



Passenger Rail Performance

2019-20 Q3

Publication date: 20 February 2020

Next publication date: 21 May 2020

Background

This statistical release contains information on **new passenger rail**

performance measures for Great Britain. The new measures report the **reliability** and **punctuality** to the minute of trains arriving at every recorded station stop.

The release also contains information on **severely disrupted days, train delays and their causes** and more detailed **information by train operating company**. All data are sourced from Network Rail.

The latest quarterly data in this release refers to October, November and December 2019 (Q3).

For the **On Time** punctuality measure, the percentage of recorded station stops arrived at 'on time' (early or less than one minute after the scheduled time) in Great Britain was **65.1%** in the year ending 2019-20 Q3.

Great Britain - year ending 2019-20 Q3		Compared with year ending 2018-19 Q3	
On Time	65.1%	↑	2.9 pp
PPM	86.9%	↑	1.3 pp
Cancellations Score	3.1%	→	0.0 pp

Using the **Public Performance Measure (PPM)**, **86.9%** of trains were punctual (early or less than 5/10 minutes after the scheduled arrival time) at their final destination in the year ending 2019-20 Q3.

The proportion of trains classified as **Cancellations** in the year ending 2019-20 Q3 was **3.1%**. This measure is a weighted score which counts full cancellations as one and part cancellations as half.

Cancellations is different to the Cancellations and Significant Lateness (CaSL) measure previously presented in this release.

Information on freight rail performance can be found in the [Freight rail usage and performance](#) statistical release.

Author: Jack Willows

Responsible Statistician: Jay Symonds

Public Enquiries: Email: rail.stats@orr.gov.uk **Media Enquiries:** Tel: 020 7282 2094

Website: <https://dataportal.orr.gov.uk/>

New passenger rail performance measures



The rail industry developed a [new set of punctuality and reliability performance measures](#) for Control Period 6 (April 2019 to March 2024) to improve rail performance and increase customer satisfaction. ORR has published the outputs of some of these measures in an [annual performance factsheet](#) and periodic data tables since August 2017.

After a period of consultation with users and stakeholders, and based on the feedback received, we restructured this statistical release from 2019-20 Q1 and made a number of changes to associated data tables to better reflect these new performance measures in our published statistics. We also developed [new interactive charts on performance](#) presenting more detailed information on the performance of Network Rail and train operators. The following new measures are included in this release:

Train punctuality at recorded station stops: On Time, Time to 3 and Time to 15 measure the punctuality of trains at each recorded station stop. These measures are different from the Public Performance Measure (PPM), which measures the punctuality of trains at their final destination only. The new punctuality measures also exclude station stops where the train fails to call. For PPM, all cancelled trains are included in the measure and counted as ‘non-punctual’ trains.

Train Cancellations: This measure is a weighted score, which counts full cancellations as one and part cancellations as half and is presented as a percentage of all trains planned. This measure of reliability is different from the Cancellations and Significant Lateness (CaSL) measure, which counts the number of full and part cancellations and trains later than 30 minutes or more and presents this total as a percentage of all trains planned.

Severe disruption: A severely disrupted day at a National (GB) level is defined when the Cancellations score is 5% or more. At a sub-operator level, a severely disrupted day is defined when the Cancellations score for any sub-operator is 20% or more.

[Network Rail](#) and [Rail Delivery Group](#) also publish data on train punctuality and Cancellations in Great Britain every railway period.

Further development of these statistics

We intend to publish data for On Time train punctuality at recorded station stops by station later in 2019-20. We are also hoping to include some additional data on train cancellations and at a sector level in some of the new tables. An update on publishing this information will be provided in the next quarterly release.

We welcome feedback on the content and format of this statistical release and the new data tables. Please email us on rail.stats@orr.gov.uk.

1. Train punctuality

Punctuality at each recorded station stop

These train punctuality statistics are new to this release for 2019-20 and measure the punctuality of trains at each recorded station stop.

A recorded station stop is defined as a location with both a planned timetable time and an actual recorded time where a train has stopped. Up to around 90% of all station stops are currently recorded. No estimates have been made for punctuality at the c.10% of station stops not recorded.

Punctuality at recorded station stops includes the punctuality of trains departing from their origin as well as the punctuality of trains arriving at their destination and all intermediate stops compared to scheduled times.

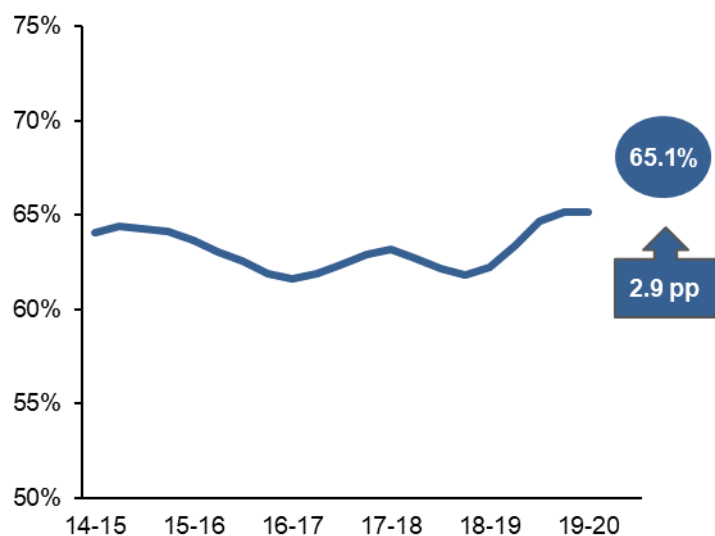
Planned stops where the train fails to stop at the location i.e. because the train has been cancelled in part or in full are excluded from these measures. **Train reliability** statistics can be found on page 6 of this release.

