Passenger rail performance

1 October to 31 December 2022

2 March 2023

Background:

This quarterly statistical release contains information on passenger rail performance measures of punctuality and reliability for Great Britain.

These include: **On Time** at every recorded station stop, **train delays**, **PPM**, **Cancellations** and **Severely disrupted days.**

It also contains more detailed information by train operator.

Source: Network Rail

Latest quarter: 1 October to 31 December 2022

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Next publication:
25 May 2023

Passenger rail performance in the latest quarter (1 October to 31 December 2022) was worse than the same quarter one year ago for the main measures of punctuality and reliability. In the latest quarter, there were **1.56 million trains planned** in Great Britain. This was down 8.9% compared with the same quarter one year ago, and down 19.2% compared with the same quarter three years ago.

Figure 1 On Time, PPM and Cancellations, Great Britain, October to December 2022 and change from same quarter of 2021 and 2019

Measure	Oct to Dec 2022	Compared with Oct to Dec 2021 (one year ago)		Compared with Oct to Dec 2019 (before pandemic)	
On Time	62.3%	↓	-5.4pp	↑	2.9pp
PPM	82.8%	↓	-4.2pp	↑	0.5pp
Cancellations score	4.5%	↑	0.8pp	↑	0.4pp

For the **On Time** punctuality measure, the percentage of recorded station stops arrived at 'on time' in Great Britain was **62.3%** in the latest quarter. Using **PPM**, **82.8%** of trains were punctual at their final destination in the latest quarter.

The **Cancellations score** in the latest quarter was **4.5%**. The cancellation measure is a weighted score which counts full cancellations as one and part cancellations as half. This industry measure is an indicator of disruption against the timetable operating on the day. The timetable is finalised at 22:00 the previous evening, and trains removed from the timetable before then will not be included. For example, the cancellation score on days with strike action will only reflect trains cancelled from the reduced timetable.

ORR recently collected and published for the first time the number of trains that each operator removed from the timetable due resource availability shortages for rail period 11 (8 January and 4 February 2023). These "P*-coded" pre-cancellations are not included in the Cancellations score presented in this release but are available separately in a factsheet and data table on the data portal.

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.

1. Background

From April 2020 there were reductions in both trains planned and passengers on the railway network due to the coronavirus (COVID-19) pandemic. This led to improvements in punctuality and reliability compared with before the pandemic. However, as passengers returned and more trains ran, both reliability and punctuality deteriorated. To monitor how the recovery of the railway network impacts train performance we focus the presentation of the latest quarterly statistics in this release compared with the same quarter (1 October to 31 December) of both the previous year (2021) and three years ago (2019, before the pandemic).

Trains planned

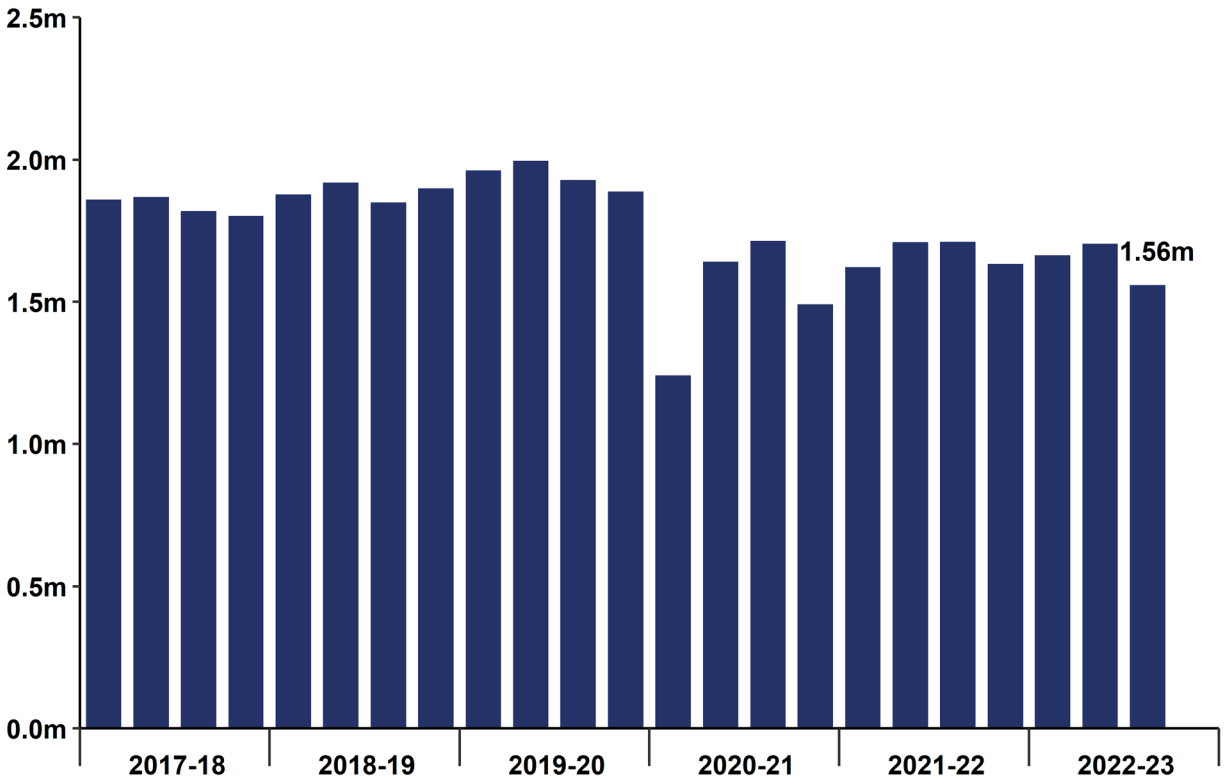
A train planned in this statistical release refers to a train service confirmed to run by the operator and Network Rail at 22:00 on the previous evening. Planned train services removed from railway systems before this cut-off time are not included.

In the **latest quarter**, there were **1.56 million** trains planned in Great Britain. Strike action during the quarter had an impact on the number of planned trains. The latest quarter had 152,685 fewer (down 8.9%) compared with the same quarter the previous year (1 October to 31 December 2021). The latest quarter had 370,929 fewer trains planned (down 19.2%) compared with the same quarter in 2019 (1 October to 31 December 2019) that had 1.93 million trains planned.

