

1 December 2020

Background:

This annual statistical release contains estimates of the total number of people:

- travelling from or to each station in Great Britain (entries and exits); and
- changing trains at each station (interchanges)

Estimates of station usage are derived from LENNON, the rail industry's ticketing and revenue system, together with some local ticketing data. A number of adjustments are made to the source data to make the estimates as accurate as possible.

Source: LENNON and local ticketing data

Latest year: 2019-20
(April 2019 to March 2020)

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November 2021

In Great Britain, **2,567 stations** were served by mainline rail services as at 31 March 2020.

The statistics in this release cover the period before and immediately following the government's announcement of measures to limit the impact and transmission of the coronavirus (COVID-19) pandemic in mid-March. [Rail passenger journeys decreased](#) following announcements advising against all unnecessary travel. Some high level analysis of the impact of COVID-19 on station usage in 2019-20 can be found on page 9 of this release.

Busiest and least used stations

The busiest station in 2019-20 was **London Waterloo** with an estimated **86.9 million entries and exits**. This was 7.3 million less than the previous year due to the impact of strike action and COVID-19. This has been the most used station for the last 16 years.

Top 5 busiest stations in Great Britain, 2019-20

Rank	Station	Entries & exits
1.	London Waterloo	86,903,518
2.	London Victoria	73,559,158
3.	London Liverpool Street	65,984,786
4.	London Bridge	63,095,300
5.	Birmingham New Street	46,510,526

The least used station was **Berney Arms** in Norfolk with **42 entries and exits**. Usage at this station fell by 90% in 2019-20 due to the lines serving the station being closed most of the year to upgrade signalling. Further information on the busiest and least used stations can be found on pages 3 and 4.

All data tables, a quality and methodology report, frequently asked questions, infographics and an interactive dashboard associated with this release are published on the [Estimates of station usage page](#) of the ORR data portal.

1. Introduction

Why estimates?

These statistics on station usage are estimates based primarily on tickets sales. The data sources and methodology used is the best approach possible given Great Britain does not have a fully gated rail network or comprehensive and robust count data at every station.

There are a number of limitations using this approach which users should be aware of:

- Some ticket sales and ticketless travel are not included, which may mean that usage at some stations is underestimated.
- Ticket sales data does not always specify precise journey origins and/or destinations, so these are estimated using alternative data sources.
- Methodology improvements e.g. inclusion of ticket sales previously not available means that estimates are not always comparable over time.

Further information on the methodology underlying these statistics and their limitations can be found in Annex 1.

Methodology changes made for 2019-20 estimates

Key methodology changes made this year and their impact on station usage estimates are listed below. Further information is provided in [Table 1410](#) (column K) and the [Quality and methodology report](#).

- An additional 7.2 million entries and exits have been added to stations across the Merseyside area as a result of additional tickets being included in the dataset for the first time. This increased usage estimates across the Merseyside area by around 6%. Similarly, additional tickets across South Yorkshire were included adding 0.4 million (12%) entries and exits.
- Usage at the three Heathrow stations has been included, following the inclusion of Heathrow Express journeys and other journeys to/from Heathrow stations. This adds 14.3 million entries and exits including 6.3 million at London Paddington.
- Updated information has been used to split usage at central stations in Manchester and at other group stations e.g. stations in Warrington and Worcester.

National Statistics accreditation

[These official statistics have recently been assessed](#) and designated as National Statistics by the United Kingdom Statistics Authority. This means that they meet the highest standards of **trustworthiness**, **quality** and public **value**. Further information on National Statistics can be found in Annex 3.

2. Station entries and exits

Stations with the most entries & exits

The busiest station in 2019-20 was **London Waterloo** with **86.9 million entries and exits**. This is the 16th year in a row that it has been the most used station. However, in 2019-20, London Waterloo had the biggest absolute decrease of 7.3 million entries and exits compared to 2018-19. This is likely to be related to the impact of strike action in late 2019 and COVID-19 in March 2020.



[Waterloo 03](#) by [Office of Rail and Road](#) is licenced under [CC BY 2.0](#). Photo taken in 2016.

London Paddington had the biggest annual absolute increase in entries and exits due to the inclusion of journeys to/ from Heathrow stations in 2019-20.