On Time measures the percentage of recorded station stops arrived at early or less than one minute after the scheduled time.

The **moving annual average (MAA)** reflects the proportion of trains on time in the past 12 months. In this release the On Time MAA performance for 2019-20 Q3 represents the performance for the year ending 2019-20 Q3 (i.e. 1 January 2019 to 31 December 2019).

A higher On Time score indicates better punctuality.

Figure 1.1: On Time, Great Britain, 2014-15 Q3 to 2019-20 Q3 (change shown is MAA for 2019-20 Q3 on 2018-19 Q3)

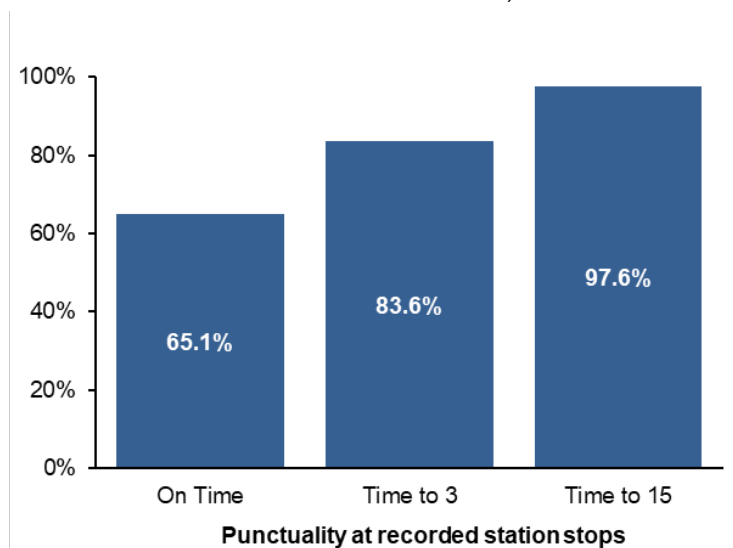


In the year ending 2019-20 Q3, 65.1% of recorded station stops in Great Britain (52.6 million out of 80.8 million) were arrived at on time. This was up 2.9 pp (i.e. better) compared with the previous year (ending 2018-19 Q3).

Time to 3 and **Time to 15** measure the percentage of recorded station stops arrived at early or less than three and 15 minutes respectively after the scheduled time.

The percentages are cumulative, so for example, the Time to 15 measure will include all the punctual (train) recorded station stops included in the Time to 3 measure.

Figure 1.2: Punctuality at recorded station stops, Great Britain, 2019-20 Q3 MAA



In the year ending 2019-20 Q3, 84.2% of recorded station stops were arrived at early or less than three minutes after the scheduled arrival time (Time to 3). This was up 2.0 pp on the previous year. For Time to 15, the figure was 98.4%, which was up 0.3 pp compared with the previous year.

As presented last quarter, the number of recorded station stops continues to increase (up 1.3 million or 7% in 2019-20 Q3 compared to 2018-19 Q3). This is the result of both more trains on the network and an increase in recording at station stops. We have undertaken some initial analysis to understand the effect of the increase in recorded station stops on these punctuality measures. This analysis suggests that the increase in recording at station stops partly explains the increase in the measures presented above; therefore, **the improvements in punctuality at recorded station stops are not entirely due to improved train performance**. We continue to undertake further work in this area to understand this better.

Public Performance Measure

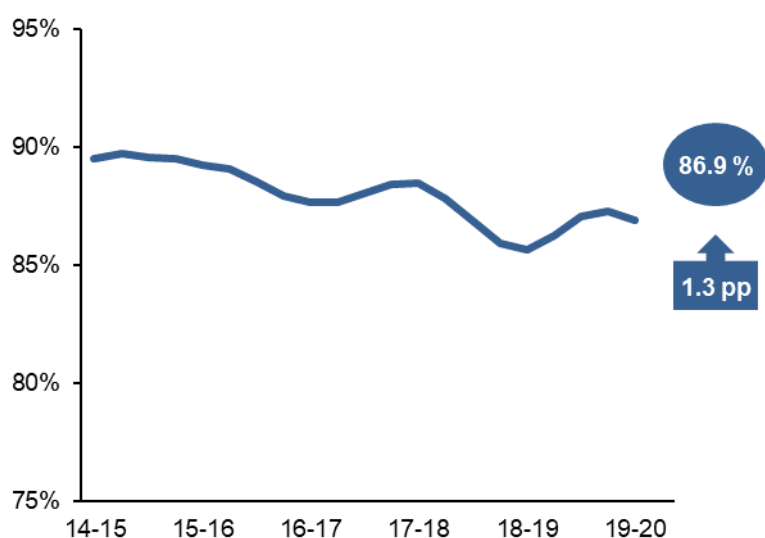
The lead measure of punctuality up to the end of Control Period 5 (April 2014 – March 2019) was the **Public Performance Measure (PPM)**. PPM is the proportion of trains arriving at their **final destination** early or less than five minutes after the scheduled time for London and South East, Regional and Scotland operators, or less than ten minutes for Long Distance operators. Where a train fails to stop at one or more booked calling points on the journey, the train is considered to have failed PPM. **A higher score indicates better punctuality.**