For the **12 months** up to December 2022 (1 January 2022 to 31 December 2022), there were **6.58 million** trains planned in Great Britain. This was up 0.4% compared with the previous 12 months ending December 2021 and down 15.7% compared with the 12 months ending December 2019.

Figure 1.1 Trains planned consistently remain at lower levels than before the pandemic

Trains planned (millions), Great Britain, quarterly data, April 2017 to December 2022 (Table 3123)



In the **latest quarter**, 10 national strike action days took place (1, 5 and 8 October, 26 November, 13, 14, 16, 17, 24 and 27 December). There were also two additional strike action days affecting Scotland (10 and 29 October), by ScotRail staff belonging to the RMT union. In response a reduced timetable was put in place on the strike days and for some of the days in between and after the strike days. Strike action was also planned by the RMT union that was called off (5, 7 and 9 November). However, from 5 to 8 November there was disruption as they were called off too late to fully change the planned reduced timetable. A reduced timetable means fewer trains were planned on the strike days. The high number of strike days led to the reduction in trains planned in the latest quarter compared with recent quarters (Figure 1.1).

Table 1.1 Major events responsible for a reduction in trains planned, Great Britain, October to December 2022

The estimated reductions were calculated by comparing the number of trains planned on the day with the same day the week before. In cases when the same day the week before also had a significant reduction in trains planned, the same day the week after was used. From 13 December 2022 onwards there were a high number of strike days. Therefore, from 13 December the first full week of December, that was not disrupted by strike action, was used to compare the number of trains planned.

Date	Event	Estimated daily reduction in trains planned
1 October 2022	Strike action by the RMT, ASLEF and TSSA unions	-86.8%
5 October 2022	Strike action by the ASLEF union	-51.7%
6 October 2022	Day after major strike action and strike action by TSSA and Unite unions affecting East Midlands Railway and Great Western Railway	-9.6%
7 October 2022	Strike action by TSSA and Unite unions affecting East Midlands Railway and Great Western Railway	-6.5%
8 October 2022	Strike action by the RMT and TSSA unions	-78.6%
9 October 2022	Day after strike action	-6.9%
10 October 2022	Strike action by ScotRail staff belonging to the RMT union	-9.6%
29 October 2022	Strike action by ScotRail staff belonging to the RMT union	-12.1%
5 November 2022	Strike action by RMT union called off but too late to fully change the planned reduced timetable	-73.1%
7 November 2022	Strike action by RMT union called off but too late to fully change the planned reduced timetable	-49.7%
8 November 2022	Day after called off strike action but too late to fully change the planned reduced timetable	-10.2%

Date	Event	Estimated daily reduction in trains planned
26 November 2022	Strike action by the ASLEF union	-42.6%
13 December 2022	Strike action by the RMT union	-79.3%
14 December 2022	Strike action by the RMT union	-80.1%
15 December 2022	Day in between strike action	-31.7%
16 December 2022	Strike action by the RMT union	-79.4%
17 December 2022	Strike action by the RMT union	-78.1%
18 December 2022	Day after strike action	-19.3%
19 to 23 December 2022	RMT members overtime ban	-8.7% to -5.8%
24 December 2022	Strike action by the RMT union started at 18:00	-55.1%
27 December 2022	Strike action by the RMT union ended at 06:00	-52.7%
28 to 31 December 2022	Network Rail planned engineering work and RMT members overtime ban	-21.8% to -16.2%

Further trains planned data are available in Table 3123 (quarterly) and Table 3124 (periodic). Periodic (4-weekly) operational data in Table 3124 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

Passenger usage

The Department for Transport publishes rolling seven day rail passenger usage statistics as a percentage of the equivalent week in 2019. Please note, on 22 November 2022 these estimates were revised, switching from using pre-allocation (sales) data to using post-allocation (earnings) data. These revisions are reflected in this release.

According to these estimates, in the first week of May 2020 (during the pandemic) passenger usage reached as low as 5% of the equivalent weekly levels in 2019. Since then, passenger usage has been recovering. During the **latest quarter**, the seven days ending 18 November 2022 reached 99% of equivalent weekly levels in 2019, the highest recorded since the start of the pandemic. However, passenger usage during the latest quarter was affected by strike action. Relative weekly usage reached a low of 48% for the seven days ending 18 December due to the strike action that week. For the last seven days of the latest quarter (up to 31 December 2022) the relative passenger usage was 67%.

The ORR publishes quarterly passenger rail usage statistics. Statistics covering the latest quarter (1 October to 31 December 2022) will be published on 16 March 2023.

