



## Department for Transport

### 'Top 10' overcrowded train services: England and Wales, spring and autumn 2016

#### Introduction

The 'top 10' lists are based on passenger counts carried out by the train operating companies. These counts are used by the Department to monitor train crowding levels.

Recognising that there is a demand for this type of data, DfT periodically publishes these 'top 10' lists. This release includes lists for spring and autumn 2016. The spring data are collected prior to the May timetable change, and the autumn data are collected prior to the December timetable change.

Data represent average passenger loadings for morning and afternoon peak services during a typical weekday in spring and autumn. Passengers are counted on trains at the busiest point as they approach and leave city centre stations in eleven of the largest cities across England and Wales.



The 'top 10' overcrowded services in spring 2016 were between 58% and 126% over their passenger capacity.



The 'top 10' overcrowded services in autumn 2016 were between 77% and 113% over their passenger capacity.



Eight of the 'top 10' overcrowded services in both spring 2016 and autumn 2016 were arriving at or departing from London stations.



Eight of the 'top 10' overcrowded services in spring 2016 and five in autumn 2016 were in the morning peak.

This publication provides lists of the ten most overcrowded peak train services in each of spring and autumn 2016.

All franchises let by the Department for Transport (DfT) require the train operator to address overcrowding and to plan their timetables in such a way that, as far as possible, crowding is not unduly concentrated on any particular route or individual service.

These statistics give an indication of the extent of train crowding. Crowding is measured using 'Passengers in excess of capacity' (PiXC) figures that show the number of standard class passengers who exceed the standard class capacity of the train, at the busiest point of the journey to or from the city centre. For example, a train with a capacity of 200, carrying 210 passengers has a PiXC of 10, and a Load Factor of 105%.

The 'top 10' list for autumn 2016 uses the same data as the Department's *'Rail passenger numbers and crowding on weekdays in major cities in England and Wales'*, which can be found at the following link: <https://www.gov.uk/government/statistics/rail-passenger-numbers-and-crowding-on-weekdays-in-major-cities-in-england-and-wales-2016>.

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## Methodology

The 'top 10' lists cover arrivals into eleven of the largest cities in England and Wales during the morning peak (07:00-09:59) and departures from these cities during the afternoon peak (16:00-18:59) for franchised train operators only. The figures include 'typical' weekday passenger counts (usually Tuesday to Thursday) and exclude school and bank holidays, as well as periods of disruption. While recognising there are variations in travel behaviour, this gives a representation of crowding levels at times when passenger demand is generally highest.

Passenger loads are based on data collected at the busiest point on a train's journey, known as the critical load point, on arrival at (AM peak) or on departure from (PM peak) a city centre. The critical load point can be an interchange point outside the city (e.g. Stratford or Ealing Broadway on approach to London) and may not be the terminal or city centre station.

There are two methods by which the data are collected, either by automatic counting equipment fitted to the trains, or by manual on-train or platform counts. Some services may have been counted only once and therefore may not be an average representation of overcrowding on a service over a period of time.

Historically, the Department monitored crowding levels for London and South East operators only, however, since 2011 more data have been collected for a number of key regional cities in England and Wales. The spring data were collected prior to the May 2016 timetable change, and the autumn data were collected prior to the December 2016 timetable change.

### Train Capacity

The timetabling of a service can affect a train's capacity, which in turn may affect its crowding level. Crowding is measured by comparing the standard class critical load with the standard class capacity of the service. The standard class capacity includes the number of standard class seats on the service and may include an allowance for standing room. No allowance for standing is made on a service when the time between stations before (AM) or after (PM) the critical load point is more than 20 minutes, but it is allowed when it is 20 minutes or less.

### First class

Train crowding calculations exclude first class passengers and first class accommodation. So the crowding levels are determined by the number of standard class passengers and the standard class capacity.