The **moving annual average (MAA)** reflects the proportion of punctual trains in the past 12 months. In Q4, the MAA also represents the PPM for the financial year.

In contrast, the new **On Time** measure calculates the proportion of **recorded station stops** arrived at early or less than one minute after the scheduled time. It will, therefore, almost always be a lower percentage than PPM.

The PPM MAA for Great Britain in the year ending 2019-20 Q3 was 86.9%. This was up 1.3 pp (i.e. better) compared with the previous year (ending 2018-19 Q3).

Figure 1.3: PPM, Great Britain, 2014-15 Q3 to 2019-20 Q3 (change shown is MAA for 2019-20 Q3 on 2018-19 Q3)



In the year to 2019-20 Q3, the increase in the Great Britain MAA of 1.3 pp was smaller than the 2.9 pp increase in the On Time MAA. There is likely to be a number of reasons for this given the differences between the measures. However, as set out in the previous section (page 4), this is partly explained by the increase in recording at station stops in the On Time dataset. As all trains planned are included in the PPM dataset only timetable changes affect the consistency of the PPM time series.

¹ Further information on sector operators can be found in the [Passenger rail performance quality report](#).

2. Train reliability

Cancellations

Cancellations is a new measure of reliability in this release for 2019-20. It only includes trains that have been cancelled and is completely separate from the punctuality measures at recorded station stops.

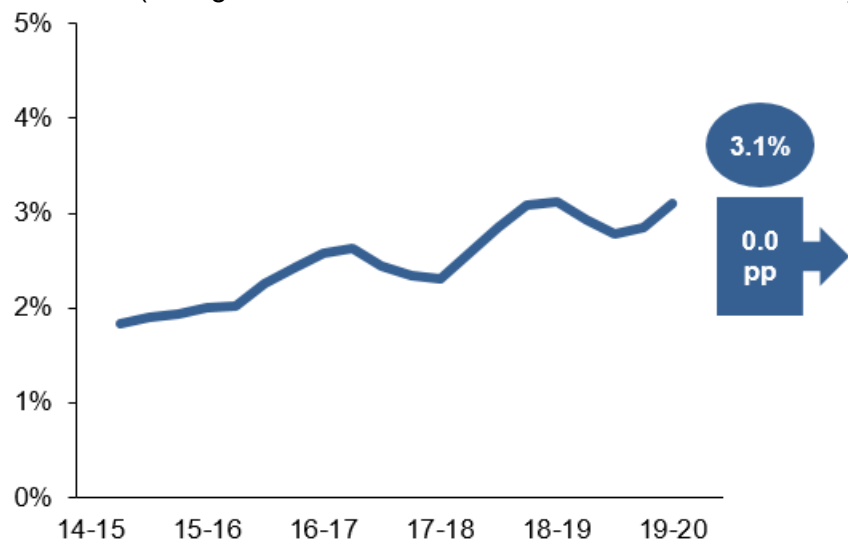
Prior to 2019-20, reliability was presented in this release by the Cancellations and Significant Lateness (CaSL) measure. We continue to publish [Periodic CaSL data at Great Britain, sector and train operating company \(TOC\) level](#).

A train is classed as a **full cancellation** if it ran less than half of its planned journey length.

A train is classed as a **part cancellation** if:

- It ran at least half but not all of its planned journeys length, or
- It completed its whole journey length but failed to stop at one or more of its planned stations.

Figure 2.1: Cancellations, Great Britain, 2014-15 Q3 to 2019-20 Q3 (change shown is MAA for 2019-20 Q3 on 2018-19 Q3)