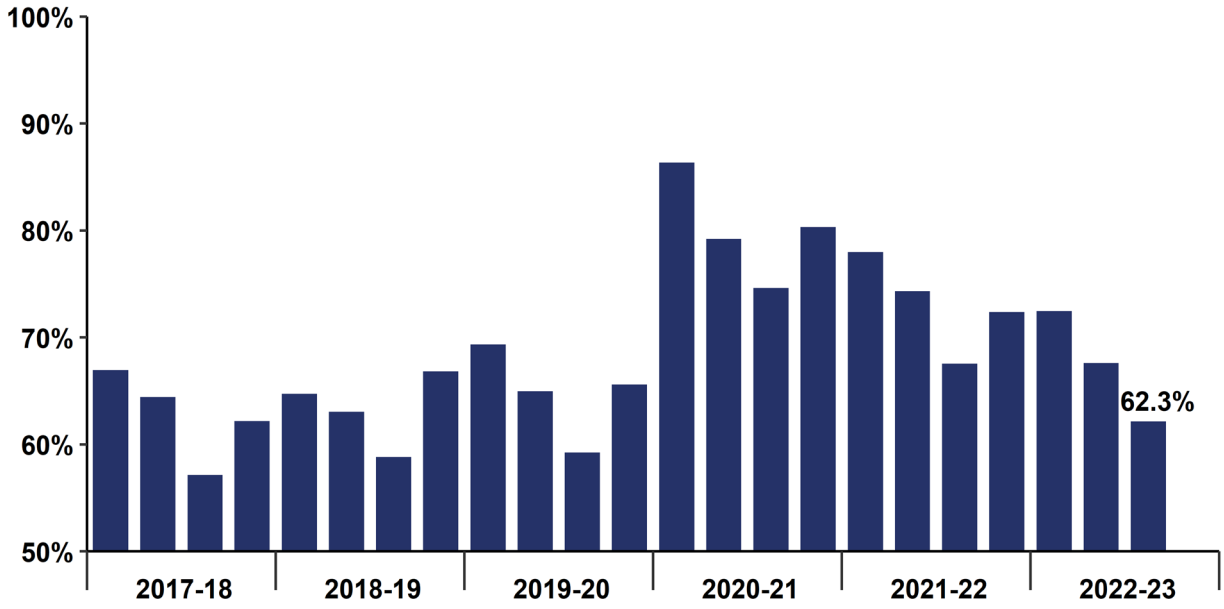
2. Train punctuality

Punctuality at each recorded station stop

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

In the **latest quarter**, **62.3%** of recorded station stops in Great Britain (10.6 million out of 17.0 million) were arrived at On Time. This was 5.4 percentage points (pp) lower (i.e. worse) than the same quarter the previous year. The latest quarter was 2.9pp higher than the same quarter in 2019 (1 October to 31 December 2019). From the start of the timeseries in 2014 to before the pandemic (2019), quarter 3 of the year (October to December) was consistently the worst for On Time performance ranging from a low of 56.1% in 2016 to the highest of 59.4% in 2019.

Figure 2.1 On Time percentages are still higher than before the pandemic
On Time, Great Britain, quarterly data, April 2017 to December 2022 (Table 3133)



For the **12 months** up to December 2022 (1 January 2022 to 31 December 2022), **68.9%** of recorded station stops in Great Britain (49.3 million out of 71.6 million) were arrived at On Time. This was down 6.1pp compared with the previous 12 months ending December 2021, but up 3.6pp compared with the 12 months ending December 2019.

Further train punctuality data are available in Table 3133 (quarterly) and Table 3138 (periodic). These include 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. Periodic (4-weekly) operational data in Table 3138 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

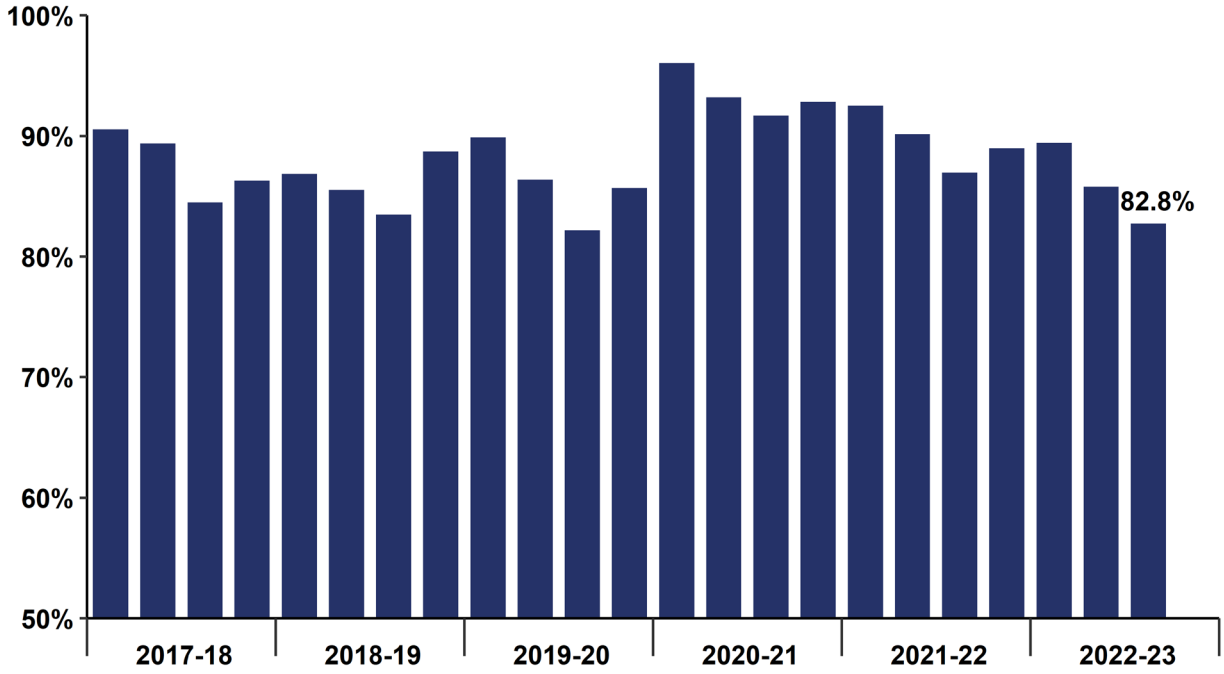
Public Performance Measure (PPM)

The **Public Performance Measure (PPM)** is the percentage of trains arriving at their final destination within either 5 or 10 minutes of the scheduled arrival time depending on the type of train operator providing the service.

In the **latest quarter**, PPM for Great Britain was **82.8%**. This was 4.2pp lower (i.e. worse) than the same quarter the previous year. PPM in the latest quarter was 0.5pp higher than the same quarter in 2019 (1 October to 31 December 2019).

Figure 2.2 PPM percentage was similar to pre-pandemic levels in the latest quarter

PPM, Great Britain, quarterly data, April 2017 to December 2022 (Table 3113)



PPM for the **12 months** up to December 2022 (1 January 2022 to 31 December 2022), was **86.9%**. This was down 3.7pp (i.e. worse) compared with the previous 12 months ending December 2021, but down 0.01pp compared with the 12 months ending December 2019.

Further PPM train punctuality data are available in Table 3113 (quarterly) and Table 3114 (periodic). Periodic (4-weekly) operational data in Table 3114 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

Other punctuality measures

Delay minutes

Delay minutes measure the time lost between consecutive timing points on the rail network.

In the **latest quarter**, national (GB) passenger train delay minutes attributed to Network Rail increased by 18.7% compared with the same quarter the previous year. Delay minutes attributed to operators increased by 12.2% 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. Periodic (4-weekly) operational data in Table 3184 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

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.

