Passenger rail performance
2021-22 Quarter 2

9 December 2021

Performance during the second quarter of financial year 2021-22 continued to be affected by the coronavirus (COVID-19) pandemic. During 2020-21, train service and passenger levels on the network were at historically low levels. This led to improvements in both punctuality and reliability. In 2021-22 Q2, trains planned increased by 4% compared with the second quarter of last year. This, together with an increase in passengers has contributed to a deterioration in performance this quarter, however it is still better than before the pandemic.

Great Britain 2021-22 Q2 (July to September 2021)		Compared with 2020-21 Q2		Compared with 2019-20 Q2	
On Time	74.3%	⬇	-4.9pp	⬆	9.4pp
PPM	90.2%	⬇	-3.1pp	⬆	3.8pp
Cancellations score	3.4%	⬆	1.2pp	➡	0.0pp

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 arrival time) in Great Britain was **74.3%** in 2021-22 Q2.

Using the **Public Performance Measure (PPM)**, **90.2%** of trains were punctual (early or less than 5/10 minutes after the scheduled arrival time) at their final destination in 2021-22 Q2.

The proportion of trains classified as **Cancellations** in 2021-22 Q2 was **3.4%**. The cancellation measure is a weighted score which counts full cancellations as one and part cancellations as half.

All data tables, a quality and methodology report and an interactive dashboard associated with this release are published on the Passenger rail performance page of the data portal. Key definitions are in annex 1 of this release.

1. Background

Impact of the pandemic

Performance during 2021-22 Q2 (1 July to 30 September 2021) continued to be affected by the pandemic. In 2021-22 Q2, there were 1.71 million trains planned in Great Britain. This represents a 4% increase on the second quarter of last year (2020-21 Q2), though is still down 14% compared with the second quarter of 2019-20 or usual levels. This follows the removal of the majority of restrictions on 19 July.

Figure 1.1   Trains planned remained at lower levels but have increased since the start of the pandemic

Trains planned (millions), Great Britain, 2017-18 Q1 to 2021-22 Q2 (Table 3123)
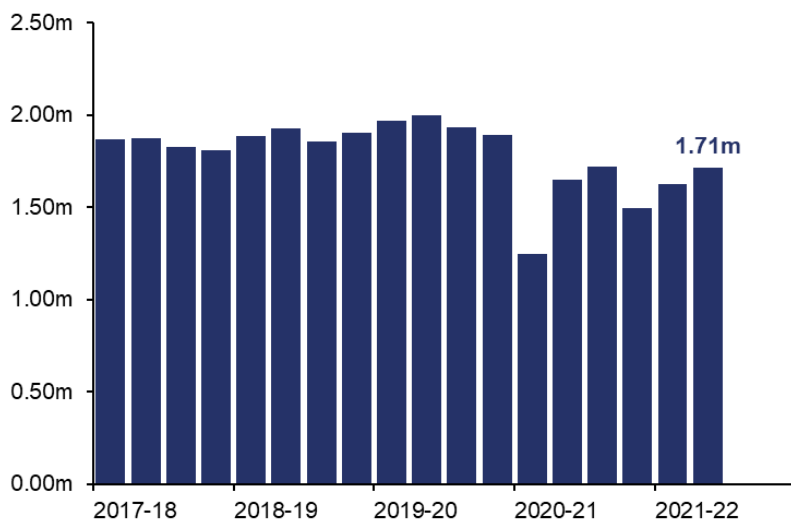
There has also been a reduction in the number of passengers since the start of 2020-21. The Department for Transport publishes daily statistics on transport use by mode, compared with the equivalent week in 2019. According to these estimates, in the first quarter of 2020-21 passenger usage reached as low as 4% of equivalent weekly levels in 2019. Since then, there have been substantial increases in passenger numbers. During 2021-22 Q2, the number of rail passenger journeys continued to increase, ranging from 47% to 70% of the equivalent weekly levels in 2019.

The reduction in trains planned and passengers at the start of 2020-21 led to improvements in punctuality and reliability relative to pre-coronavirus years. However, the subsequent recovery in train and passenger numbers in recent quarters has resulted in some deterioration in punctuality and reliability compared with the same quarter last year. We have therefore focused the presentation of the latest quarterly statistics in this release compared with the second quarter of both 2019-20 and 2020-21.