## Definitions

- ▶ **Critical load point:** The station where the standard class passenger load on a service is highest on arrival at (AM peak) or on departure from (PM peak) a city centre. Critical load points can vary from service to service, but will usually be at the same location for services on the same route.
- ▶ **Standard class passenger capacity:** This includes the number of standard class seats on the service and may include a standing allowance. A standing allowance is included when the time between stations before (AM) or after (PM) the critical load point is 20 minutes or less.
- ▶ **Critical load:** The number of standard class passengers on a service at the critical load point.
- ▶ **Passengers in excess of capacity (PiXC):** The number of standard class passengers on a service that are in excess of the standard class capacity at the critical load point. First class passengers are not included.
- ▶ **Standard class load factor:** The 'top 10' lists are based on the service's load factor, which is the number of standard class passengers on a service expressed as a percentage of the maximum stated standard class passenger capacity for that service. For example, a train which has the same passenger load as the passenger capacity has a load factor of 100%. Numbers of first class passengers are not included in the calculation of load factors.

## The 10 most overcrowded peak train services in major cities in England and Wales: spring 2016

Rank	City	Critical load point (1)	Time at critical load point (1)	Train operating company	Service	Number of cars	Standard class passenger capacity (2)	Standard class passenger load (3)	Passengers in excess of capacity (4)	Standard class load factor (5)
1	London	London Bridge	07:00	Southern	05:40 Uckfield to London Bridge	2	107	242	135	226%
2	London	London Bridge	08:20	Southern	07:16 East Grinstead to London Bridge	12	640	1247	607	195%
3	Manchester	Manchester Oxford Road	08:23	TransPennine Express	04:22 Glasgow Central to Manchester Airport	4	191	360	169	188%
4	London	London Blackfriars	08:49	Thameslink	07:24 Brighton to Bedford	8	462	855	393	185%
5	London	London Euston	17:46	London Midland	17:46 London Euston to Crewe	8	412	728	316	177%
6	London	London Blackfriars	08:20	Thameslink	07:00 Brighton to Bedford	12	630	1105	475	175%
7	London	London Bridge	08:18	Southern	06:29 Littlehampton to London Bridge	12	669	1145	476	171%
8	London	London Bridge	08:28	Southern	07:05 Uckfield to London Bridge	8	482	776	294	161%
9	London	London Bridge	07:44	Southern	06:40 East Grinstead to London Bridge	12	669	1066	397	159%
10	Leeds	Leeds	17:44	TransPennine Express	16:12 Liverpool Lime St to Newcastle	3	166	262	96	158%

**Warning: These figures should be treated with caution - please see notes on page 11.**

### Notes

- (1) The location and time where the highest passenger load was recorded. For morning peak arrivals this is the station that the load was recorded at on arrival, and for afternoon peak departures this is the station that the load was recorded at on departure.
- (2) Includes the number of standard class seats on the train and may also include a standing allowance. A standing allowance is included on a service when the time between stations before (AM peak) or after (PM peak) the critical load point is 20 minutes or less. The allowance for standing varies with the type of rolling stock.
- (3) The number of standard class passengers on the service at its most crowded point on the journey into or out of the city.
- (4) The difference between the standard class passenger load and the standard class passenger capacity.
- (5) The number of standard class passengers expressed as a percentage of the maximum allowable standard class passenger capacity for that service. For example, a train which has the same passenger load as the passenger capacity has a load factor of 100%.

## The 10 most overcrowded peak train services in major cities in England and Wales: autumn 2016

Rank	City	Critical load point (1)	Time at critical Load point (1)	Train operating company	Service Details	Number of cars	Standard class passenger capacity (2)	Standard class passenger load (3)	Passengers in excess of capacity (4)	Standard class load factor (5)
1	London	London Bridge	08:20	Southern	07:16 East Grinstead to London Bridge	12	640	1366	726	213%
2	London	London King's Cross	09:02	Great Northern	07:55 Cambridge to London Kings Cross	4	202	426	224	211%
3	London	West Hampstead	17:56	Thameslink	17:08 Sutton to St Albans City	4	391	758	367	194%
4	London	London Blackfriars	08:17	Thameslink	06:57 Brighton to Bedford	12	630	1215	585	193%
5	Manchester	Manchester Oxford Road	16:19	TransPennine Express	16:00 Manchester Airport to Edinburgh	4	191	357	166	187%
6	London	London Bridge	08:24	Southern	07:27 Reigate to London Bridge	12	669	1233	564	184%
7	London	London Paddington	17:18	Great Western Railway	17:18 London Paddington to Oxford	5	242	445	203	184%
8	Manchester	Manchester Oxford Road	08:22	TransPennine Express	04:22 Glasgow Central to Manchester Airport	4	191	344	153	180%
9	London	London Blackfriars	17:40	Thameslink	16:26 Bedford to Brighton	8	372	669	297	180%
10	London	London Euston	18:13	London Midland	18:13 London Euston to Birmingham New St	8	412	729	317	177%