Periodic (4-weekly) CRM-P data can be found on the ORR data portal (Table 3174). At the date of this release's publication (2 March 2023), the latest periodic data available is up to 7 January 2023. Table 3174 is updated four times a year on the same dates as this release.

Average Passenger Lateness

Average Passenger Lateness (APL) measures the average lateness of a passenger as they alight from their train.

Periodic (4-weekly) operational data in Table 3144 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

3. Train reliability

Cancellations

In the **latest quarter**, of the 1.56 million trains planned, 51,700 were full cancellations and 37,003 were part cancellations. The **Cancellations score** is the percentage of trains planned that were cancelled, whereby full cancellations are counted as one and part cancellations as half. This industry measure is an indicator of disruption against the timetable operating on the day. The timetable is finalised at 22:00 the previous evening, and trains removed from the timetable before then will not be included. Strike action by the railway unions took place nationally on 10 days in the latest quarter. In response a reduced timetable was put in place on the strike days and on the some of the days after. The Cancellations score only takes account of trains cancelled from the planned reduced service.

Some operators have reported they use the practice of “P*-coding” for resource availability shortage pre-cancellations, i.e. changes to train services caused by non-availability of staff or rolling stock that are included in a revised timetable, and therefore may not be appearing in operators’ Cancellations scores. ORR recently collected and published for the first time the number of trains that each operator removed from the timetable due to resource availability shortages for rail period 11 (8 January to 4 February 2023). Note that we have no data for the time period covered by this release, 1 October 2022 to 31 December 2023.

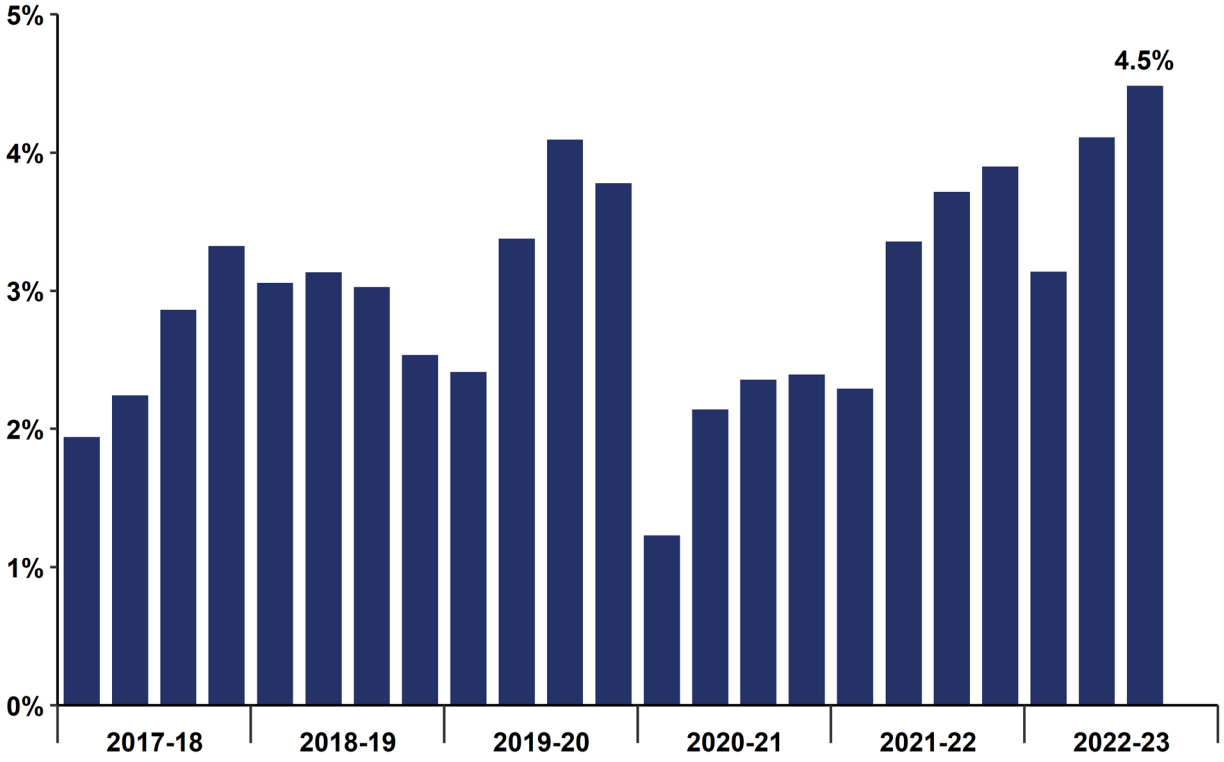
Operators who use “P*-coding” may therefore have a lower Cancellations score reported in this release than that which a passenger may experience. Based on the data we collected for period 11 those operators are: Grand Central, Great Western Railway, London North Eastern Railway, Northern Trains, ScotRail, TfW Rail and TransPennine Express.

More information and data about resource availability shortage “P- coded” pre-cancellations can be found in the Passenger rail performance: cancellations data factsheet and Table 3128 on the Passenger rail performance page on the data portal.*

In the **latest quarter**, the Cancellations score was **4.5%** which was 0.8pp higher (i.e. worse) than the same quarter the previous year. The latest quarter was 0.4pp higher than the same quarter in 2019 (1 October to 31 December 2019). The Cancellations score in the latest quarter was the largest observed since the time series began in April 2014.

Figure 3.1 Cancellations score was highest in the latest quarter

Cancellations score, Great Britain, quarterly data, April 2017 to December 2022 (Table 3123)



The Cancellations score for the **12 months** up to December 2022 (1 January 2022 to 31 December 2022) was 3.9%. This was up 0.9pp (i.e. worse) compared with the previous 12 months ending December 2021 and up 0.8pp (i.e. worse) compared with the 12 months ending December 2019. The Cancellations score for the latest 12 months was the largest annual Cancellations score since the time series began in the 12 months up to 31 March 2015.

