

HOW TO CONDUCT A PASSENGER COUNT

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This guidance is intended for rail user groups who wish to conduct passenger counts at stations or on trains.

- **Passenger counts at stations can be used to verify the official “Government” figures for rail patronage which are quoted for each station on the national railway network.**
- **Passenger counts on trains provide figures which indicate the patronage of a particular train service or railway line.**

1 BACKGROUND INFORMATION

1.1 Official Patronage Statistics

The official estimates of station usage are published annually by the Office of Rail Regulation and are based on ticket sales data. This information is freely available online here:

<http://orr.gov.uk/statistics/published-stats/station-usage-estimates>

The ORR’s station usage data is presented as an “excel” spreadsheet. An accompanying “methodology” document explains in great detail how the figures were obtained. It is clearly important to study both the spreadsheet and the methodology document carefully before (i) embarking on your own passenger count and (ii) drawing conclusions from your results.

The ORR’s station usage estimates are based primarily on the sales of those types of ticket which show journey origin and destination, namely: singles, returns, advance purchase and season tickets. Journeys using rover or ranger tickets, or zoned tickets such as London Travelcard, cannot easily be apportioned to any particular stations, so estimates are made based on passenger surveys.

Annual season ticket usage is based on a 5-day working week with a deduction for holiday periods, but it’s thought that modern working patterns mean that such assumptions result in an over-estimation.

Active and retired railway staff travelling on passes generally go unrecorded. Ticketless travel is also not recorded, and often it’s the suspicion of widespread fare evasion that sparks a passenger count.

For further information about tickets, refer to the National Rail Conditions of Carriage, available online here: <http://www.nationalrail.co.uk/static/documents/content/NRCOC.pdf>

Some local transport authorities and train operators organise their own counts of passengers by employing paid enumerators on trains or at stations. They may also measure passenger footfall by electronic means. Where the results of such counts are shared with the Office of Rail Regulation, they can be used to refine the official station usage estimates. Counts instigated by train operators are normally regarded as commercially confidential, although they could be released for restricted use, for example by a local authority considering investing in a rail project.

1.2 Patronage of a Train Service or Railway Line

It's often useful for a rail user group to be able to estimate the total patronage of their local train service or railway line.

Unfortunately, there's no direct correlation between the official station usage figures and the total number of passengers travelling on a particular train service or stretch of line. This is because some tickets are sold for travel between two stations on the line, while others are for travel between a station on the line and another elsewhere on the rail network. Passengers with the former type of ticket will be counted twice, while passengers with the latter type will be counted only once. If you don't know the relative proportions of passengers in each category, you cannot easily deduce the total line patronage simply by aggregating the numbers using each station on the line.

The extra piece of information you need is a measure of how many passengers are changing trains at an interchange station. The ORR's station usage spreadsheet does, in fact, quote a figure for interchanging passengers at stations where interchange is possible, but if the station has more than one interchange option you still cannot tell how many are travelling to/from your line. There are other factors that may complicate the mathematics, for example:

- Some lines have more than one interchange station.
- Passengers can "interchange" between a limited-stop service and a stopping train.

1.3 Measuring Demand

Passenger counts are not equivalent to measures of demand for the rail service. Demand may be unmet due to constant overcrowding or to numerous other factors that deter people from using the service.

You could consider conducting further surveys to measure unmet demand, such as questionnaires to households near the station, or to people arriving at a rail-served destination by car.

2 METHODS OF CONDUCTING A COUNT

2.1 Counting Passengers at Stations

For a station count, enumerators should ideally stand on the platform and count passengers alighting then passengers boarding, making sure all doors of the train are covered.

One person may be sufficient to count all passengers, but there may be times when one person is nowhere near enough: at peak times; if there's more than one train in the station; if the platform is

curved and not all doors are visible from one viewpoint. For long trains, you could position a number of enumerators along the platform, but of course you may not know the length of the train until it arrives.