2. Train punctuality

Punctuality at each recorded station stop

In 2021-22 Q2, 74.3% of recorded station stops in Great Britain were arrived at **On Time** (early or less than one minute after the scheduled arrival time). This was 4.9 percentage points (pp) lower (i.e. worse) than the same quarter a year earlier (2020-21 Q2).

Despite the decrease, this quarter was still 9.4pp higher than the same quarter two years ago (2019-20 Q2).

Figure 2.1   This quarter was the second highest Q2 On Time percentage since the time series began

On Time, Great Britain, 2017-18 Q1 to 2021-22 Q2 (Table 3133)
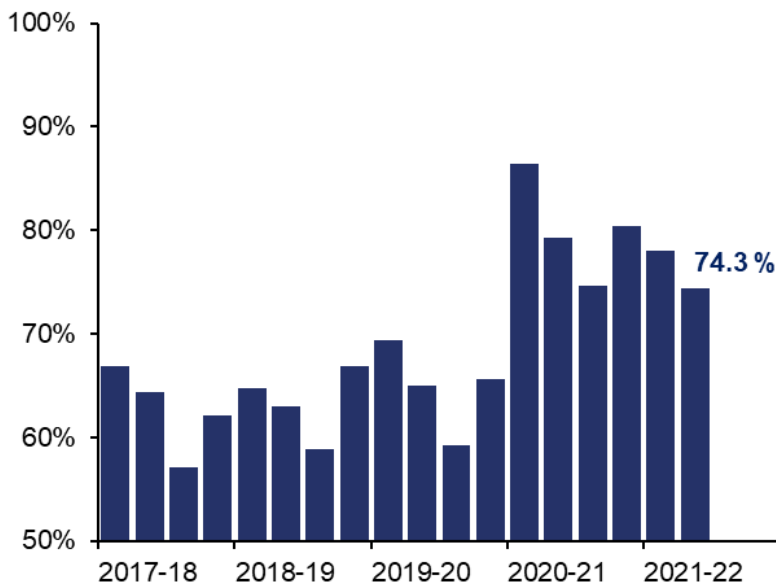
The **moving annual average (MAA)** reflects the proportion of trains on time in the past 12 months. In this release the 2021-22 Q2 MAA reflects performance from 1 October 2020 to 30 September 2021. For the 2021-22 Q2 MAA, 76.7% of recorded station stops in Great Britain (55.3 million out of 72.1 million) were arrived at On Time. This was up 5.5pp (i.e. better) compared with the previous year (ending 2020-21 Q2). Despite a fall in the last two quarters, the On Time MAA percentage remains at a historically high level.

Further train punctuality data is available in Table 3133. This includes the percentage of recorded station stops arrived at within 3 minutes (Time to 3) and within 15 minutes (Time to 15) after the scheduled arrival time.

Public Performance Measure (PPM)

In 2021-22 Q2, the **Public Performance Measure (PPM)** for Great Britain was 90.2%. This was 3.1pp lower (i.e. worse) than the same quarter last year (2020-21 Q2). Despite the decrease, this quarter was still 3.8pp higher than the same quarter two years ago (2019-20 Q2).

Figure 2.2   PPM remains higher than before the pandemic

PPM, Great Britain, 2017-18 Q1 to 2021-22 Q2 (Table 3113)
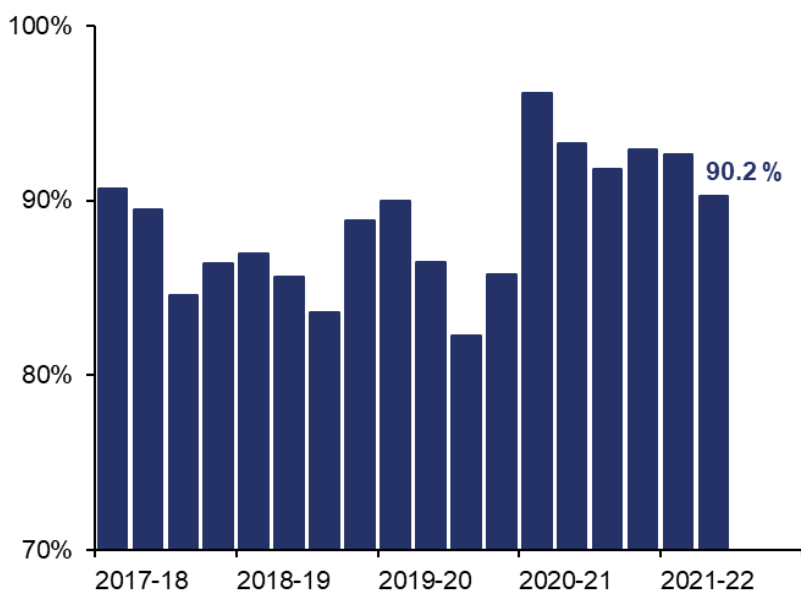
The PPM for 2021-22 Q2 MAA was 91.9%. This was up 3.3pp (i.e. better) compared with a year earlier (ending 2020-21 Q2). This increase was smaller than the improvement seen in the On Time MAA (up 5.5pp).