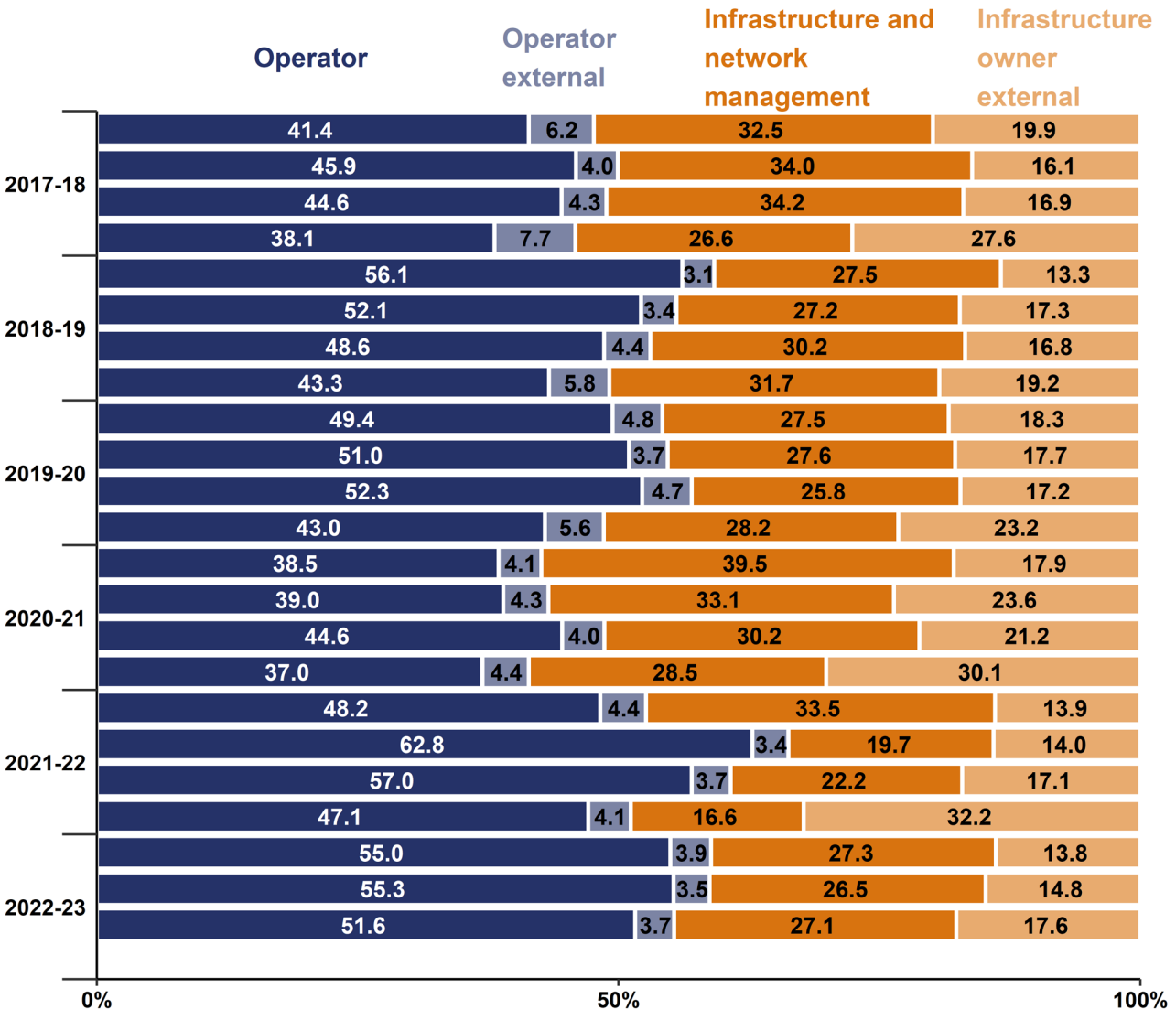
Train cancellations Table 3123 (quarterly) and Table 3124 (periodic) include data on the number of full and part cancellations by operator. Periodic (4-weekly) operational data in Table 3124 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

Responsibility for cancellations

In the **latest quarter**, of all attributed cancellations, operators were attributed with responsibility for 51.6% of cancellations, with another 3.7% attributed to external incidents such as a passenger falling ill on a train. Infrastructure owners were attributed with responsibility for 27.1% of cancellations for infrastructure and network management issues, with another 17.6% 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 Over half of cancellations were attributed to operators in the latest quarter

Proportion of cancellations by responsibility category, Great Britain, quarterly data, April 2017 to December 2022 (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 23 severely disrupted days in the latest quarter, which was 5 more days than the same quarter in the previous year. On the days strike action took place there was disruption to passengers as reduced timetables were in place (see Trains planned in section 1). However, only five strike days (29 October, 26 November, 13, 24 and 27 December) were classed as a severely disrupted days as on those days cancellations from the reduced timetables were above the 5% threshold.

Table 3.1 Severely disrupted days during October to December 2022 with the daily Cancellation score and major incidents or issues that contributed to the cancellations that day

Date	Cancellations score	Major incidents and issues contributing to cancellations
23 October 2022	5.4%	Many incidents of trees on the line and incident involving a fatality at London Victoria
29 October 2022	5.3%	A high proportion of cancellations attributed to train crew issues, also strike action by ScotRail staff belonging to the RMT union
1 November 2022	5.7%	A signal failure at Hyndland
24 November 2022	5.8%	Network management issues including a track fault at Portobello Junction and a security alert at Potters Bar
26 November 2022	6.7%	A cable fault at Finsbury Park, trespass at Acton West and strike action by the ASLEF union
7 December 2022	5.9%	An overhead line incident at London Euston and an incident involving a fatality at Watford Junction
8 December 2022	6.5%	A points failure at London Paddington and fleet fault at Southall
9 December 2022	6.5%	Incidents including iced rails at Sandhills and broken rails at Clapham Junction
10 December 2022	6.5%	Fleet availability issues for ScotRail, driver shortages for Avanti West Coast and an incident involving a fatality at Feltham
11 December 2022	8.6%	Issues relating to snowfall in the South of England
12 December 2022	24.8%	Continued issues relating to snowfall and fleet availability issues for ScotRail

