and Cornwall Railways (2011-12 Q1 onwards) and Colas Freight (2010-11 Q1 to 2019-20 Q4). From 2020-21 Q1, 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 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 1315 – The quarterly figures for 2020-21 Q4 and 2021-22 Q1 have been revised due to updated data submitted by a freight operator. Consequently, the annual figure for 2020-21 has been revised too.

Further details on 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
- Rail freight impact on road haulage (annual) – Table 1340
- Rail freight market share (annual) – Table 1350

### 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

## 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 Ninth 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, the Office of Rail and Road also publishes a number of Official Statistics, which consist of three annual publications: **Train operating company key statistics; Rail statistics compendium; Occupational health**; 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.

This publication is available on the data portal

Any media enquiries regarding this publication should be sent to us at orr.gov.uk/contact-us.