Other punctuality measures

Delay minutes

Delay minutes measure the time lost between consecutive timing points on the rail network. In 2021-22 Q2, national (GB) train delay minutes attributed to Network Rail increased by 18% compared with the same quarter last year (2020-21 Q2). Delay minutes attributed to operators increased by 58% compared with a year earlier.

For detailed information on Network Rail and operator performance this quarter, please see our interactive performance dashboard on the data portal.

Consistent Region Measure – (Passenger) Performance

The Consistent Region Measure – (Passenger) Performance (CRM-P) measures passenger train delay attributed to Network Rail from incidents occurring in each Network Rail region, per 100 train kilometres.

CRM-P is one of the key measures used by ORR for 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. Data for CRM-P can be found in Table 3174.

Average passenger lateness

Average Passenger Lateness (APL) measures the average lateness of a passenger as they alight from their train. Data for APL can be found in Table 3144.

3. Train reliability

Cancellations

In 2021-22 Q2, the proportion of trains classified as **Cancellations** was 3.4%. Of 1.71 million trains planned, 0.04 million were full cancellations and 0.03 million were part cancellations. The Cancellations measure is a weighted score counting full cancellations as one and part cancellations as half. The 2021-22 Q2 score was 1.2pp higher (i.e. worse) than the same quarter a year earlier (2020-21 Q2). However, this quarter was unchanged from the same quarter two years ago (2019-20 Q2).

Figure 3.1   Cancellations increased to a historically high level following relatively low levels over the previous five quarters

Cancellations, Great Britain, 2017-18 Q1 to 2021-22 Q2 (Table 3123)
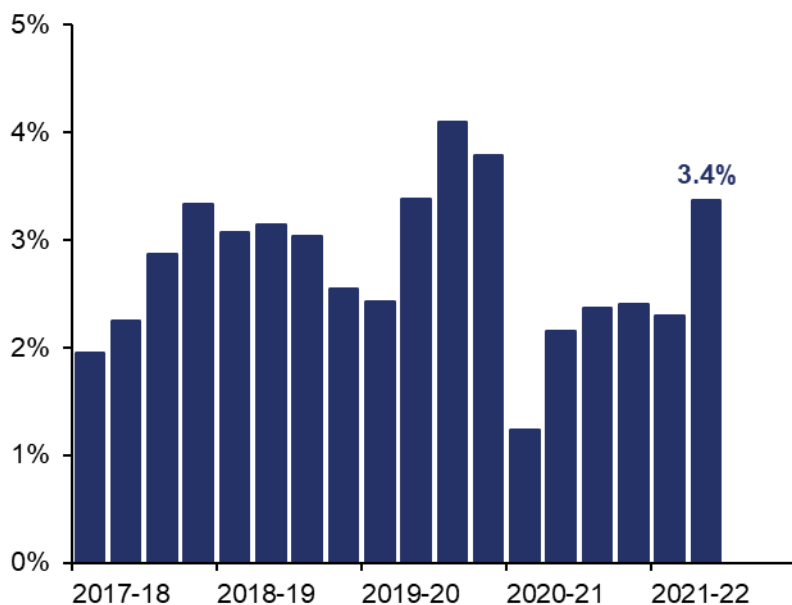
The cancellations MAA for the year ending 2021-22 Q2 was 2.6%. This was down 0.4pp (i.e. better) compared with a year earlier (ending 2020-21 Q2).

Train cancellations Table 3123 (quarterly) and Table 3124 (periodic) include data on the number of full and part cancellations by operator.

Responsibility for cancellations

In 2021-22 Q2, of all attributed cancellations, operators were attributed with responsibility for 66.3% of cancellations that occurred. Network Rail was attributed with responsibility for 19.7% of cancellations for infrastructure and network management issues, with another 14.0% attributed to external incidents such as severe weather or trespassing. External incidents are attributed to the party considered best placed to mitigate their effects.

