



# England and Wales ‘top 10’ overcrowded train services: spring 2013 and autumn 2013

Based on services arriving at or departing from major cities in England and Wales during the morning and afternoon peaks

## Introduction

The Department for Transport (DfT) collects rail passenger counts from train operating companies to monitor train crowding levels. All franchises let by DfT require the train operator to address crowding and to plan their timetables in such a way as to ensure, as far as possible, that crowding is not unduly concentrated on any particular route or individual service. The tables included in this paper show the 10 most overcrowded peak services in the spring 2013 and autumn 2013 passenger count data.

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The ‘top 10’ services in spring 2013 were between 48% and 101% over their capacity, whilst in the autumn they were between 53% and 111% over.

## Methodology

These figures are taken from internal management information used for monitoring purposes. Recognising that there is a demand for these types of data, DfT periodically makes these lists public. It should be noted that there are a number of data issues associated with passenger counts which must be considered when referring to the table below. In addition to the notes that follow the table, more detailed information is available in the notes and definitions document that accompanies DfT’s annual statistical publication covering passenger demand and rail crowding. It can be found at: <https://www.gov.uk/transport-statistics-notes-and-guidance-rail-statistics>.

The ‘top 10’ list covers arrivals into eleven major cities during the morning peak (07:00-09:59) and departures from these cities during the evening peak (16:00-18:59) on a ‘typical’ weekday, for franchised operators only. The passenger load figure is the count at the busiest point on the particular service. This can be an interchange point outside the city on the route concerned (e.g. Stratford or Ealing Broadway on approach to London) and does not always correspond to the terminal or city centre station.

In all cases, the spring data were collected before the May 2013 timetable change and autumn data were collected prior to the December 2013 timetable change. Some of these overcrowding figures are derived from one-off measurements of the passengers on a particular weekday and are not an average representation of overcrowding on the service over a period of time; so the figures represent a one-off snap-shot from spring 2013 or from autumn 2013 only and do not provide a guide to current overcrowding.

The ‘top 10’ list is determined based on ‘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%.

For shorter journeys, where the journey time between stations at the most crowded point is 20 minutes or less, the capacity figures given in the table take account of the number of standard seats plus a standing allowance, which is based on the type of rolling stock. For longer-distance services, where there is a gap longer than 20 minutes between stations, capacity is calculated as the number of standard seats only. A

number of services included in the table have their capacity calculated as “seats plus standing” in line with the definition above.

This list is based on peak trains in Birmingham, Bristol, Cardiff, Leeds, Leicester, Liverpool, London, Manchester, Newcastle, Nottingham and Sheffield. These are the same cities that are included in the Department’s *Rail passenger numbers and crowding statistics*, which are based on the same data. The latest publication can be found via the DfT rail statistics webpage:

<https://www.gov.uk/government/organisations/department-for-transport/series/rail-statistics>

## The 10 most overcrowded peak train services in major cities in England and Wales; spring 2013

**Warning - Figures should be treated with caution - please see notes on data issues.**

Rank	City	Train Operating Company	Departure time	Origin station	Destination station	Arrival time	Number of cars	Standard class passenger capacity <sup>(1)</sup>	Standard class passenger load <sup>(2)</sup>	Count point <sup>(3)</sup>	Passengers in excess of capacity <sup>(4)</sup>	Standard class load factor <sup>(5)</sup>
1	London	London Midland	16:46	London Euston	Crewe	19:24	4	206	414	London Euston	208	201%
2	London	First Capital Connect	07:33	Bedford	Brighton	09:55	8	510	870	St Pancras	360	171%
3	London	First Great Western	07:00	Oxford	London Paddington	08:48	5	290	486	London Paddington	196	168%
4	London	First Great Western	07:44	Henley-on-Thames	London Paddington	08:28	4	340	546	London Paddington	206	161%
5	London	First Great Western	07:21	Oxford	London Paddington	08:59	5	242	378	London Paddington	136	156%
6	London	South West Trains	07:32	Woking	London Waterloo	08:19	12	738	1140	London Waterloo	402	154%
7	London	London Midland	18:13	London Euston	Birmingham New Street	20:17	12	738	1120	London Euston	382	152%
8	London	South West Trains	07:02	Woking	London Waterloo	07:49	12	738	1116	London Waterloo	378	151%
9	London	Southern	06:35	Caterham	London Victoria	07:15	4	430	640	Clapham Junction	210	149%
10	London	London Midland	17:46	London Euston	Birmingham New Street	20:03	12	698	1034	London Euston	336	148%