At peak times on busy commuter lines, it simply isn't possible to count individuals boarding and alighting trains. In this situation, the only practical way to estimate numbers is to stand by the platform exits and count people passing through. If you adopt this method, bear in mind the following:

- Some passengers may be changing trains and thus may remain on the platform or cross to the opposite platform face.
- Some people may not be travelling - they may be simply greeting friends or helping them with their luggage. However, there is an argument for a separate count of "meeters and greeters" because they are legitimate station users who require facilities such as seats.

The agility of the enumerators should be considered: will they need to cross and recross the footbridge for successive trains? Those planning the count should visit the station at busy times and judge how easy it is to obtain an accurate result.

It's a good idea to record actual departure time as well as scheduled time – punctuality can affect patronage of the service.

The blank form given to each enumerator should look something like this:

Station _____

Service identity	Actual time	Alighting	Boarding	Remarks
0832				
0902				
etc.				

"Actual time" = actual departure time (or arrival time at final station).

2.2 Counting Passengers on Trains

As stated, the only reliable way to measure the total patronage of a train service or railway line is to travel on the trains and count passengers on and off, making sure all doors are covered.

One person on the train may be sufficient, but it's safer to have one person per coach. From one end of a coach, it's possible to see all doors and thereby obtain an accurate count of passengers alighting then passengers boarding. It may be necessary to step off the train and step on again, using a different door from that used by the guard. Be aware that, at stations with short platforms, not all doors on the train will be released. Those planning the count should ride a busy train and judge how easy it is to obtain an accurate result.

Enumerators will also have time between stations to count all passengers travelling on the train. This figure, termed "flow", can be used to verify the boarding and alighting figures. In trains with gangways between coaches, it's necessary to wait a few minutes after leaving a station before noting the "flow" figure – this gives time for passengers to walk through and settle in their chosen area. Where this is the case, it will not be possible to reconcile the alighting, boarding and flow figures for an individual coach; it can only be done on a "whole-train" basis.

The blank form given to each enumerator should look something like this:

Service _____

Station	Actual time	Alighting	Boarding	Flow	Remarks
Anytown					
Another town					
etc.					

“Flow” is recorded after leaving the station named to the left.

2.3 Additional Points

Firstly, do not include train crew and do not include yourself or other enumerators in your count.

Infants under five years of age are entitled to travel free of charge and will therefore not appear in the official estimates of station usage; you need to decide whether or not to include infants in your passenger count. One option is to add further “alighting” and “boarding” columns to the right of the main columns for separately recording the number of infants travelling. Enumerators will have to form their own judgment about the age of infants, or politely ask the parents/guardians.

Additional columns could be added to record the number of bicycles being taken on trains. If enumerators are asked to count bicycles, they would need to be sure whether each individual with a bike needs to be recorded in both the main passenger column and the bicycle column, or in the bicycle column only.

Similarly, you may wish to record wheelchair users or passengers with suitcases. However, avoid over-complicating the form with spurious categories - if you have no specific need for the figures, don't ask for them!

You may have ancillary tasks for enumerators to perform, for example: handing out travel survey forms (this must be done politely and without pressure). Passengers on trains would normally have time to complete and hand back questionnaires before alighting. Volunteers collecting in the completed surveys should store them discreetly so that details are not visible. You could provide sealed posting boxes at convenient locations for people to deposit their completed survey forms. Alternatively, hand a post-paid reply envelope to anybody unable to complete the questionnaire immediately.

It's sometimes useful to record how people reach the station by counting those transferring from bus or taxi to train, or those arriving by bicycle. If cycle racks are found to be full early in the day, there's a strong argument for extra provision. If car drivers regularly complain that there's nowhere to park, a detailed survey of the station car park may be called for.

Videos/photographs of car park usage or platform activity taken at busy times can be used as proof that the numbers recorded are not being exaggerated. Cameras should be used with discretion so as not to alarm the travelling public. It may be necessary to mask vehicle registration numbers if releasing photographs of car parks.