Figure 3.2   Operators were attributed with around two thirds of all cancellations

Proportion of cancellations by responsibility category, Great Britain, 2021-22 Q2 (Table 3123)
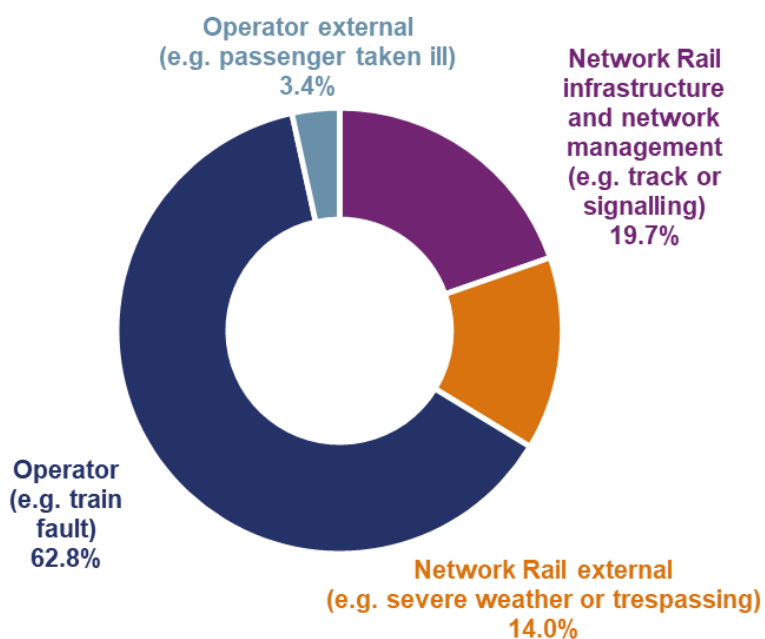
Severe disruption

A **Severely disrupted day** at a national (GB) level occurs when the cancellations score is 5% or more.

> **Nationally**, there were **13** severely disrupted days in 2021-22 Q2, which was **10 more days** than in 2020-21 Q2.

The 13 severely disrupted days in 2021-22 Q2 were on 11, 12, 17 and 19 to 25 July, 7 and 14 August and 11 September.

On 11 July, the vast majority of cancellations were due to traincrew issues. On 12 July, flooding affecting the London area led to a high number of cancellations. This combined with other causes contributed to a cancellation rate of 8.2% that day, the highest daily rate in the quarter. In the second half of July, high temperatures on several days are likely to have contributed to higher levels of signalling and points failures and fleet issues. These together with traincrew issues led to high cancellation rates on a number of days in the second half of July. On 25 July, severe flooding impacted the railway in the north and east of London.

On 7 August there were flooding issues in Scotland and traincrew issues across the network. The latter, together with a fleet incident at Farringdon caused high cancellation levels on 14 August.