Date	Cancellations score	Major incidents and issues contributing to cancellations
13 December 2022	6.7%	Continued issues relating to snowfall, fleet issues and strike action by the RMT union
15 December 2022	18.5%	Incidents involving a telecoms failure at Harrow and Wealdstone and points failures at Cardiff Central and Norwood Junction
18 December 2022	7.4%	A high proportion of cancellations attributed to train crew issues
19 December 2022	8.3%	A high proportion of cancellations attributed to train crew and fleet issues, also a signalling failure at Sidcup
20 December 2022	7.9%	A high proportion of cancellations attributed to train crew issues, also a trespass at Streatham
21 December 2022	6.3%	A high proportion of cancellations attributed to train crew issues, also points failures at Southall and London Charing Cross
23 December 2022	8.3%	A high proportion of cancellations attributed to train crew issues
24 December 2022	5.5%	A high proportion of cancellations attributed to train crew issues, also strike action by the RMT union
27 December 2022	8.4%	A high proportion of cancellations attributed to train crew issues, also strike action by the RMT union
29 December 2022	5.2%	Train crew issues and a points failure at Haymarket
30 December 2022	9.8%	A high proportion of cancellations attributed to weather related issues, also train crew issues
31 December 2022	5.3%	A high proportion of cancellations attributed to train crew issues, also weather related issues

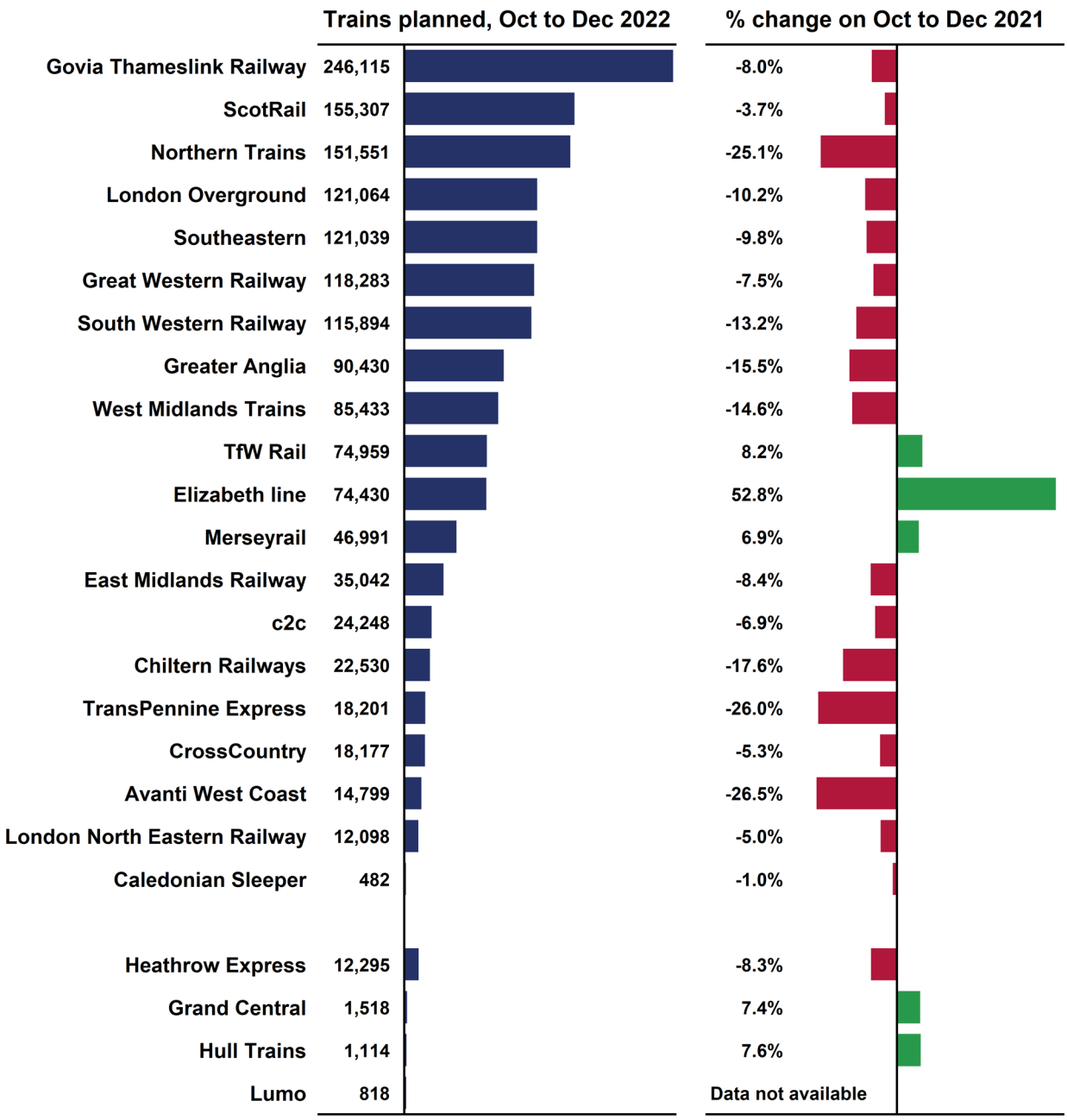
Periodic (4-weekly) operational data in Table 3157 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

4. Train operator analysis

Trains planned

Figure 4.1 Trains planned increased for 5 out of 23 operators compared with the same quarter the previous year

Trains planned by operator, October to December 2022, and percentage change compared with October to December 2021 (Table 3123)



The planned services in the **latest quarter** for all operators were affected by the reduced timetables put in place during strike action. The change in trains planned in the latest quarter compared to the same quarter the previous year (October to December 2021) varied by operator, from an increase of 52.8% for the Elizabeth line to a decrease of 26.5% for Avanti West Coast. This should be taken into account when reviewing the punctuality and reliability data and charts in the sections below.

The Elizabeth line opened on 24 May 2022 and all previous TfL Rail services were rebranded as the Elizabeth line. The increase in trains planned seen (up 52.8%) represents the new services running on the Elizabeth line. Lumo began running services on 25 October 2021, therefore there is not a complete quarter for October to December 2021 available for comparison.

TfW Rail (up 8.2%), Merseyrail (up 6.9%), Grand Central (up 7.4%) and Hull Trains (up 7.6%) all increased their trains planned in the latest quarter compared to the same quarter the previous year (October to December 2021). Strike action in the latest quarter did reduce the number of trains planned for these operators, however this was offset by the increase the number of services they run following timetable changes. Avanti West Coast (down 26.5%) introduced a reduced timetable between August 2022 to December 2022 and Northern Trains (down 25.1%) introduced a reduced timetable from December 2021.