**Warning: These figures should be treated with caution - please see notes on page 11.**

### Notes

- (1) The location and time where the highest passenger load was recorded. For morning peak arrivals this is the station that the load was recorded at on arrival, and for afternoon peak departures this is the station that the load was recorded at on departure.
- (2) Includes the number of standard class seats on the train and may also include a standing allowance. A standing allowance is included on a service when the time between stations before (AM peak) or after (PM peak) the critical load point is 20 minutes or less. The allowance for standing varies with the type of rolling stock.
- (3) The number of standard class passengers on the service at its most crowded point on the journey into or out of the city.
- (4) The difference between the standard class passenger load and the standard class passenger capacity.
- (5) The number of standard class passengers expressed as a percentage of the maximum allowable standard class passenger capacity for that service. For example, a train which has the same passenger load as the passenger capacity has a load factor of 100%.

# The 'top 10' services in spring 2016

## 1. 05:40 Uckfield to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

When the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Bridge
<b>Time at CLP:</b>	07:00
<b>Capacity:</b>	107
<b>PiXC:</b>	135
<b>Load Factor:</b>	226%

Capacity includes seats only. Train has 1st class seating.

## 2. 07:16 East Grinstead to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

When the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Bridge
<b>Time at CLP:</b>	08:20
<b>Capacity:</b>	640
<b>PiXC:</b>	607
<b>Load Factor:</b>	195%

Capacity includes seats only. Train has 1st class seating.

## 3. 04:22 Glasgow Central to Manchester Airport (TransPennine Express)

This service is busiest between Wigan North Western and Manchester Oxford Road stations. The train arrives in Manchester at the height of the peak, and is considerably faster than alternative stopping services so is very attractive for commuters. Because the journey time for this non-stop section is more than 20 minutes, a standing allowance is not taken into account when determining the capacity of the train.

TransPennine Express is investigating how more capacity can be provided into the major cities for the May 2018 timetable change, and when additional trains are available by 2019.

Due to a temporary line closure north of Carlisle between February and May 2016, the counts may not be entirely representative.

<b>Critical load point (CLP):</b>	Manchester Oxford Road
<b>Time at CLP:</b>	08:23
<b>Capacity:</b>	191
<b>PiXC:</b>	169
<b>Load Factor:</b>	188%

Capacity includes seats only. Train has 1st class seating.

## The 'top 10' services in spring 2016

### 4. 07:24 Brighton to Bedford (Thameslink)

When the 2016 counts were carried out, this service was operated as an 8 car train. Since then, a new class 700 stock 12 car train has been introduced on this service which has a significantly higher capacity. Other services on this route are also being lengthened so overcrowding generally should reduce on services into Blackfriars.

#### Critical load point

(CLP): London Blackfriars

**Time at CLP:** 08:49

**Capacity:** 462

**PiXC:** 393

**Load Factor:** 185%

Capacity includes seats only. Train has 1st class seating.

### 5. 17:46 London Euston to Crewe (London Midland)

This service was introduced as part of London Midlands 'peak 110mph' service launch in 2014. Due to platform lengths in the Trent Valley it is not possible to operate this service with 12 cars. Because this service runs non-stop to Milton Keynes, a journey of longer than 20 minutes, a standing allowance is not taken into account when determining the capacity of this train.

There are no planned changes to this service at present, but London Midland and the DfT will continue to monitor and review the situation.

#### Critical load point

(CLP): London Euston

**Time at CLP:** 17:46

**Capacity:** 412

**PiXC:** 316

**Load Factor:** 177%

Capacity includes seats only. Train has 1st class seating.

### 6. 07:00 Brighton to Bedford (Thameslink)

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond. This additional capacity should relieve pressure on many services.

#### Critical load point

(CLP): London Blackfriars

**Time at CLP:** 08:20

**Capacity:** 630

**PiXC:** 475

**Load Factor:** 175%

Capacity includes seats only. Train has 1st class seating.

### 7. 06:29 Littlehampton to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

#### Critical load point

(CLP): London Bridge

**Time at CLP:** 08:18

**Capacity:** 669

**PiXC:** 476

**Load Factor:** 171%

Capacity includes seats only. Train has 1st class seating.