On 11 September a fatality at Purley and ongoing traincrew issues contributed to a cancellation rate of 6.3% that day.
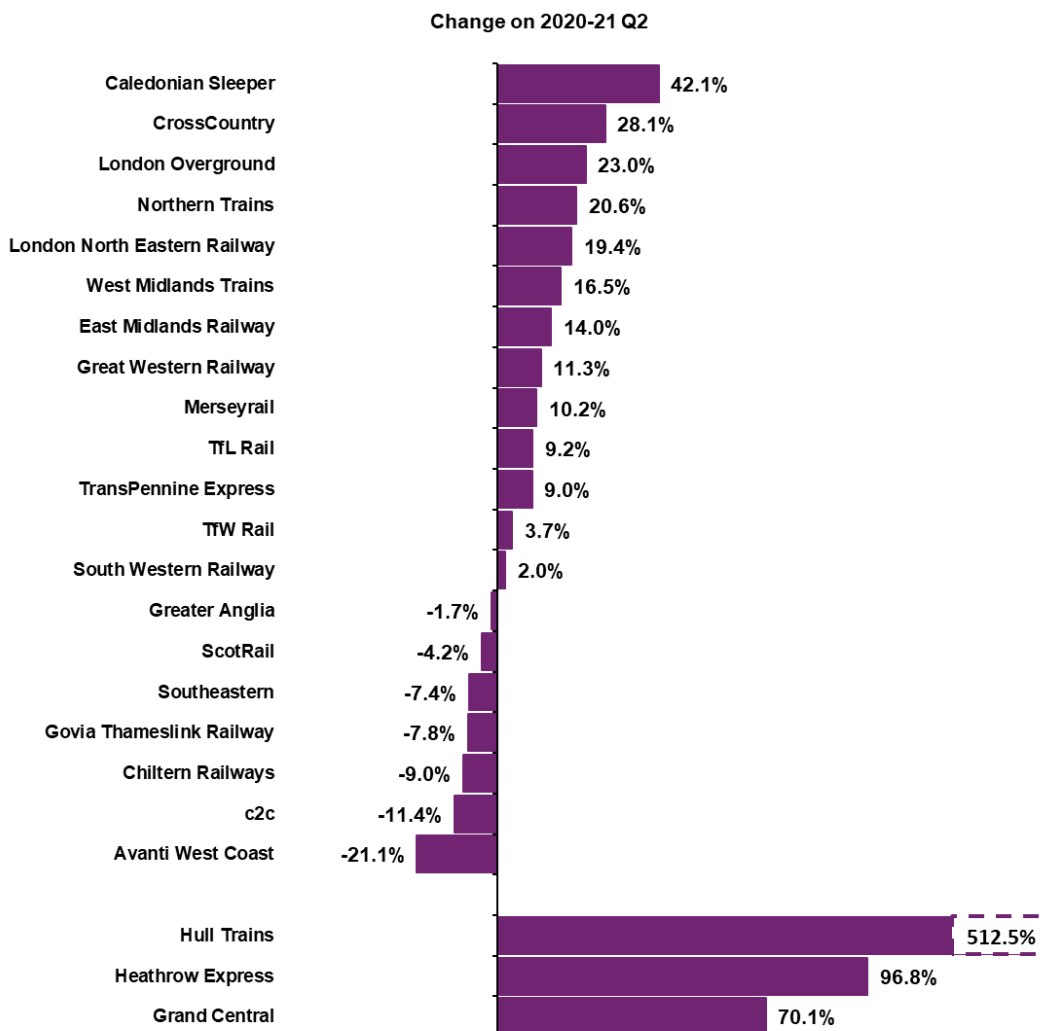
Periodic (four-weekly) data on severe disruption at a national and sub-operator level can be found in Table 3157.

4. Train operator analysis

In 2021-22 Q2, trains planned increased for 16 of the 23 operators compared with the same quarter last year. The changes in trains planned varied by operator from an increase of 512.5% for Hull Trains to a decrease of 21.1% for Avanti West Coast. There are also [differences in passenger rail usage changes by operator](). These changes in train and passenger numbers should be considered when comparing changes in levels of punctuality and reliability by operator over the last year.

Figure 4.1   Trains planned increased for around two thirds of operators this quarter

Percentage change in trains planned by operator, 2021-22 Q2 on 2020-21 Q2 (Table 3123)

Change on 2020-21 Q2

| Operator	Change
Caledonian Sleeper	42.1%
CrossCountry	28.1%
London Overground	23.0%
Northern Trains	20.6%
London North Eastern Railway	19.4%
West Midlands Trains	16.5%
East Midlands Railway	14.0%
Great Western Railway	11.3%
Merseyrail	10.2%
TfL Rail	9.2%
TransPennine Express	9.0%
TfW Rail	3.7%
South Western Railway	2.0%
Greater Anglia	-1.7%
ScotRail	-4.2%
Southeastern	-7.4%
Govia Thameslink Railway	-7.8%
Chiltern Railways	-9.0%
c2c	-11.4%
Avanti West Coast	-21.1%
Hull Trains	512.5%
Heathrow Express	96.8%
Grand Central	70.1%

Hull Trains suspended services until 21 August during 2020-21 Q2, with only 173 trains planned during that quarter compared with 1,058 services in 2021-22 Q2. Similarly, Grand Central suspended services until 26 July during 2020-21 Q2.