### Notes

- (1) Includes the number of standard class seats on the train and may also include a standing allowance. No standing allowance is made for journeys of more than 20 minutes between the stations at the most crowded point. For journeys of 20 minutes or less, an allowance for standing room is also made. The allowance for standing varies with the type of rolling stock but, for modern sliding door stock, it is typically approximately 35% of the number of seats.
- (2) The number of standard class passengers on the service at its most crowded point on the journey into or out of the city.
- (3) The point where the passenger load was recorded. For morning peak arrivals this is the station that the load was recorded on arrival at, and for afternoon peak departures this is the station that the load was recorded on departure from.
- (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 would have a load factor of 100%.

## The 'top 10' services in spring 2013

### 1. **16:46 service from London Euston to Crewe (load factor 201%, 208 passengers in excess of its capacity of 206)**

Capacity is based on seats only. Service has first class.

London Midland recognise that while the formation of this train may not have been the maximum allowed by the route, it was the maximum allowed at that time for the combination of the train path and the rolling stock available to them. The train has been formed of 8 cars since the start of the December 2013 timetable, the earliest point at which this was possible, reducing the load factor significantly.

### 2. **07:33 service from Bedford to Brighton (load factor 171%, 360 passengers in excess of its capacity of 510)**

Capacity is based on seats only. Service has first class and train is at maximum length.

This is now a 12 car rather than an 8 car train. First Capital Connect introduced additional carriages in line with the December 2011 HLOS initiative.

### 3. **07:00 service from Oxford to London Paddington (load factor 168%, 196 passengers in excess of its capacity of 290)**

Capacity includes seats and a standing allowance. Service has first class.

First Great Western has recognised this service is crowded and has enhanced the capacity by changing the formation to a 165 3-car with 270 standard class seats.

### 4. **07:44 service from Henley-on-Thames to London Paddington (load factor 161%, 206 passengers in excess of its capacity of 340)**

Capacity is based on seats only. Service has first class.

First Great Western has recognised this service is crowded and it had already been strengthened from 3-cars to 4-cars before these counts were produced.

### 5. **07:21 service from Oxford to London Paddington (load factor 156%, 136 passengers in excess of its capacity of 242)**

Capacity is based on seats only. Service has first class.

First Great Western has recognised this service is crowded and has enhanced the capacity by changing the formation to a 165 3-car with an additional 28 standard class seats

### 6. **07:32 service from Woking to London Waterloo (load factor 154%, 402 passengers in excess of its capacity of 738)**

Capacity is based on seats only. Service has first class. This train and those adjacent to it are operating to maximum formation on this route.

The South West Trains and Network Rail Alliance, with the Department for Transport, have developed plans for increasing capacity on the routes into London Waterloo during the peak periods, in addition to that currently being introduced under the HLOS programme.

**7. 18:13 service from London Euston to Birmingham New Street (load factor 152%, 382 passengers in excess of its capacity of 738)**

Capacity is based on seats only. Service has first class and train is at its maximum length.

From the start of the December 2014 timetable this service is being replaced by a pair of new trains under the Project 110 Peak scheme, thus providing additional seats in this time slot to help relieve the crowding present. The Project 110 Peak scheme is the main forthcoming London Midland scheme for tackling overcrowding during both the morning and evening London Peaks.

**8. 07:02 service from Woking to London Waterloo (load factor 151%, 378 passengers in excess of its capacity of 738)**

Capacity is based on seats only. Service has first class. This train and those adjacent to it are operating to maximum formation on this route.

The South West Trains and Network Rail Alliance, with the Department for Transport, have developed plans for increasing capacity on the routes into London Waterloo during the peak periods, in addition to that currently being introduced under the HLOS programme.

**9. 06:35 service from Caterham to London Victoria (load factor 149%, 210 passengers in excess of its capacity of 430)**

Capacity includes seats and a standing allowance. Service does not have first class.