Figure 2.1: Top 10 busiest stations in Great Britain and outside London, 2019-20

Rank	All stations in GB	Entries & exits	Rank	Stations outside London only	Entries & exits
1.	London Waterloo	86,903,518	1.	Birmingham New Street	46,510,526
2.	London Victoria	73,559,158	2.	Glasgow Central	32,465,202
3.	London Liverpool Street	65,984,786	3.	Manchester Piccadilly	32,198,704
4.	London Bridge	63,095,300	4.	Leeds	31,020,744
5.	Birmingham New Street	46,510,526	5.	Edinburgh	23,087,646
6.	London Paddington	44,871,096	6.	Gatwick Airport	21,050,640
7.	London Euston	44,776,804	7.	Brighton	17,355,572
8.	Stratford (London)	41,912,114	8.	Reading	16,753,368
9.	London St Pancras Intl	36,040,080	9.	Glasgow Queen Street	16,685,760
10.	London Kings Cross	32,532,404	10.	Liverpool Central	16,454,940

Stations with the least entries & exits

The least used station in 2019-20 was **Berney Arms** in Norfolk with **42 entries and exits**. The 90% fall in usage at this station, the largest percentage decrease in 2019-20, is due to the lines serving the station being closed most of the year to upgrade signalling. The station reopened in February 2020.



[Berney Arms station, Norfolk](#) by [Jeremy Segrott](#) is licenced under [CC BY 2.0](#). Photo taken in 2015.

In 2019-20 there were fewer than 100 entries and exits at six stations:

1. Berney Arms, Norfolk (42 entries and exits)
2. Elton & Orston, Nottinghamshire (68)
3. Stanlow & Thornton, Cheshire (82)
4. Havenhouse, Lincolnshire (84)
5. Denton, Greater Manchester (92)
6. Polesworth, Warwickshire (96)

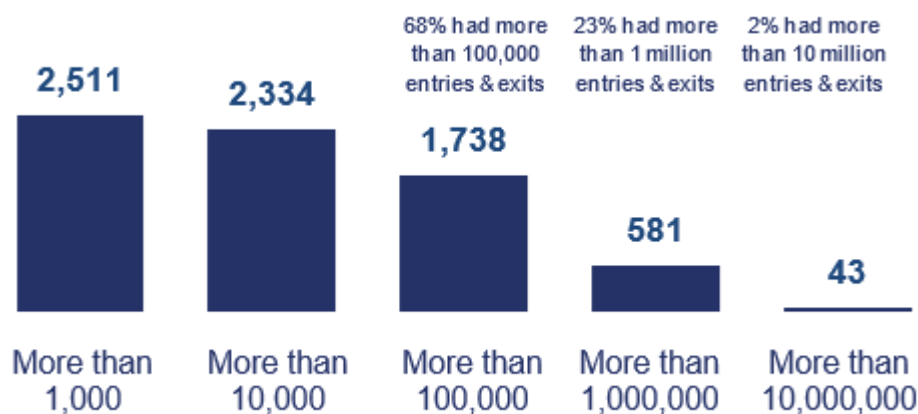


In previous years, usage at some of the least used stations presented as part of these statistics have greatly increased the following year. We understand that highlighting the least used stations within these statistics can encourage people to visit them. Last year's joint least used stations, Denton and Stanlow & Thornton each had 46 entries and exits. In 2019-20, the number of entries and exits at these stations increased to 92 and 82 respectively.

Distribution of entries & exits

There were 43 stations (2%) in Great Britain with more than 10 million entries and exits in 2019-20. Of these stations, 27 were in London.

Figure 2.2: Distribution of entries and exits by station, 2019-20



Request stop stations with the most entries & exits

Request stop stations make up around 6% of all stations in Great Britain. To get on or off the train at one of these stations passengers need to alert the driver.

Figure 2.3: Top 5 busiest request stop stations in 2019-20, Great Britain

Station	Entries & exits
Corkickle, Cumbria	68,974
Conwy, Wales	57,486
Harrington, Cumbria	35,928
Umberleigh, Devon	32,302
Dalston (Cumbria)	31,940