## The 'top 10' services in spring 2016

### 8. 07:05 Uckfield to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

When the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Bridge
<b>Time at CLP:</b>	08:28
<b>Capacity:</b>	482
<b>PiXC:</b>	294
<b>Load Factor:</b>	161%

Capacity includes seats only. Train has 1st class seating.

### 9. 06:40 East Grinstead to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Bridge
<b>Time at CLP:</b>	07:44
<b>Capacity:</b>	669
<b>PiXC:</b>	397
<b>Load Factor:</b>	159%

Capacity includes seats only. Train has 1st class seating.

### 10. 16:12 Liverpool Lime St to Newcastle (TransPennine Express)

Currently, fast services between Leeds and York do not run at even frequencies during the evening peak, this means that loadings on trains are not evenly spread. From December 2016 TransPennine Express will add extra services to the route to help spread demand for longer distance passengers, and in May 2018 the operator plans to run even more services from Leeds to the North East.

<b>Critical load point (CLP):</b>	Leeds
<b>Time at CLP:</b>	17:44
<b>Capacity:</b>	166
<b>PiXC:</b>	96
<b>Load Factor:</b>	158%

Capacity includes seats only. Train has 1st class seating.

## The 'top 10' services in autumn 2016

### 1. 07:16 East Grinstead to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Bridge
<b>Time at CLP:</b>	08:20
<b>Capacity:</b>	640
<b>PiXC:</b>	726
<b>Load Factor:</b>	213%

Capacity includes seats only. Train has 1st class seating.

### 2. 07:55 Cambridge to London Kings Cross (Great Northern)

This service is currently operated as a 4 car train. Once the government-funded Thameslink Programme has been completed in 2018 services from Cambridge will transfer to the Thameslink route, and services will be operated as 8 and 12 car trains.

<b>Critical load point (CLP):</b>	London Kings X
<b>Time at CLP:</b>	09:02
<b>Capacity:</b>	202
<b>PiXC:</b>	224
<b>Load Factor:</b>	211%

Capacity includes seats only. Train has 1st class seating.

### 3. 17:08 Sutton to St Albans City (Thameslink)

When the 2016 counts were carried out this service was operated as a 4 car train. Since then, one of the new class 700 stock 8 car trains has started operating this service, which has a significantly higher capacity than the old train. Other services on this route are also being lengthened as part of the government-funded Thameslink Programme so overcrowding generally should reduce on this route

<b>Critical load point (CLP):</b>	West Hampstead
<b>Time at CLP:</b>	17:56
<b>Capacity:</b>	391
<b>PiXC:</b>	367
<b>Load Factor:</b>	194%

Capacity includes seats and standing. Train has no 1st class seating.

### 4. 06:57 Brighton to Bedford (Thameslink)

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

<b>Critical load point (CLP):</b>	London Blackfriars
<b>Time at CLP:</b>	08:17
<b>Capacity:</b>	630
<b>PiXC:</b>	585
<b>Load Factor:</b>	193%

Capacity includes seats only. Train has 1st class seating.



## The 'top 10' services in autumn 2016

### 5. 16:00 Manchester Airport to Edinburgh (TransPennine Express)

This service is busiest between Manchester Oxford Road and Wigan North Western stations. The train departs Manchester at the beginning of the peak and is considerably faster than alternative stopping services so is very attractive for commuters as well as long-distance passengers to the Lake District and Scotland. Because the journey time for this non-stop section is more than 20 minutes, a standing allowance is not taken into account when determining the capacity of the train.

TransPennine Express is investigating how more capacity can be provided into the major cities for the May 2018 timetable change, and when additional trains are available by 2019.

**Critical load point (CLP):** Manchester Oxford Road

**Time at CLP:** 16:19

**Capacity:** 191

**PiXC:** 166

**Load Factor:** 187%

Capacity includes seats only. Train has 1st class seating.

### 6. 07:27 Reigate to London Bridge (Southern)

In previous years the timing of this service meant that a standing allowance was included in determining the capacity of this train. However, the journey time to London Bridge from the previous stop has now been extended to slightly more than 20 minutes. This means that only the seating capacity is now taken into account, and all standing passengers on this service are now considered to be 'in excess of capacity'.