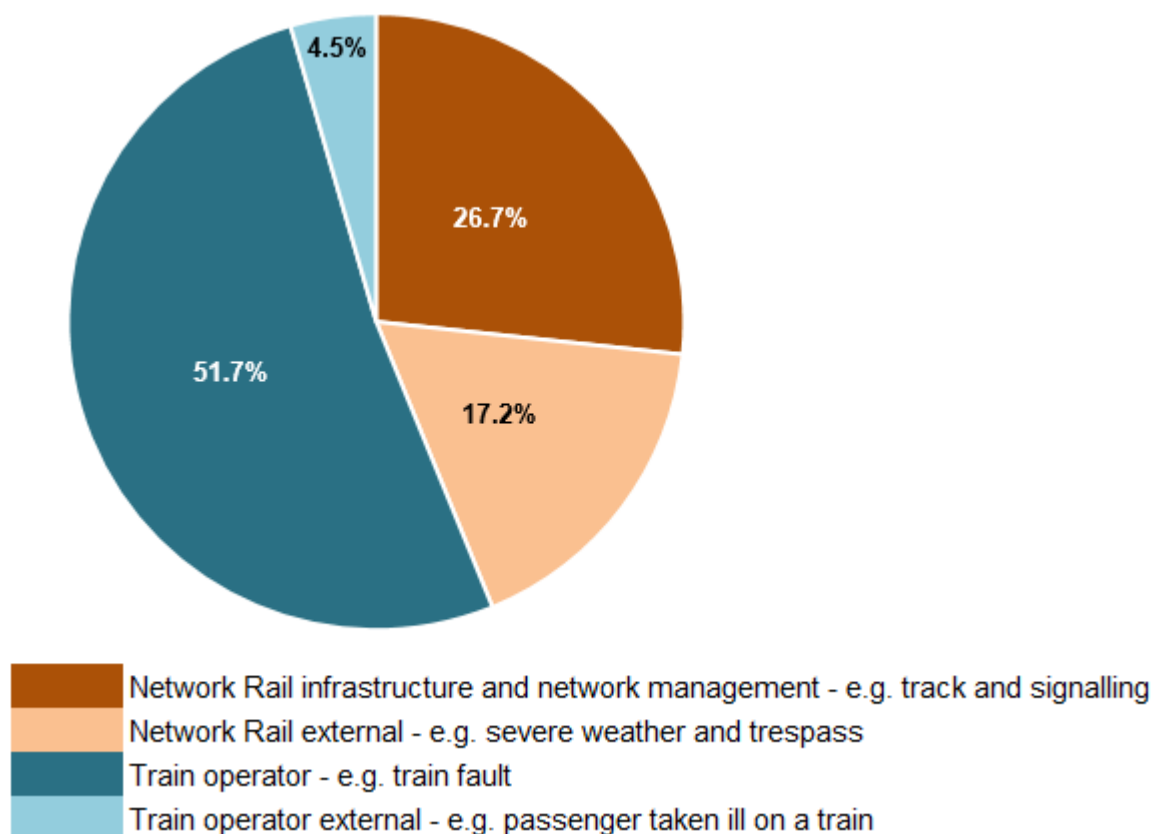


The Cancellations MAA for Great Britain in the year ending 2019-20 Q3 was 3.1% (a Cancellations score of 0.24 million out of 7.81 million trains planned). This is unchanged compared with the previous year.

Responsibility for Cancellations

In the year ending 2019-20 Q3, train operators were attributed with just over half of the cancellations that occurred (51.7%). Network Rail was attributed with 26.7% of cancellations for infrastructure and network management issues and 17.2% for external incidents.²

Figure 2.2: Proportion of Cancellations by responsibility category, Great Britain, 2019-20 Q3 MAA



² External incidents are attributed to the party considered best placed to mitigate their effects.

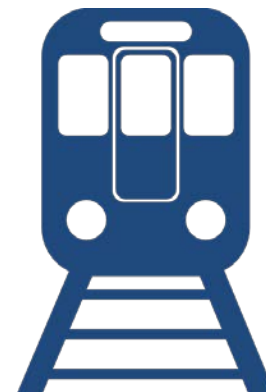
Severe disruption

Severe disruption counts the number of days on which a substantial number of services were cancelled. It is measured differently at the National and sub-operator levels.

A day counts as severely disrupted at the **National (GB)** level when the Cancellations score is 5% or more.

At the **sub-operator** level, a day counts as severely disrupted when the Cancellations score is 20% or more.

Nationally, there were **21** severely disrupted days in 2019-20 Q3, which was **17 more days** compared with 2018-19 Q3.



The 21 severely disrupted days (National) in 2019-20 Q3 were on 2, 3, 26, 28 and 29 October; 1, 2, 14, 15 and 29 November; 2, 10, 13, 14, 16, 18-21, 27 and 28 December.

On 2-3 October, damage to overhead wires between London St Pancras and Blackfriars severely disrupted Govia Thameslink Railway services and resulted in [significant disruption on these days](#). There was further disruption on 26 October and 1-2 November as a result of flooding in parts of the North West and Central areas of the country, as well as across the Midlands. Flooding and [adverse weather conditions also caused high levels of cancellations](#) on four consecutive severely disrupted days before Christmas (18-21 December).