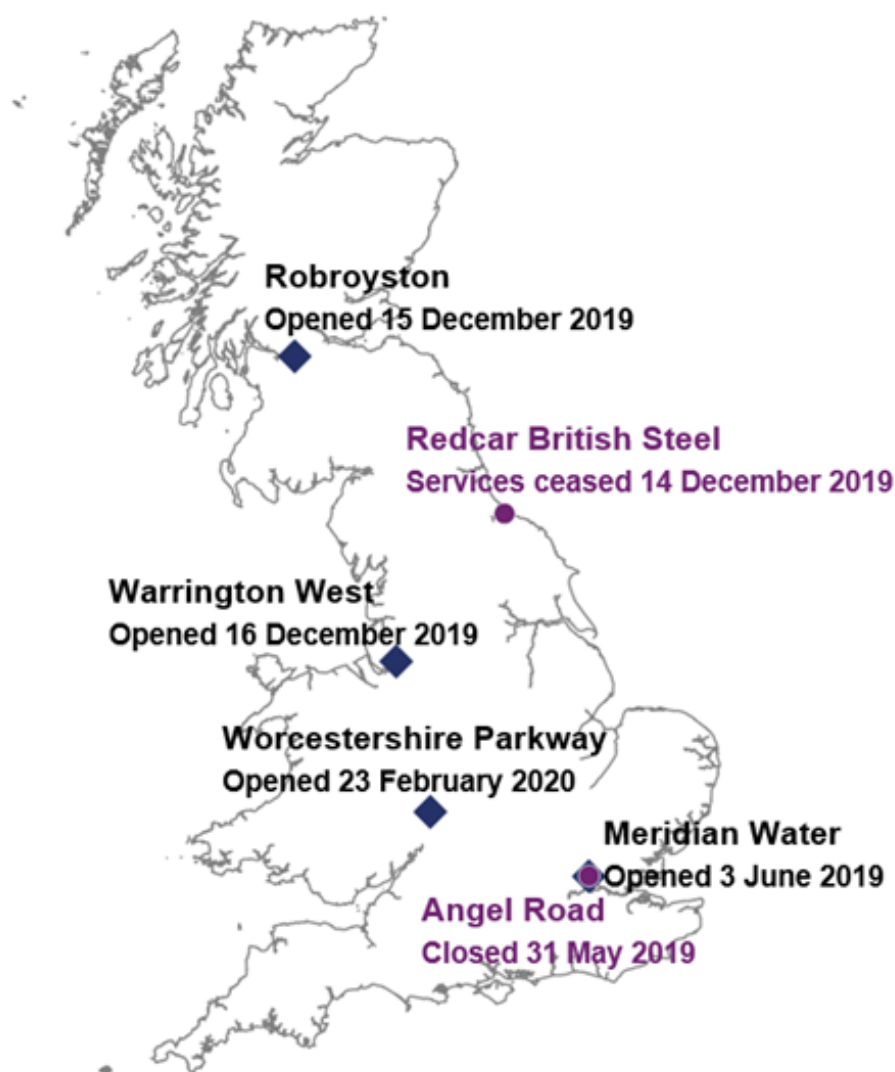


New and closed stations

Four new stations opened in 2019-20, these were: Meridian Water, Robroyston, Warrington West and Worcestershire Parkway.

During 2019-20, Angel Road station closed permanently in May 2019 (replaced by Meridian Water). All services ceased from Redcar British Steel in December 2019. Usage at these stations prior to when services ceased is included in [Table 1410](#) and [Table 1415](#).