This service operates as a 12 car train and cannot be lengthened further. However, when the government-funded Thameslink Programme has been completed in 2018 more trains will be provided on routes from south of London to central London and beyond, this additional capacity should relieve pressure on many services.

**Critical load point (CLP):** London Bridge

**Time at CLP:** 08:24

**Capacity:** 669

**PiXC:** 564

**Load Factor:** 184%

Capacity includes seats only. Train has 1st class seating.

### 7. 17:18 London Paddington to Oxford (Great Western Railway)

At the time of this count this service was operated as a 5 car train, however, the service is now operated as an 8 car train and capacity has significantly increased. Additional services will be introduced in January 2018. In the longer term the Elizabeth Line (Crossrail) will provide additional capacity on this route, which should result in a shift in demand on parallel services.

**Critical load point (CLP):** London Paddington

**Time at CLP:** 17:18

**Capacity:** 242

**PiXC:** 203

**Load Factor:** 184%

Capacity includes seats only. Train has 1st class seating.

## The 'top 10' services in autumn 2016

### 8. 04:22 Glasgow Central to Manchester Airport (TransPennine Express)

This service is busiest between Wigan North Western and Manchester Oxford Road stations. The train arrives in Manchester at the height of the peak, and is considerably faster than alternative stopping services so is very attractive for commuters. Because the journey time for this non-stop section is more than 20 minutes, a standing allowance is not taken into account when determining the capacity of the train.

TransPennine Express is investigating how more capacity can be provided into the major cities for the May 2018 timetable change, and when additional trains are available by 2019.

<b>Critical load point (CLP):</b>	Manchester Oxford Road
<b>Time at CLP:</b>	08:22
<b>Capacity:</b>	191
<b>PiXC:</b>	153
<b>Load Factor:</b>	180%

Capacity includes seats only. Train has 1st class seating.

### 9. 16:26 Bedford to Brighton (Thameslink)

This service currently operates as an 8 car train. However, when the government-funded Thameslink Programme has been completed in 2018 additional capacity in the form of longer trains and more services will be provided on the routes from central London to south London and Sussex, this should relieve pressure on many services on the Brighton route.

<b>Critical load point (CLP):</b>	London Blackfriars
<b>Time at CLP:</b>	17:40
<b>Capacity:</b>	372
<b>PiXC:</b>	297
<b>Load Factor:</b>	180%

Capacity includes seats only. Train has 1st class seating.

### 10. 18:13 London Euston to Birmingham New St (London Midland)

This service was introduced as part of London Midlands 'peak 110mph' service launch in 2014. This increase in speed enabled two 8 car trains to operate instead of one 12 car train within the same track capacity. The operator currently does not have enough stock to lengthen this train. Because this service runs non-stop to Milton Keynes, a journey of longer than 20 minutes, a standing allowance is not taken into account when determining the capacity of this train.

There are no planned changes to this service at present, but London Midland and the DfT will continue to monitor and review the situation

<b>Critical load point (CLP):</b>	London Euston
<b>Time at CLP:</b>	18:13
<b>Capacity:</b>	412
<b>PiXC:</b>	317
<b>Load Factor:</b>	177%

Capacity includes seats and standing. Train has no 1st class seating.

## Strengths and weaknesses

Work is ongoing to improve the quality and quantity of passenger count data collected and the outputs derived from these data. While we believe that aggregate statistics are of reasonable quality, statistics on individual services are not always robust due to the nature of the data.

Passenger numbers on individual train services fluctuate from day to day and may vary across the spring and autumn count periods. Cases where passenger loading is based on a small number of counts may not give a reliable representation of crowding on the service over a period of time.

Furthermore, passenger counts can be subject to measurement errors. For example with manual counts there is a risk of human error, particularly on busy trains. When determining passenger loads using automatic counting equipment, assumptions are made which might not represent the true picture in every instance. Hence the figures should be treated with caution.

As the figures included in this release are one-off snapshots from spring and autumn 2016 they do not provide a reliable, accurate guide to current overcrowding. In some cases extra capacity or timetable changes have already been introduced on some routes.

In addition to the notes here, more detailed information is available in the notes and definitions document that accompanies DfT's annual statistical publication covering passenger demand and rail crowding. This can be found here: <https://www.gov.uk/transport-statistics-notes-and-guidance-rail-statistics>.