Seven operators reported to us that they use the practice of “P*- coding” for resource availability shortage pre-cancellations during period 11 (8 January to 4 February 2023). Pre-cancelled trains are removed from the timetable before it is finalised at 22:00 the previous evening and are therefore not included in the trains planned data presented in this release. The use of “P*- coding” pre-cancellations is likely to have contributed to the reduction in trains planned seen in the **latest quarter**. TransPennine Express (down 26.0%) used this practice of “P-coding” for resource availability shortage pre-cancellations the most out of all operators according to data reporting to us for period 11.

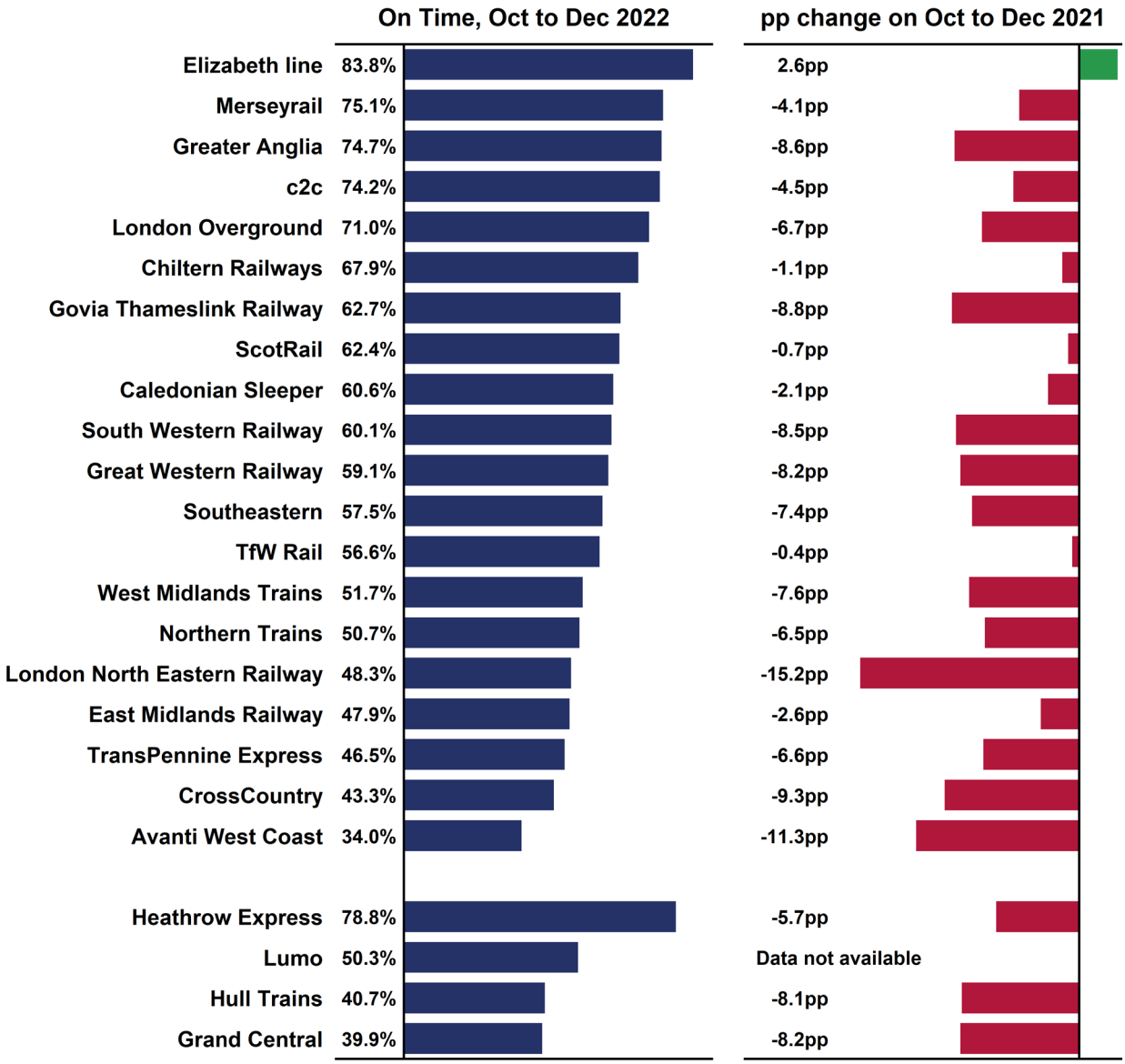
More information and data about resource availability shortage “P- coded” pre-cancellations can be found in the Passenger rail Performance: cancellations data factsheet and Table 3128 on the Passenger rail performance page on the data portal.*

Periodic (4-weekly) operational data in Table 3124 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release’s publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

Punctuality

Figure 4.2 Punctuality improved for only one operator in the latest quarter

On Time by operator, October to December 2022 and percentage point (pp) change compared with October to December 2021 (Table 3133)