Figure 2.4: Stations opened and closed in 2019-20, Great Britain

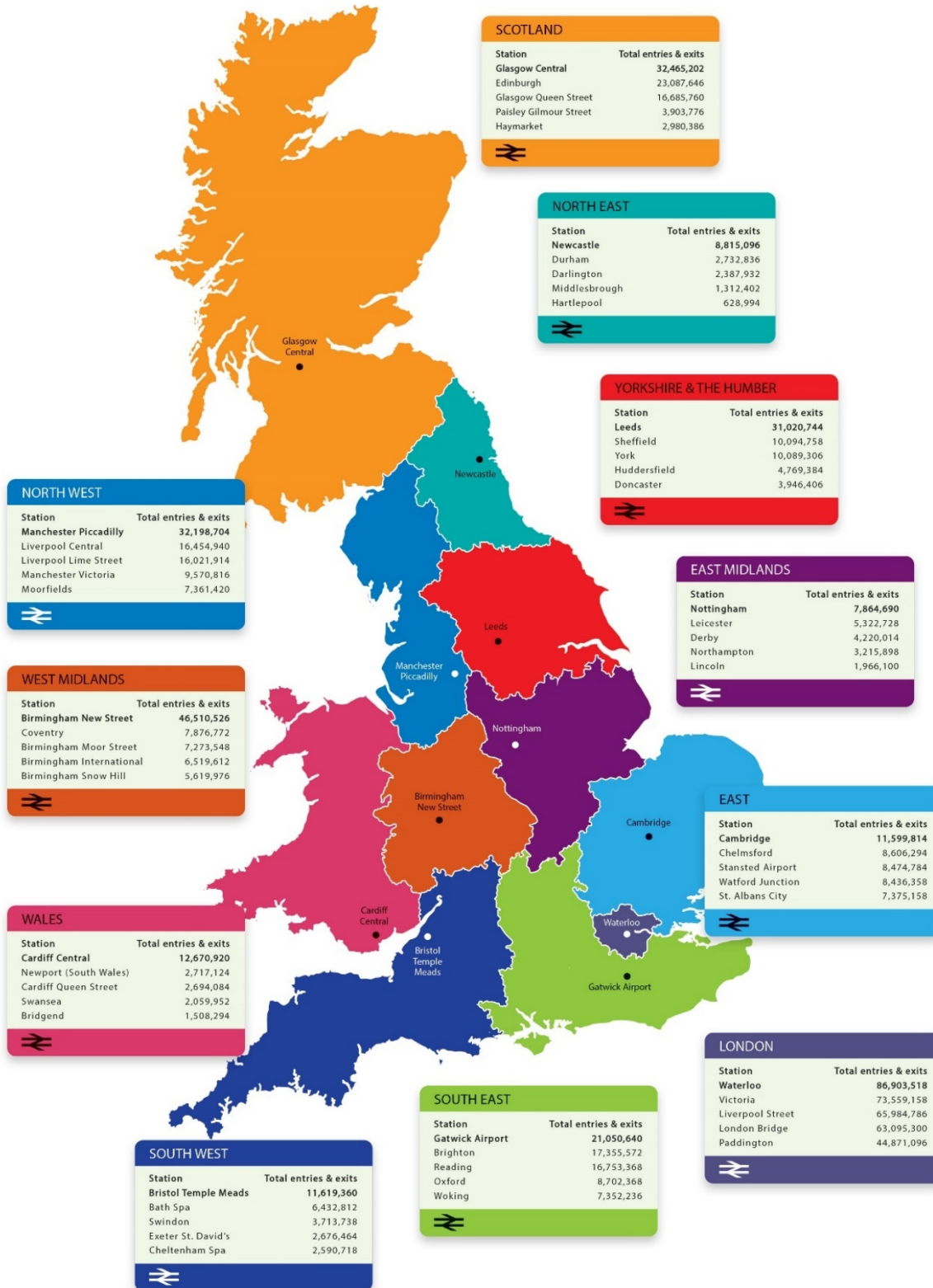


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The number of stations served by mainline rail services at the end of 2019-20 (i.e. at 31 March 2020) was 2,567, as presented in our latest [Rail infrastructure and assets statistics](#).

Stations with the most entries & exits by region

Figure 2.5: Top 5 busiest stations in each region in England, Wales and Scotland in 2019-20



The busiest station in each region in 2019-20 was the same as in the previous year. In fact, the top five busiest stations were the same in most regions in 2019-20 as in the previous year (although sometimes in a different order).

In the East of England, there was a 13.3% fall in usage at Stansted Airport station in 2019-20 compared to the previous year. This is likely to have been due to engineering works in October 2019 and the impact of COVID-19 towards the end of 2019-20.

In the North West of England, there have been large increases in usage at each of the top five busiest stations. However, much of these increases is related to methodology changes and therefore estimates for these stations are not directly comparable with 2018-19 estimates. For Manchester Piccadilly and Manchester Victoria, these increases relate to the use of improved data to split usage at central stations in Manchester. Usage at Liverpool Central, Liverpool Lime Street and Moorfields increased as a result of additional tickets being included in the dataset for 2019-20. This methodology change increased estimates of usage across the Merseyside area by around 6% on average.

In Yorkshire and the Humber region, usage at both Sheffield and Doncaster stations is not directly comparable with 2018-19 estimates due improved methodology which led to 0.4 million additional tickets being included in the dataset for 2019-20, increasing estimates of usage across the South Yorkshire area by 12%.

Additional commentary on changes in usage at these and other stations can be found in [Table 1410](#).