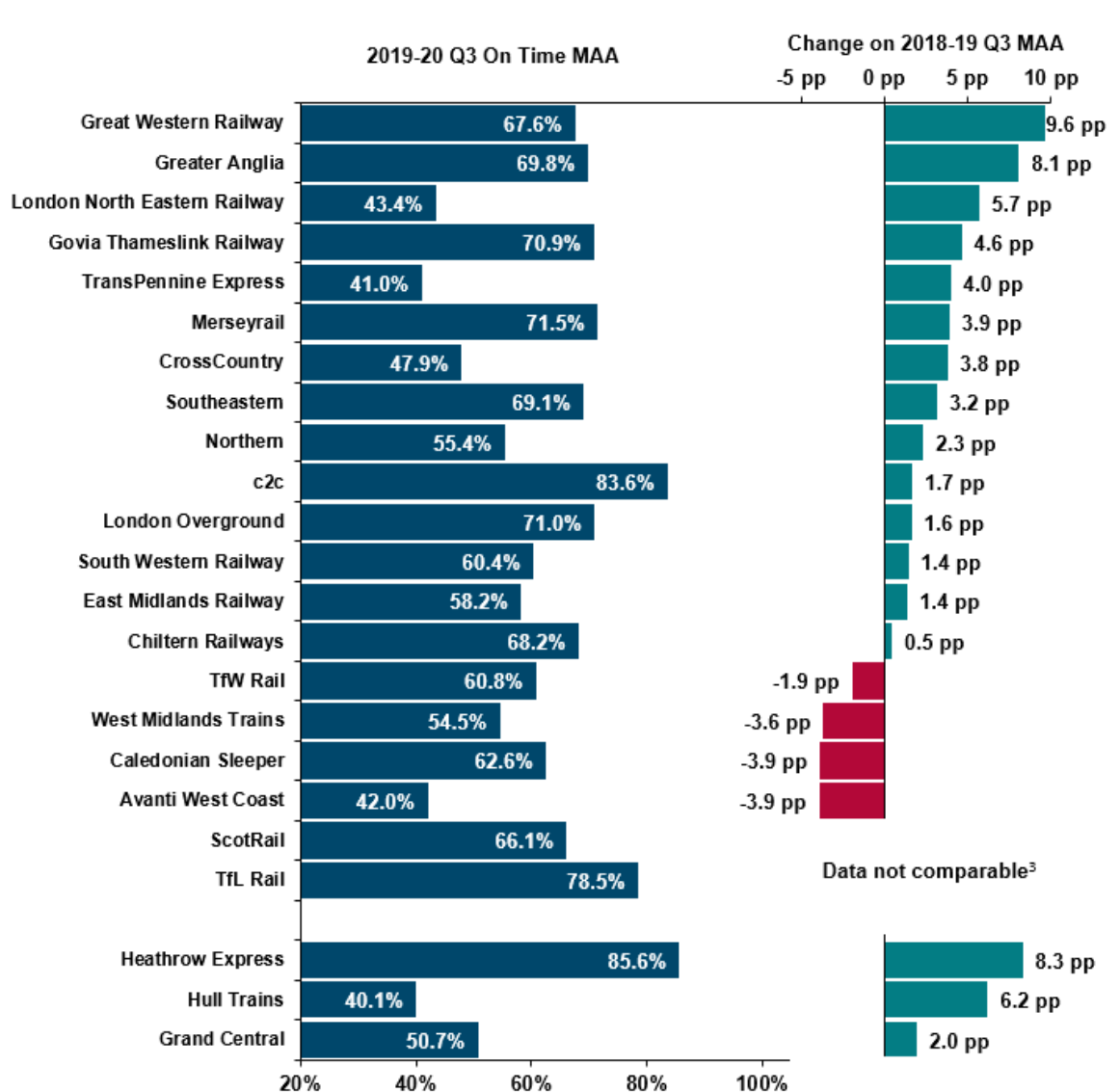
Periodic data on severe disruption at a National and sub-operator level can be found in Table 3.67.

3. Train operating company (TOC) analysis

The **punctuality** of 17³ TOCs improved in the year ending 2019-20 Q3 compared with a year earlier (year ending 2018-19 Q3). Great Western Railway (up 9.6 pp on the previous year), Heathrow Express (up 8.3 pp) and Greater Anglia (up 8.1 pp) had the largest increases in the **On Time moving annual average (MAA)**.

Of the four TOCs that had a lower On Time MAA in 2019-20 Q3 compared with a year earlier, Caledonian Sleeper and Avanti West Coast had the largest decreases (both 3.9 pp down on the previous year).