Punctuality

Figure 4.2   Punctuality of most operators worsened this quarter

On Time by operator, 2021-22 Q2 and change on 2020-21 Q2 (Table 3133)
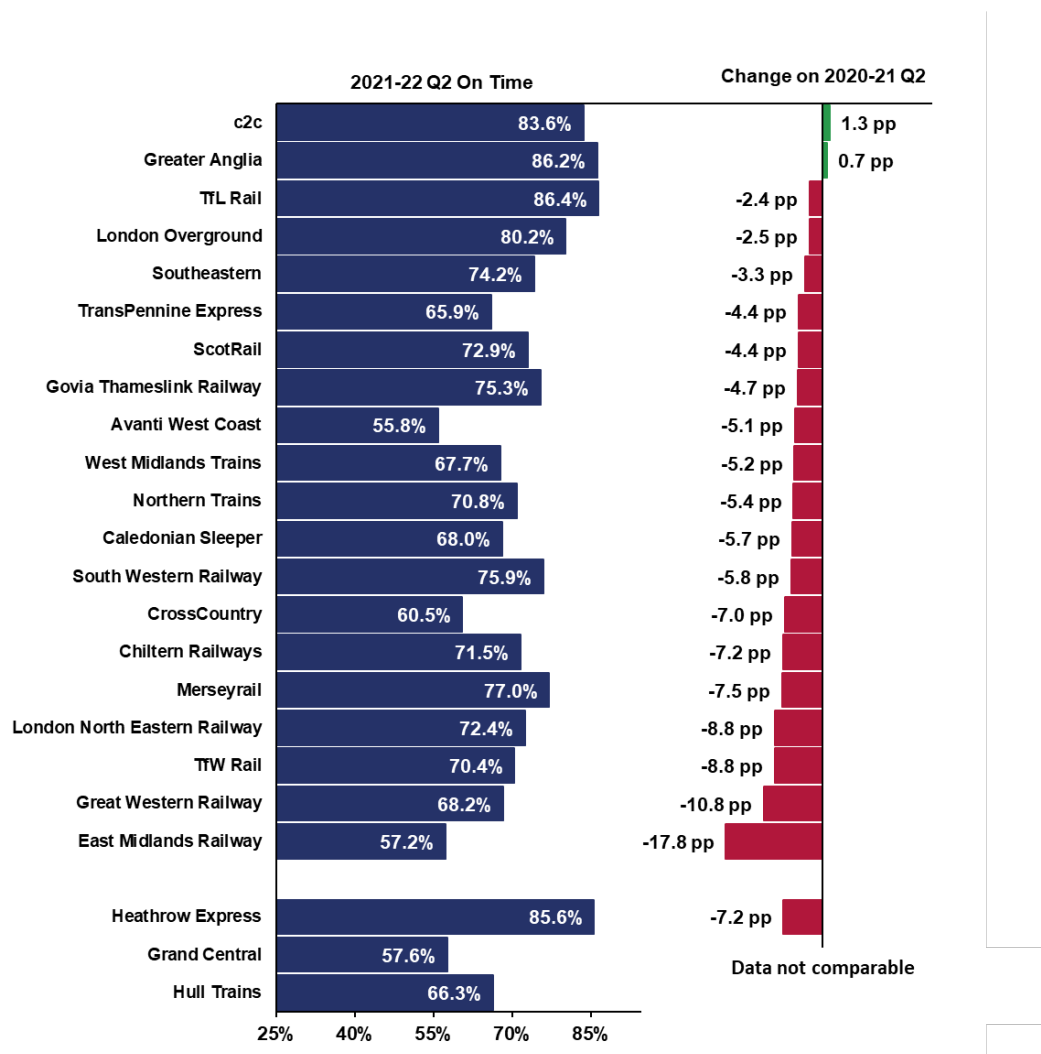
Punctuality improved for two operators with higher On Time percentages in 2021-22 Q2 than in the same quarter the previous year. They were c2c (up 1.3pp) and Greater Anglia (up 0.7pp). East Midlands Railway (down 17.8pp compared with the same quarter last year) and Great Western Railway (down 10.8pp) had the largest decreases in On Time percentages.

As stated above, Grand Central and Hull Trains suspended services during 2020-21 Q2. As a result, changes in punctuality and reliability in 2021-20 Q2 compared with 2020-21 Q2 are not comparable.