3. Impact of COVID-19 on usage

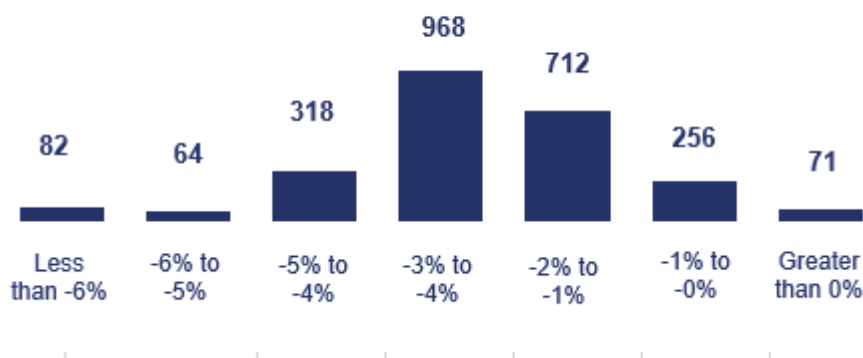
Although the impact of COVID-19 on station usage only affected the last few weeks of 2019-20 it does explain the fall in usage at most stations in Great Britain.

To understand the likely impact of COVID-19 at a station level we produced an 'alternative' entries and exits dataset for the period March 2019 to February 2020. This dataset was produced on a consistent basis with the main dataset (April 2019 to March 2020). The estimated number of entries and exits for each station for the year March 2019 to February 2020 can be found in [Table 1410](#) (column M).

This alternative dataset has been produced to be as close to the main (financial year) dataset as possible, whilst largely being unaffected by the impact of COVID-19. Looking at the differences between the main dataset and the alternative dataset provides some insight into the impact of COVID-19 at a station level. However, it should be noted that differences between these datasets may be explained by other factors impacting usage in March 2019 and March 2020 e.g. (non-COVID related) station closures.

On average, usage (entries and exits) in the 2019-20 financial year (April 2019 to March 2020) was 3.5% less than in the year March 2019 to February 2020. The distribution of this impact is presented in the chart below e.g. usage in the 2019-20 financial year was between 3% and 4% less than in the year March 2019 to February 2020 at 968 stations.

Figure 3.1: Distribution of the percentage difference for each station between usage (entries and exits) in the year April 2019 to March 2020 relative to usage in March 2019 to February 2020



The impact of COVID-19 on passenger rail usage has continued into 2020-21 and remains historically low. Further information can be found in our latest [Passenger rail usage statistics](#). The Department for Transport also publish [daily estimates of transport use by mode](#).

4. Station interchanges

Stations with the most interchanges

An interchange is where a passenger needs to transfer from one train to another during their journey from origin to destination station.

In 2019-20, the station with the highest number of interchanges was Clapham Junction. This station has had the highest number of interchanges each year since 2004-05.

Figure 4.1: Top 5 stations with the most interchanges in Great Britain, 2019-20

Rank	Station	Interchanges
1.	Clapham Junction	26,902,505
2.	London Bridge	10,677,772
3.	Birmingham New Street	6,994,410
4.	London Waterloo	6,309,545
5.	London Victoria	5,755,668



These estimates are made using a model which makes assumptions about the route taken travelling between specific origins and destinations and whether that route includes one or more interchanges. In practice, passengers travelling between specific origins and destinations may interchange at a different station to the one assumed by the model. As a result, estimates may be higher or lower than expected. Further information can be found in Annex 1.

5. Annexes

Annex 1 – Quality and methodology

Data sources and methodology

These statistics on station usage are estimates primarily based on tickets sales. The data sources and methodology used is the best approach possible given Great Britain does not have a fully gated rail network or comprehensive and robust count data at every station.

Estimates of station usage are primarily based on data from LENNON, the rail industry's ticketing and revenue system. This data feeds into a base matrix which is an input into the MOIRA2.2 rail planning tool. This is supplemented by local ticketing data for Passenger Transport Executive (PTE) areas. These sources are combined, and further adjustments are made to the data to address known issues with the MOIRA2.2 base matrix. These include an allocation of tickets sold to 'London Terminals,' allocation of demand between individual stations in group stations outside of London and a number of cases where adjustments are made to selected stations to account for specific known issues, for example Digby & Sowton. Further information on the data sources/ adjustments used to estimate usage at individual stations can be found in [Table 1410](#) (column L).