Figure 3.1: On Time MAA by TOC, 2019-20 Q3 and change on 2018-19 Q3

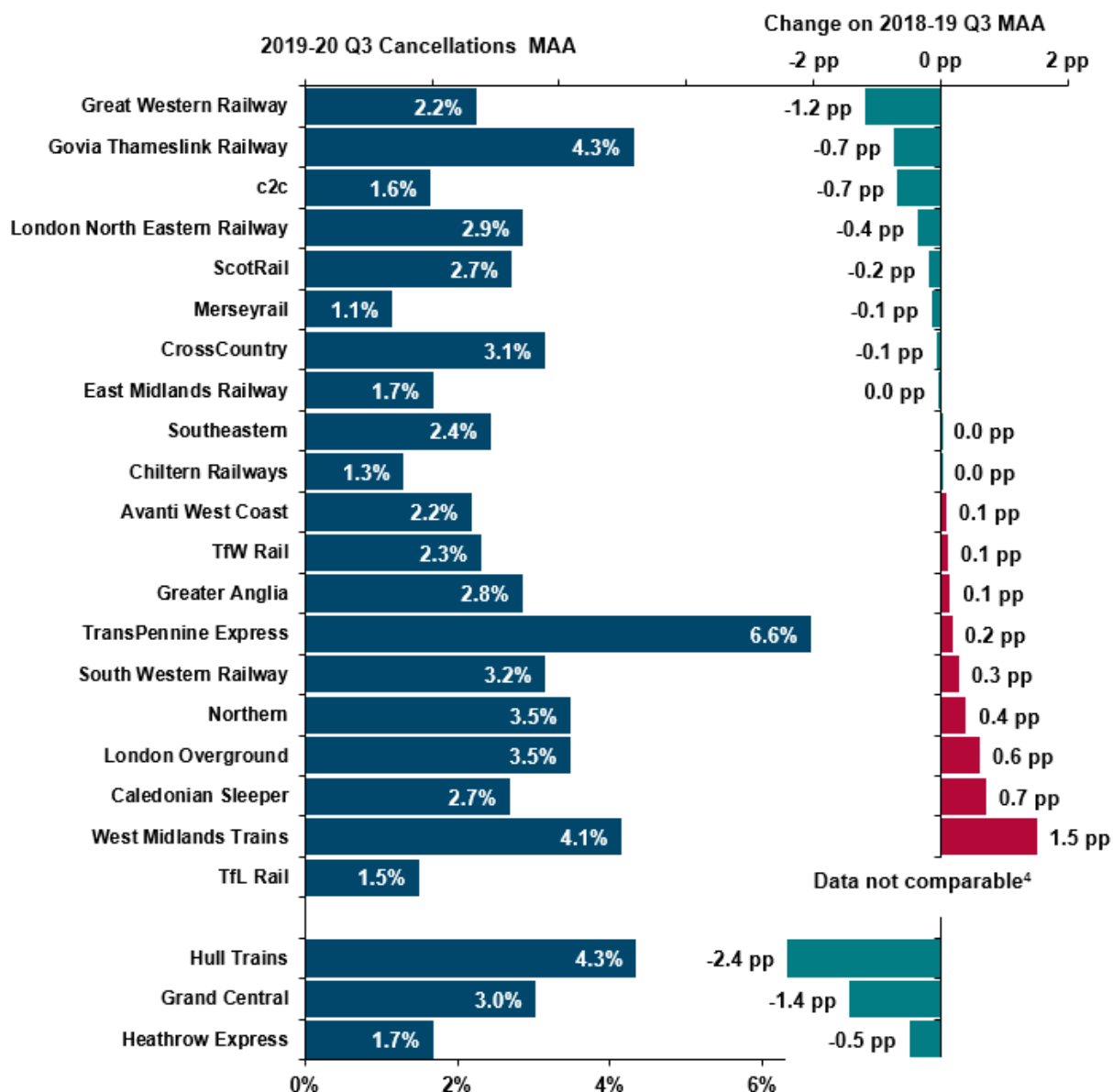


³ ScotRail figures are not comparable with the year ending 2018-19 Q3 due to additional station stops being recently added to the On Time dataset. TfL Rail figures are not comparable with the year ending 2018-19 Q3 due to Paddington to Heathrow services not being included in the On Time data prior to 27 May 2018.

The **reliability** of 10⁴ TOCs improved in the year ending 2019-20 Q3 compared with a year earlier (year ending 2018-19 Q3). Hull Trains (down 2.4 pp on the previous year), Grand Central (down 1.4 pp) and Great Western Railway (down 1.2 pp) had the largest decreases in the **Cancellations moving annual average (MAA)**.

Of the nine TOCs that had a higher Cancellations MAA in 2019-20 Q3 compared with a year earlier, West Midlands Trains (up 1.5 pp) had the largest increase.

Figure 3.2: Cancellations MAA by TOC, 2019-20 Q3 and change on 2018-19 Q3



Further information on individual train operating companies, including route maps, can be found via the [Rail Delivery Group website](#).

⁴ TfL Rail figures are not comparable with the year ending 2018-19 Q2 due to Paddington to Heathrow services not being included in the Cancellations data prior to 27 May 2018.

Delay minutes

Delay minutes are defined as the time lost between consecutive timing points. **Delay incidents** producing **three or more minutes** of delay on Britain's railways are attributed to either Network Rail or a train operator. As well as infrastructure and operational delays such as signal failures and overrunning engineering works, delays caused by external factors such as severe weather, vandalism, cable theft and trespass are also attributed to Network Rail. This is because they are considered best placed to mitigate for such incidents. Delay minutes are also adjusted to account for train cancellations.

For detailed information on Network Rail and train operator performance this quarter, please see our [new interactive performance charts](#) for 2019-20 on the ORR data portal.