Southern introduced this train at the December 2011 timetable change in addition to the trains that are contracted to run. This was part of an initiative to using their trains more efficiently to get an extra trip and to plug what was previously a half hour interval between fast East Croydon to Victoria trains. This train primarily serves the fast East Croydon to Clapham Junction and London Victoria market. Currently there are no more carriages available to lengthen this train or to run any additional trains between East Croydon and London Victoria unless they were taken from other trains, but that would cause even worse crowding elsewhere.

**10. 17:46 service from London Euston to Birmingham New Street (load factor 148%, 336 passengers in excess of its capacity of 698)**

Capacity is based on seats only. Service has first class and the train is at its maximum length.

Going forward, London Midland has taken delivery of 10 new 4-car trains, of which 7 will be utilised on the West Coast Main Line and 3 for the West Midlands. This will increase peak capacity by approx. 2,500 seats per day.

## The 10 most overcrowded peak train services in major cities in England and Wales; autumn 2013

**Warning - Figures should be treated with caution - please see notes on data issues.**

Rank	City	Train Operating Company	Departure time	Origin station	Destination station	Arrival time	Number of cars	Standard class passenger capacity <sup>(1)</sup>	Standard class passenger load <sup>(2)</sup>	Count point <sup>(3)</sup>	Passengers in excess of capacity <sup>(4)</sup>	Standard class load factor <sup>(5)</sup>
1	London	London Midland	16:46	London Euston	Crewe	19:24	4	206	435	London Euston	229	211%
2	London	South West Trains	07:32	Woking	London Waterloo	08:19	12	738	1,278	London Waterloo	540	173%
3	London	First Great Western	07:21	Oxford	London Paddington	08:58	5	242	418	London Paddington	176	173%
4	London	Heathrow Connect	18:33	London Paddington	Heathrow Airport	19:05	5	476	806	Ealing Broadway	330	169%
5	Leeds	TransPennine Express	06:30	Manchester Airport	Middlesbrough	09:22	3	166	275	Leeds	109	166%
6	London	London Midland	18:13	London Euston	Birmingham New Street	20:21	12	738	1,211	London Euston	473	164%
7	London	First Great Western	06:07	Banbury	London Paddington	08:32	6	608	956	Ealing Broadway	348	157%
8	Manchester	TransPennine Express	06:30	Scarborough	Manchester Airport	09:12	3	166	259	Manchester Piccadilly	93	156%
9	London	East Midlands Trains	06:28	Nottingham	St Pancras	08:24	10	386	598	St Pancras	212	155%
10	London	First Great Western	07:00	Oxford	London Paddington	08:48	3	241	368	London Paddington	127	153%

### Notes

- (1) Includes the number of standard class seats on the train and may also include a standing allowance. No standing allowance is made for journeys of more than 20 minutes between the stations at the most crowded point. For journeys of 20 minutes or less, an allowance for standing room is also made. The allowance for standing varies with the type of rolling stock but, for modern sliding door stock, it is typically approximately 35% of the number of seats.
- (2) The number of standard class passengers on the service at its most crowded point on the journey into or out of the city.
- (3) The point where the passenger load was recorded. For morning peak arrivals this is the station that the load was recorded on arrival at, and for afternoon peak departures this is the station that the load was recorded on departure from.
- (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 would have a load factor of 100%.

## The 'top 10' services in autumn 2013

### 1. **16:46 service from London Euston to Crewe (load factor 211%, 229 passengers in excess of its capacity of 206)**

Capacity is based on seats only. Service has first class.

London Midland recognise that while the formation of this train may not have been the maximum allowed by the route, it was the maximum allowed at that time for the combination of the train path and the rolling stock available to them. The train has been formed of 8 cars since the start of the December 2013 timetable, the earliest point at which this was possible, reducing the load factor significantly.

### 2. **07:32 service from Woking to London Waterloo (load factor 173%, 540 passengers in excess of its capacity of 738)**

Capacity is based on seats only. Service has first class. This train and those adjacent to it are operating to maximum formation on this route.

The South West Trains and Network Rail Alliance, with the Department for Transport, have developed plans for increasing capacity on the routes into London Waterloo during the peak periods, in addition to that currently being introduced under the HLOS programme.