Be aware that the presence of enumerators at stations or on trains can affect the level of fare evasion that day. Habitual fare evaders may be deterred from travelling or think it safer to buy a ticket, and railway staff may feel the need to be a little more conscientious about ticket checks.

3 WHEN TO COUNT

It's important to choose the date and time period for your count carefully. Rail patronage varies widely according to a number of factors:

- Time of day (you will want to cover peak, off-peak and evening periods in your count)
- Day of the week (Sats and Suns differ from each other and from Mon-Fri. Some weekdays can see more passengers than others – Thursday is usually considered to be an “average day”)
- Schooldays (hordes of unaccompanied schoolchildren) *versus* non-schooldays (families travelling together)
- Holiday period *versus* off season
- Pleasant, sunny days *versus* cold/wet days
- Local event days (more patronage) *versus* national televised-event days (less patronage)

Ideally, you would need to allocate a number of days for your count, each typical of a particular type of day. However, this would be impracticable and you need to devise various strategies to limit your count period to what is achievable. For this reason “anecdotal evidence”, resulting from your own observations or from conversations with railway staff or regular travellers, can be used to good effect.

A full-day count is where you cover all train departures over a chosen day. If anecdotal evidence suggests that very early and/or very late trains are lightly loaded, these can be omitted from your count and a small adjustment is then made to your daily totals. Be aware that an unforeseen event, such as a theatre performance over-running or a delay to a connecting train, could dramatically increase late-evening patronage – often the justification for the last train of the day is to cover just such contingencies.

A partial count is where you cover only a selection of trains for part of the day. This could be achieved by, say, two enumerators travelling from end to end of the line covering perhaps four round trips, say from 0800 to 1100 – ie straddling peak and off-peak hours. You can then use the partial count data to deduce what the patronage would have been had you conducted a full-day count. For example, if your partial count tells you that patronage is 10% less than on the exact equivalent journeys checked during your full-day count, you would be justified in assuming the whole day's patronage is 10% less.

You can also use anecdotal evidence alone to deduce patronage on days other than those you have checked. For example, railway staff may tell you that Fridays can be 5% busier than other weekdays.

If your aim is simply to prove that the official station usage figures are too low, it would be sufficient to choose a day of low-to-medium patronage, perform a full-day count and apply the appropriate multiplier to arrive at an annual patronage figure. If, as anticipated, this is well above the official figure, you have proved your point!

It can be useful to conduct a passenger count on roughly the same day each year. This gives a picture of how patronage is changing, year on year. It also quickly shows how a recent change to the service (eg improved frequency) has affected patronage.

4 PERMISSION TO CONDUCT A COUNT

It is, of course, entirely possible for one or two people to conduct ad-hoc or experimental counts without obtaining any prior permission, perhaps as part of their regular journey to work. Indeed, rail managers often appreciate informal feedback about patronage.

However if several people are carrying out a formal count, their activity is bound to be spotted by railway staff or captured on CCTV, and their activity is likely to be challenged. There are byelaws about using a station other than as a member of the travelling public! Therefore it's better to obtain prior approval. In any case, it would be difficult to submit a formal report and be taken seriously if you've conducted a count without permission.

The count supervisor needs to obtain the necessary permission from the manager responsible for running the station or the train service. Note that some trains or stations may be under different management companies from others, so permission from more than one manager may be needed.

For on-train counts (and, in certain circumstances, for station counts), it is necessary to obtain a Permit to Travel for each enumerator and perhaps additional permits for the count supervisors. The Permit to Travel entitles the holder to travel free of charge over a specified route on specified day(s). If each enumerator has an identity card, one Permit to Travel could cover all named individuals taking part in the count.

You may be working in partnership with a paid officer, for example a Community Rail Partnership Officer, in which case the job of obtaining the necessary permissions is better left to that person.

5 SUPERVISING THE COUNT

For a full-day count, you will need to divide the day into 3 to 5 hour shifts and allocate a team to each shift. Less nimble volunteers may appreciate a short-duration shift around the middle of the day.