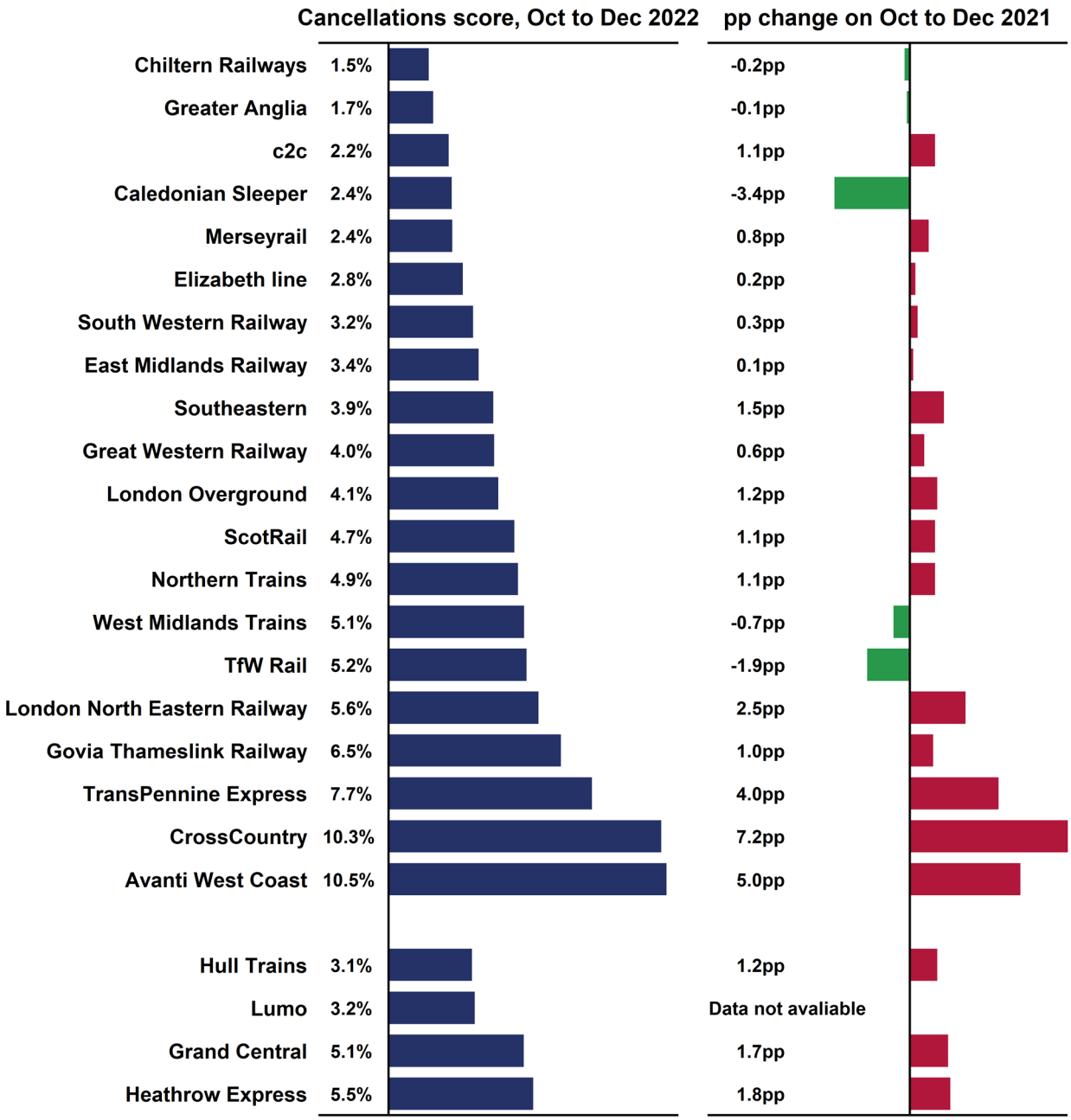
The Elizabeth line was the only operator with a higher On Time percentage in the latest quarter compared with the same quarter last year (up 2.6pp). London North Eastern Railway had the largest decrease in On Time percentage (down 15.2pp).

Periodic (4-weekly) operational data in Table 3138 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release's publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

Reliability

Figure 4.3 Half of the operators had Cancellations scores over 4.0% in the latest quarter

Cancellations score by operator, October to December 2022 and percentage point (pp) change compared with October to December 2021 (Table 3123)



Reliability improved for five operators, with lower Cancellations scores compared with the same quarter the previous year (October to December 2021). Of these, Caledonian Sleeper (down 3.4pp) showed the most improvement. CrossCountry (up 7.2pp) had the largest pp increase in Cancellations score.

Some operators have reported they use the practice of “P*-coding” for resource availability shortage pre-cancellations. Pre-cancelled trains are removed from the timetable before it is finalised at 22:00 the previous evening and therefore may not be appearing in operators’ Cancellations scores. ORR recently collected and published for the first time the number of trains that each operator removed from the timetable due to resource availability shortages for rail period 11 (8 January to 4 February 2023). Note that we have no data for the time period covered by this release, 1 October 2022 to 31 December 2023.

Operators who use “P*-coding” may therefore have a lower Cancellations score reported in this release than that which a passenger may experience. Based on the data we collected for period 11 those operators are: Grand Central, Great Western Railway, London North Eastern Railway, Northern Trains, ScotRail, TfW Rail and TransPennine Express.

More information and data about resource availability shortage “P- coded” pre-cancellations can be found in the Passenger rail Performance: cancellations data factsheet and Table 3128 on the Passenger rail performance page on the data portal.*

Periodic (4-weekly) operational data in Table 3124 are made available on the ORR data portal as soon as the data are loaded and validated into our systems. At the date of this release’s publication (2 March 2023), the latest periodic data available is up to 4 February 2023.

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 three of the open access operators (Hull Trains, Grand Central and Lumo), 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 score** 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. This industry measure is an indicator of disruption against the timetable operating on the day. The timetable is finalised at 22:00 the previous evening, and trains removed from the timetable before then will not be included. *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 quarterly as far back as April 1997. 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, during the year April 1997 to March 1998 Virgin Trains West Coast (VTWC) planned to run 55,600 trains. During the year April 2012 to March 2013 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

On 24 May 2022 the Elizabeth line opened to passengers. Also, on this date the service running under TfL Rail were rebranded as the Elizabeth line.

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

Revisions

There have been no revisions to previously published data.

Details of previous revisions can be found in the Revisions log.

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)

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
- Pre-cancellations and adjusted cancellations score by operator (periodic) – Table 3128

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

Other related statistics

The Passenger rail Performance: cancellations data factsheet and data table are published on the Passenger rail performance page on the data portal.

Freight rail performance data tables are published on the Freight rail usage and performance page on the data portal.

The Department for Transport (DfT) publishes rail statistics. For example, Rail passenger numbers and overcrowding on weekdays in major cities.

DfT has published estimates for the reduction in train services during strike action for each train operator as part of a consultation on implementing minimum service levels for passenger rail.

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 Tenth Annual Market Monitoring Report.

Annex 4 – ORR's statistical publications

Statistical Releases

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

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

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

National Statistics

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

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

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

This publication is available at dataportal.orr.gov.uk

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