### 3. **07:21 service from Oxford to London Paddington (load factor 173%, 176 passengers in excess of its capacity of 242)**

Capacity is based on seats only. Service has first class.

First Great Western has recognised this service is crowded and has enhanced the capacity by changing the formation to a class 165 3-car train with an additional 28 standard class seats

### 4. **18:33 service from London Paddington to Heathrow Airport (load factor 169%, 330 passengers in excess of its capacity of 476)**

Capacity includes seats and a standing allowance. Service does not have first class and train is at maximum length.

### 5. **06:30 service from Manchester Airport to Middlesbrough (load factor 166%, 109 passengers in excess of its capacity of 166)**

Capacity is based on seats only. Service has first class.

First TransPennine Express have mitigated some of the challenges of crowding by the introduction of the May 2014 timetable, which introduced a fifth train per hour in each direction across the Pennines. The new fifth train per hour helps out in relieving constrained capacity by reducing the gap in frequency of services.

**6. 18:13 service from London Euston to Birmingham New Street (load factor 164%, 473 passengers in excess of its capacity of 738)**

Capacity is based on seats only. Service has first class and train is at maximum length.

From the start of the December 2014 timetable this service is being replaced by a pair of new trains under the Project 110 Peak scheme, thus providing additional seats in this time slot to help relieve the crowding present. The Project 110 Peak scheme is the main forthcoming London Midland scheme for tackling overcrowding during both the morning and evening London Peaks.

**7. 06:07 service from Banbury to London Paddington (load factor 157%, 348 passengers in excess of its capacity of 608)**

Capacity includes seats and a standing allowance. Service has first class and train is at maximum length.

First Great Western has added 16 extra standard class seats to all its 3-car Class 166 turbo trains by declassifying half of first class. This coupled (i.e. 6-car) service now has an extra 32 standard class seats.

**8. 06:30 service from Scarborough to Manchester Airport (load factor 156%, 93 passengers in excess of its capacity of 166)**

Capacity is based on seats only. Service has first class.

First TransPennine Express have mitigated some of the challenges of crowding by the introduction of the May 2014 timetable, which introduced a fifth train per hour in each direction across the Pennines. The new fifth train per hour helps out in relieving constrained capacity by reducing the gap in frequency of services.

**9. 06:28 service from Nottingham to St Pancras (load factor 155%, 212 passengers in excess of its capacity of 386)**

Service operated by East Midland Trains and capacity is based on seats only. Service has first class and train is at maximum length.

**10. 07:00 service from Oxford to London Paddington (load factor 153%, 127 passengers in excess of its capacity of 241)**

Capacity is based on seats only. Service has first class.

First Great Western has recognised this service is crowded and has enhanced the capacity by changing the formation to a class 165 3-car with 270 standard class seats.



## Passenger counts data issues

- Though a great deal of work is being undertaken to improve the quality and quantity of passenger count data collected and the outputs derived from these data, this work is ongoing. While we believe that aggregate statistics are of reasonable quality, due to the nature of the data, statistics on individual services are not always robust.
- The overcrowding figures for the 'top 10' services are often derived from one-off measurements of the passengers on each train on a particular weekday. They may not be an average representation of overcrowding on the service over a period of time. Furthermore, some of the passenger load numbers are obtained by manual counting and so there is a significant risk of human error. **Hence the figures should be treated with caution.**
- As the figures included in this release are one-off snapshots from spring 2013 and autumn 2013 they do not provide a reliable, accurate guide to current overcrowding. For example, extra capacity has already been introduced on some routes.
- It should be noted that some of the services in the 'top 10' list are atypical, inasmuch as they are services/routes on which additional capacity cannot be provided without unrealistic changes to infrastructure.
- The data collected are intended to represent a 'typical' weekday (usually Tuesday to Thursday). Historically, the Department has only monitored crowding levels for London and South East operators. In co-operation with train operators, the Department has been expanding its capacity to monitor crowding in key regional cities, and published new statistics in 2012 showing weekday passenger numbers and crowding in a number of major cities in England and Wales.

Further information about passenger counts can be found in the *Rail passenger numbers and crowding statistics: notes and definitions*, which can be found at the following link:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69927/rail-notes-definitions.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69927/rail-notes-definitions.pdf)

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