You will need to plan where enumerators will begin work. In the case of an on-train count, they could start from one end of the line or be fed in from both ends (implying two supervisors). Enumerators would need to arrive at least 15 minutes in advance of beginning work so that they can be handed the necessary equipment and be given a final run-through of what they need to do. An alternative strategy is to arrange for overlapping shifts so that each outgoing team passes on paperwork, procedures and safety instructions to the incoming team.

Station counts. On arrival at a staffed station, volunteers should report to a senior member of staff and, at all times, follow any instructions given by railway staff. Some station facility owners require visiting staff and contractors to be given a short safety briefing; they may issue a standard safety-briefing sheet which each volunteer will be asked to sign. You can reassure railway staff that your team members will not need to stray beyond publically-accessible areas and that they are all "sensible adults".

On-train counts. On boarding the train, volunteers should make themselves known to the guard, show their Permit to Travel and, at all times, follow any instructions given by the guard. Volunteers should avoid blocking doorways during station calls and should not pass items between themselves and volunteers on the platform.

Network Rail has published safety guidelines aimed at “railway enthusiasts” on their website here: <http://www.networkrail.co.uk/asp/777.aspx>. Much of this guidance is also useful for volunteers involved in passenger counts. You could copy appropriate statements from this guidance if you need to devise your own safety-briefing document.

It’s advantageous to supply each enumerator with a distinctive item of clothing, eg: a tabard (not day-glow orange) or a coloured lanyard to which could be attached an identity card. This helps railway staff and passengers identify the enumerators, and helps enumerators to spot each other. You should be able to borrow these items, perhaps from your local authority contact. A badge that includes the name of your rail user group can be a useful membership recruitment tool.

The following checklist of items to give to enumerators may be useful:

- a Permit to Travel and some form of identity (ID card/badge/tabard)
- a personalised duty sheet complete with safety notes
- blank Passenger Count forms
- a phone number to call in the event of difficulties such as delays to the train service.

Optionally...

- blank Travel Survey forms with a supply of pens and post-paid envelopes
- timetables and other promotional literature to hand to passengers
- a “clicker” counting device if counting at very busy stations

6 ANALYSING AND PRESENTING THE RESULTS

For the final report to be credible, it’s necessary to describe how you conducted the count. If assumptions are made, you should explain why they are justified.

When multiplying day-count totals to reach an annual patronage figure, use the following multipliers:

- 190 schooldays per year
- 363 operating days per year (assuming there’s a Sunday service, but no service on Christmas Day or Boxing Day)
- 52 of any particular day-of-the-week per year
- 6 bank holidays per year in England (excluding Christmas Day and Boxing Day which are non-operating days)

The balance between holiday period and off season needs to be decided locally.

In the first instance, you should present copies of your findings to the relevant railway managers. You may need to obtain their approval before circulating the findings more widely. Specific figures are sometimes regarded as commercially confidential, but you could still publish a “summary report” which excludes these. Be aware that you may need to seek prior approval before releasing results to the media.

Ideally, issues of confidentiality should be agreed prior to the count taking place. Railway managers have a tendency to be over-zealous in preserving confidentiality - this should be challenged, possibly with support from local authority officers, citing “public interest”.

Full reports or summaries, duly authorised for release, can be circulated to other parties, most notably:

- Local authority officers, and possibly councillors and MPs
- Volunteers that have participated in the passenger count (with thanks appended)
- The local media

Important: The Statistics Team at the Office of Rail Regulation has asked to be included in the circulation list for passenger counts, as the information is useful in validating their station usage datasets. Their address is: One Kemble Street, London WC2B 4AN (email: rstats@orr.gsi.gov.uk).

Railfuture can provide further guidance, and can possibly help with manpower and funding for your count. Please contact your local Branch secretary (see www.railfuture.org.uk for details).

Your comments about this guidance document are welcome!

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