Reliability

Figure 4.3   Reliability of most operators worsened this quarter

Cancellations by operator, 2021-22 Q2 and change on 2020-21 Q2 (Table 3123)
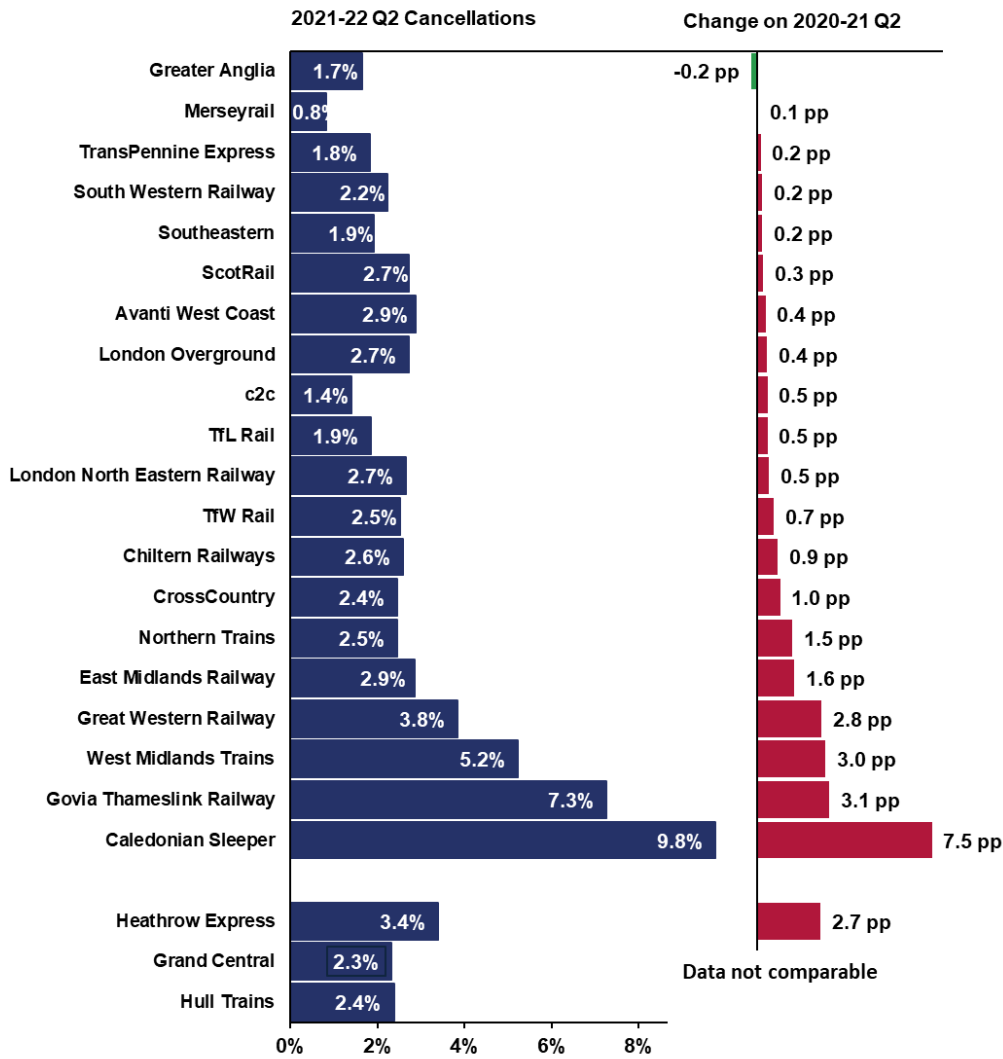
Reliability improved for one operator, Greater Anglia (down 0.2pp), with a lower percentage of cancellations compared with the same quarter last year. Caledonian Sleeper (up 7.5pp compared with the same quarter last year) and Govia Thameslink Railway (up 3.1pp) had the largest increases in cancellations.

Further information on individual operators, including route maps, can be found via the Rail Delivery Group website.

5. Annexes

Annex 1 – Definitions

- **On Time** measures the percentage of recorded station stops arrived at early or less than one minute after the scheduled time (as per timetable). Early trains are classified as 'on time'. *A higher On Time score indicates better punctuality.*

- **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.

- **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.

- The **moving annual average (MAA)** reflects the proportion of trains On Time (or cancelled if referring to cancellations measure) in the past 12 months.

- **Public Performance Measure (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. For two of the non-franchised operators (Hull Trains and Grand Central), it is less than ten minutes, while Heathrow Express services it is less than five minutes. 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.*

- **Delay minutes** are defined as the time lost between consecutive timing points on the rail network. 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.

- **Consistent Region Measure – (Passenger) Performance (CRM-P)** is defined as the delay attributed to Network Rail from incidents occurring in each Network Rail Region, per 100 train kilometres. *A lower score reflects better performance.*

- **Average Passenger Lateness (APL)** 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.