Headlines for 2019-20 Q3 (October-December 2019) with comparisons to 2018-19 Q3:

- A 9.3 pp improvement in **Heathrow Express** Q3 punctuality (On Time) with decreases in delay minutes attributed to weather (down 74%) and non-track assets (down 58%).
- A 6.4 pp improvement in **Greater Anglia** Q3 punctuality (On Time) with decreases in delay minutes attributed to track delays (down 37%).
- A 6.0 pp improvement in **Hull Trains** Q3 punctuality (On Time) and 5.6 pp improvement in reliability (Cancellations) with decreases in delay minutes attributed to train operations (down 44%).
- An 11.2 pp deterioration in **Caledonian Sleeper** Q3 punctuality (On Time) with increases in delay minutes attributed to signalling system & power supply failures (up 87%) and external delays (up 196%).
- An 8.9 pp deterioration in **Avanti West Coast** Q3 punctuality (On Time) with increases in delay minutes attributed to overhead line equipment (OLE) faults (up 728%), severe weather (up 349%) and signalling system & power supply failures (up 73%).
- An 8.5 pp deterioration in **West Midlands Trains** Q3 punctuality (On Time) and 5.4 pp deterioration in reliability (Cancellations) with increases in delay minutes attributed to OLE faults (up 1,028%), severe weather (up 725%) and track faults (up 206%).

4. Other rail passenger performance measures

Consistent Region Measure – (Passenger) Performance

The Consistent Region Measure – (Passenger) Performance (CRM-P) monitors the passenger train delay attributed to Network Rail from incidents occurring in each [Network Rail Region](#). The measure is normalised by the train kilometres operated in the Region. Data for the CRM-P measure can be found in Table 3.30.

CRM-P is one of the key measures used by ORR for the routine monitoring and assessment of Network Rail's passenger rail performance. ORR monitors delivery against annual CRM-P targets and regulatory floors set for each of the five Network Rail Regions.

Average passenger lateness

Average passenger lateness measures the average lateness of a passenger as they alight from their train. It is estimated for each train by multiplying the number of passengers expected to alight at main stations by the punctuality to the nearest minute at those stops. The measure also takes into account passenger lateness resulting from cancelled trains. Data for average passenger lateness can be found in Table 3.70.

Further information on how each of the measures above are calculated can be found in the [Passenger rail performance quality report](#).

Annex 1 – Data collection and quality

Most of the data contained within this release are collected automatically from Network Rail's TRUST System (Train Running System on TOPs (Total Operation Processing System)). The latest data should be treated as provisional, as train operators provide Network Rail with information e.g. on cancellations, which can be updated over time. These updates are only provided at TOC level. As such, aggregations of sub-operator data can provide slightly different figures to those published at the operator level.

All of these measures are judged against what is known as the plan of the day. The train operator and Network Rail confirm this at 22:00 on the previous evening. Trains removed from the railway systems before this time are excluded from the measures presented in this statistical release and associated data tables.

This release contains information on the new punctuality and reliability measures for Great Britain since 2013-14, in addition to the long-standing Public Performance Measure (PPM) since 1997-98. The latest data in this release refers to 2019-20 Q3 (1 October to 31 December 2019).

Network Rail provides data to ORR within 21 days of the end of each of the 13 railway reporting periods. Where possible, Network Rail remaps historical data to match the railway franchises that exist today. The quarterly data in this release are derived by splitting the periodic data according to the number of days of the period that falls within each quarter. For example, the dates in railway period 4 cover both Q1 and Q2. When the quarterly data were calculated for 2018-19, 7/28 of the data were assigned to Q1 (covering 24 June to 30 June) and 21/28 of the data are assigned to Q2 (covering 1 July to 21 July).

The number of passenger trains planned increased by 33% between 1997-98 and 2018-19. In the same time, the [length of route open for passenger traffic](#) has not increased by a significant amount. The density of trains running on the network is, therefore, higher now than at the end of the last century. Therefore, the potential for disruption to spread around network has increased, while the ability for services to be recovered has been diminished. Furthermore, [twice as many passenger journeys were made in 2018-19 than in 1997-98](#). This may have increased station dwell times and harmed performance as it takes longer for passengers to board and alight trains at busy times.

Further details on railway reporting periods, data collection, the methodology used to calculate the data within this release, and details of which services are included in each sector, can be found in the [Passenger rail performance quality report](#).

Annex 2 – List of data tables available on the ORR data portal

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

All tables associated with this release can be found under Data Tables on the [passenger rail performance page](#).

Train punctuality

- Train punctuality at recorded station stops - quarterly by TOC – Table 3.80
- Train punctuality at recorded station stops - periodic by TOC – Table 3.65
- Public Performance Measure train punctuality - quarterly by TOC and sector – Table 3.42
- Public Performance Measure train punctuality - periodic by TOC and sector – Table 3.56

Train reliability

- Train cancellations - quarterly by TOC and responsibility category- Table 3.68
- Train cancellations - periodic by TOC and responsibility category – Table 3.66
- Severely disrupted days on the rail network - periodic by sub-operator – Table 3.67
- Cancellations and Significant Lateness on the rail network - periodic by TOC and sector – Table 3.7

Other tables

- Disaggregated train punctuality and reliability performance on the rail network - periodic by sub-operator – Table 3.9
- Average passenger lateness on the rail network - periodic by TOC and sector – Table 3.70
- Delay minutes on the rail network - periodic by TOC and responsibility category – Table 3.20
- Historic trains planned, PPM and CaSL – quarterly by TOC – Table 3.58
- Consistent Region Measure - (Passenger) Performance - periodic by Region - Table 3.30

Freight rail performance data tables can be found via the [Freight rail usage and performance page](#) on the data portal.