The resulting dataset is used to produce the Origin Destination Matrix (ODM), a comprehensive matrix of passenger flows throughout Great Britain. The ODM is then used to derive estimates for the number of entries and exits at each station in Great Britain.

Interchanges at stations have been estimated by combining the number of journeys made on each flow (from the ODM) with the information on passenger journeys taken from the Central Allocations File (CAF). The CAF is an output of the ORCATS system which predicts passenger choices of rail route and train used.

Limitations

As the estimates of station usage are primarily based on ticket sales, there are a number of limitations that users should be aware of:

- Some ticket sales (e.g. Eurostar tickets) and ticketless travel are not included, which may mean that usage at some stations is underestimated.
- Journeys with no associated ticket sales such as staff travel, and particularly fare evaders, are not included.
- Ticket sales data does not always specify precise journey origins and/or destinations, so these are estimated using alternative data sources.
- Methodology improvements e.g. inclusion of ticket sales previously not available means that estimates are not always comparable over time. Improvements should be taken into account when considering changes in usage between years.

- Assumptions are made about the number of journeys made with multi-use tickets e.g. that each weekly season ticket will be used to make 10.3 journeys.
- Passengers may purchase tickets from/to different stations to the ones they use in practice e.g. to stations at the end of the fare zone.

Methodology changes

Whilst consistency with past datasets is important to enable comparisons to be made over time, users have indicated that they are keen to see improvements in station usage estimates, even where this reduces consistency with historic data, provided any changes are clearly explained. The main methodology changes made this year are presented on page 2 of this release.

How these statistics can and cannot be used



- Monitoring the number of annual entries and exits or interchanges at individual stations e.g. to understand demand
- Monitoring how usage at individual stations changes over time (subject to methodology changes) and insights as to why
- Comparing the relative usage of stations within local areas, regions or across the whole of Great Britain
- To gauge the use of different ticket types e.g. season vs reduced



- Monitoring passenger rail usage at a national level, by train operating company or by ticket type (refer to [Passenger rail usage statistics](#))
- Monitoring the number of passenger journeys between and within regions (refer to [Regional rail usage statistics](#))
- Exploring rail journey flows between origin and destination stations
- Volume of entries compared to exits at an individual station (methodology makes these equal)

Revisions

No revisions have been made to previously published estimates as part of the release of these statistics. Further details on historic revisions can be found in the [Revisions log](#).

Further details on data collection, the methodology used to calculate the estimates within this release and limitations of these estimates can be found in the [Estimates of station usage quality and methodology report](#) and [Frequently Asked Questions document](#).

Annex 2 – List of outputs associated with this release and related statistics

Data tables and other outputs

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

All tables and other outputs associated with this release can be found on the [Estimates of station usage page](#).

- Passenger entries and exits and interchanges by station (2019-20) – Table 1410 (ods and csv)
- Time series of passenger entries and exits and interchanges by station (1997-98 to 2019-20) – Table 1415 (ods)
- Interactive dashboard (Power BI)
- Animated charts (MP4) and infographics (PDF)

Related statistics

We publish [Passenger rail usage statistics](#) on a quarterly basis. These statistics include estimates of the number of passenger rail journeys in Great Britain, by sector (London and the South East, Regional, and Long distance), by operator and by ticket type. This publication also includes statistics on passenger kilometres and train kilometres.

We also publish annual statistics on [Regional rail usage](#), which includes the number of rail journeys between and within regions. These statistics are also derived from the ODM used to produce these statistics i.e. primarily based on the LENNON ticketing system and local ticketing data.

Network Rail publishes information on [station footfall at 18 Network Rail managed stations only](#). These figures are collected using a different method to the statistics in this release and include all people using the stations e.g. visiting shops and restaurants who may not make a rail journey.

The Department for Transport (DfT) publishes [Rail passenger numbers and crowding statistics](#) providing information on the number of passengers travelling by rail into and out of major city centres in England and Wales. The statistics represent passengers on National Rail services on a 'typical' weekday. DfT also currently publish [daily estimates of transport use by mode](#).

Annex 3 – 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 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 Person’s Railcard (DPRC); Passenger assistance**.

All the above publications are available on the [ORR 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**.

[These statistics were assessed in 2020](#) and this is the first time they are being published as National Statistics.

Our other [statistical releases were assessed in 2012](#) and also hold National Statistics status. Since our 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.

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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