- **Cancellations** measures the amount of trains that are cancelled as a percentage of trains planned. This would include trains missing stations and/or not reaching their destination. The cancellations measure is a score which weights full cancellations as one and part cancellations as half. *A lower cancellations score indicates better reliability.*

- **Responsibility for cancellations**: A delay attribution process is used to apportion responsibility for cancellations and any one cancellation can be split between multiple causes of delay. **External incidents** are attributed to the party considered best placed to mitigate their effects.

- 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.

Further information on each of these measures and other definitions can be found in the quality and methodology report on the [Passenger rail performance page](#) of the data portal.

Annex 2 – Quality and methodology

Data source

Most of the data contained within this statistical 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 operator 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.

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). 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.

Punctuality and reliability by operator

The data provided in Table 3133 (Train punctuality at recorded station stops) and Table 3123 (Train cancellations) show the railway as it exists today. Historical data are shown for the existing operators as far back as data are available. For some operators, 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, in 1997-98 Virgin Trains West Coast (VTWC) planned to run 55,600 trains. By 2012-13 this figure had almost doubled to reach 110,400. In December 2013, however, the operator 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 operator.

Trains planned, PPM and CaSL performance of the operators that existed at the time is available in Table 3103.

Sub-operator level data

Train punctuality and reliability performance data by sub-operator can be found in Table 3167 (Disaggregated train punctuality and reliability performance on the rail network).

In some cases, individual operators 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 operators is broken down into different sub-operators corresponding to each sectoral component.

Recent changes to train operators

From 7 February 2021, the Welsh Government took the Wales and Borders franchise (TfW Rail) into public ownership. The operator continues to be referred to as TfW Rail in this release.

How these statistics can and cannot be used

- Monitoring the punctuality and reliability performance of passenger rail services in Great Britain
- Supporting high level understanding of why performance has changed on the rail network
- Comparing rail performance by passenger operator (noting that performance across the rail network will have different challenges e.g. busier sections)
- Monitoring performance over time, broadly based on the railway as it exists today

- Monitoring passenger rail usage (refer to Passenger rail usage statistics)
- Monitoring freight rail performance (refer to Freight rail usage and performance statistics)
- Monitoring the impact of franchise changes on performance (historical data is generally presented based on the railway as it exists today)

Revisions

There have been revisions to the data in Table 3103 Historic trains planned, PPM and CaSL since the last quarterly publication. All data in this table from 2016-17 onwards has been revised due to the identification of an error in the way this table was produced. Further details on historic revisions can be found in the Revisions log.

Further details on railway reporting periods, data collection, the methodology used to calculate the data within this release can be found in the Passenger rail performance quality and methodology report.

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 Passenger rail performance page.

Train punctuality

- Train punctuality at recorded station stops by operator – Table 3133
- Train punctuality at recorded station stops by operator (periodic) – Table 3138
- Public Performance Measure by operator and sector – Table 3113
- Public Performance Measure by operator and sector (periodic) – Table 3114

Train reliability

- Trains planned and cancellations by operator and cause – Table 3123
- Trains planned and cancellations by operator and cause (periodic) – Table 3124
- Days of severe disruption by sub-operator (periodic) – Table 3157
- Cancelled and Significantly Late by operator and sector (periodic) – Table 3194

Other tables

- Disaggregated train punctuality and reliability performance by sub-operator (periodic) – Table 3167
- Average passenger lateness by operator and sector (periodic) – Table 3144
- Delay minutes by operator and cause (periodic) – Table 3184
- Historic passenger trains planned, PPM, and CaSL - quarterly by operator – Table 3103
- Consistent Region Measure (Passenger) Performance by Region (periodic) – Table 3174

Changes to data tables

There will be no further updates to the following data tables:

- Passenger trains planned by operator (periodic) – Table 3104
- Trains cancelled by operator (periodic) – Table 3128

These tables continue to be available on our Passenger rail performance page. Periodic trains planned and cancellations data will continue to be updated in Table 3124.

Other related statistics

Freight rail performance data tables are published on the [Freight rail usage and performance page](#) on the data portal.

The Department for Transport (DfT) also publishes [rail statistics](#). For example, Rail passenger numbers and overcrowding on weekdays in major cities. Transport Focus publish the [National Rail Passenger Survey](#) (NRPS).

European comparisons

Due to differences in how passenger rail performance 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](#).

[Historic comparisons with railways in the rest of Europe](#) are available for 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 – 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.