Revisions

There have been two minor revisions to the previously published dataset. Table 3.68 was displaying incorrect figures for cancellations (MAA) in Scotland for three quarters. Table 3.80 was displaying incorrect figures for recorded station stops (moving annual total), On Time, Time to 3 and Time to 15 (MAAs) for Great Britain and Scotland for three quarters. Further details on historic revisions can be found on the [Revisions log](#).

Annex 3 – Punctuality and reliability performance by train operating company (TOC) and European Comparisons

The data provided in Table 3.80 (Train punctuality at recorded station stops) and Table 3.68 (Train cancellations) show the railway as it exists today. Historical data are shown for the existing TOCs as far back as data are available. For some TOCs, data are available as far back as 1997-98. While comparisons can be made with historical data, it should be noted that the service provided by many operators has changed substantially.

As an example, Virgin Trains West Coast (VTWC) planned to run 55,600 trains in 1997-98. By 2012-13 this figure had almost doubled to reach 110,400. In December 2013, however, VTWC reconfigured their timetable to extend Scotland to Birmingham services to London in place of some Birmingham to London services. A change in service composition such as this would have had an effect on the overall level of performance of the TOC.

Trains planned, PPM and CaSL performance of the TOCs that existed at the time is available on Table 3.58.

Sub-operator level data for Train Operating Companies

Train punctuality and reliability performance data by sub-operator can be found in Table 3.9 (Disaggregated train punctuality and reliability performance on the rail network).

In some cases, individual TOCs are broken down into different sub-operators under different brand names e.g. Govia Thameslink Railway operates as Gatwick Express, Great Northern, Southern, and Thameslink.

Four operators provide services in more than one sector: East Midlands Trains, Great Western Railway, Greater Anglia, and West Midlands Trains. Each of these TOCs is broken down into different sub-operators corresponding to each sectoral component.

Recent changes to train operating companies

East Midlands Railway, which is operated by Abellio, replaced East Midlands Trains (Stagecoach) as the operator of the East Midlands franchise on 18 August 2019. In this and subsequent releases, the train operator will be referred to as East Midlands Railway.

Avanti West Coast replaced Virgin Trains West Coast as the operator of the InterCity West Coast franchise on 8 December 2019. For this and future releases, the train operator will be referred to as Avanti West Coast.

Timetable change 20 May 2018

Twice every year, in May and December, a new system-wide timetable is produced for the railway network. In May 2018 on some routes and for some operators this change caused disruption, in particular for Govia Thameslink Railway, Northern, and TransPennine Express. This timetable change occurred halfway through 2018-19 Q1 (which covers April, May, June), and so will have had an impact on punctuality and reliability figures for that quarter. [ORR's inquiry into the May 2018 timetable disruption](#) was published on 7 December 2018.

European Comparisons

[Comparisons with railways in the rest of Europe](#) are available for the calendar years 2014 to 2016. For trains in Scotland and the Regional and London and South East sectors, 87.8% of services in 2016 arrived less than five minutes after their scheduled arrival time at their final destination. This ranks Britain 19th out of 25 countries. For long distance services, 77.5% arrived less than five minutes after their scheduled arrival time at their final destination. This ranks Britain 15th out of 23 countries.

Annex 4

Statistical Releases

This publication is part of ORR's [National Statistics](#) accredited releases, which consist of:

Annual

- Rail Finance
- Rail Fares Index
- Rail Safety Statistics
- Rail Infrastructure and Assets
- Rail Emissions
- Regional Rail Usage

Quarterly

- Passenger Rail Performance
- Freight Rail Usage and Performance
- Passenger Rail Usage
- Passenger Rail Service Complaints

In addition to the above, ORR publishes the following Official Statistics on the [ORR data portal](#):

Annual

- Estimates of Station Usage
- Train Operating Company Key Statistics
- Rail Statistics Compendium
- Occupational Health

Quarterly

- Signals passed at danger (SPADS)
- Delay Compensation Claims
- Disabled Person's Railcard (DPRC)
- Passenger assistance

A full list of publication dates for the next twelve months can be found in the [release schedule](#) on the data portal.

The Department for Transport (DfT) also publishes a range of rail statistics which can be found at [DfT Rail Statistics](#). For example, Rail passenger numbers and overcrowding on weekdays in major cities.

Transport Focus publish the [National Rail Passenger Survey](#) (NRPS).

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.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm - Office for Statistics Regulation (OSR). The OSR considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is ORR's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the OSR promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Our [statistical releases were assessed in 2012](#) and hold National Statistics status. Since our assessment we have improved the content, presentation and quality of our statistical releases. Also, in July 2019 we launched our new data portal. Therefore in late 2019 we worked with the 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 in 2012. OSR identified some areas that we could consider that may enhance the value of the statistics further and we will be working on these.

For more information on how we adhere to the Code please see the [UKSA Code of Practice page on the ORR data portal](#).

For more details, please contact the Statistics Head of Profession Lyndsey Melbourne at rail.stats@orr.gov.uk.



© Crown copyright 2020

This publication is licensed under the terms of the [Open Government Licence v3.0](#) except where otherwise stated.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available on the [ORR data portal](#)

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