

***Borders Rail Monitor***  
**BORDERS RAILWAY PERFORMANCE – YEAR 1 REPORT**

**1. Executive Summary**

This report by *Borders Rail Monitor* – rail campaigners Bill Jamieson and David Spaven – is based on one year’s monitoring of performance (punctuality and cancellations) on the Borders Railway, from late-October 2015 to late October 2016. *Borders Rail Monitor* tracks a range of performance data publicly available through the Realtime Trains web site<sup>1</sup>, which in turn uses Network Rail data.

The report sets out the results from a year of monitoring, analyses the trends, reaches conclusions, and suggests a range of actions needed from the main stakeholders – ScotRail, Network Rail and Transport Scotland – to address the serious operational underperformance of the Borders Railway.

The report emphasises that it is important to acknowledge *deeper underlying factors for which Abellio, the operator of ScotRail, cannot be held responsible*. It was, for example, Transport Scotland which determined the constrained infrastructure specification for the Borders Railway and the decision to deploy Class 158 units – the least reliable diesel units in Scotland – for a route with steep gradients and multiple stops on every train service.

The key performance results in relation to the ScotRail franchise requirement are:

- for Edinburgh-Tweedbank services, on only 12 weeks out of 52 – a ratio of 23.1% – have trains achieved the ScotRail contractual Public Performance Measure (PPM) target of 92.5% arriving within 5 minutes of schedule (ie not more than 4’59” late)
- for Tweedbank-Edinburgh services, on only 7 weeks out of 52 – a ratio of just 13.5% – have trains achieved the ScotRail contractual PPM target of 92.5% arriving within 5 minutes of schedule
- trains were cancelled on 47 weeks out of 52 (a ratio of 90.4%).

Applying a more exacting standard of performance to this relatively short-distance (35-mile) railway, the key results are:

- Right Time arrivals at Tweedbank (ie within 1 minute of schedule, or not more than 59 seconds late) have never exceeded 66.2% across any one week
- Right Time arrivals at Edinburgh have never exceeded 49.8% across any one week

In September 2016, Scotland’s Transport Minister instructed ScotRail to deliver a recovery plan for the Borders Railway, but it is too early to conclude whether this is having a significant impact. However, not since late May 2016 has a week passed without a train cancellation, nor have Tweedbank-Edinburgh trains achieved the PPM target across any one week since early May, a period of over 5½ months. *Overall, the evidence to date suggests that it is extremely difficult to consistently operate the Borders Railway to timetable.*

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<sup>1</sup> <http://www.realtimetrains.co.uk/search/advanced/TWB/2016/09/12/0200-0159?stp=WVS&show=all&order=wtt>

## 2. Introduction

Since late October 2015, Borders-based rail campaigner Bill Jamieson has been monitoring performance (punctuality and cancellations) on the Borders Railway. This report has been produced by *Borders Rail Monitor* – Jamieson and his rail campaigning colleague, David Spaven, both of whom campaigned (individually, and with the Campaign for Borders Rail and the Waverley Route Trust) for the return of the railway over a period of more than 20 years from the mid-1990s until the opening of the line in 2015.

Rail campaigners have long expressed concerns about the limited infrastructure specification of the railway, in particular Transport Scotland's cut-back of the three crossing loops on this single-track line from a planned total length of 16 miles to just 9½ miles. By contrast, the 6½ miles of new roads paid for by the rail project have been built to the highest possible standards, including provision for future road widening at the Edinburgh City Bypass overbridge.

The track cut-back makes the railway inflexible to timetable, with little or no margin for error – including when delays are imported from the congested East Coast Main Line between Edinburgh Waverley station and Portobello Junction. We suspect that the cut-back was a response to the supposedly poor Business Case for the railway, which was in part a consequence of seriously flawed patronage forecasting for Transport Scotland, particularly in the case of the Borders stations. Actual recorded patronage in the first six months of operation was 869% *above* forecast at Tweedbank, 409% above at Galashiels, and 375% above at Stow.

The report sets out the results from a year of monitoring, analyses the trends, reaches conclusions, and suggests a range of actions needed to address the serious operational underperformance of the Borders Railway.

While much of the media criticism of the railway's performance has focused on Abellio, as the operator of ScotRail, it is important to acknowledge *deeper underlying factors for which Abellio cannot be held responsible*. It was, for example, Transport Scotland which determined the constrained infrastructure specification and the decision to deploy Class 158 units – the least reliable diesel units in Scotland – for a route with steep gradients and multiple stops on every train service.

In 2012, Network Rail signed the line-specific contract with the Scottish Government to build, operate and maintain the Borders Railway infrastructure, in full knowledge of the constrained infrastructure on the Borders Railway itself and the long-established track congestion at the east end of Waverley station and over the crucial three miles of the East Coast Main Line from Waverley to Portobello Junction.

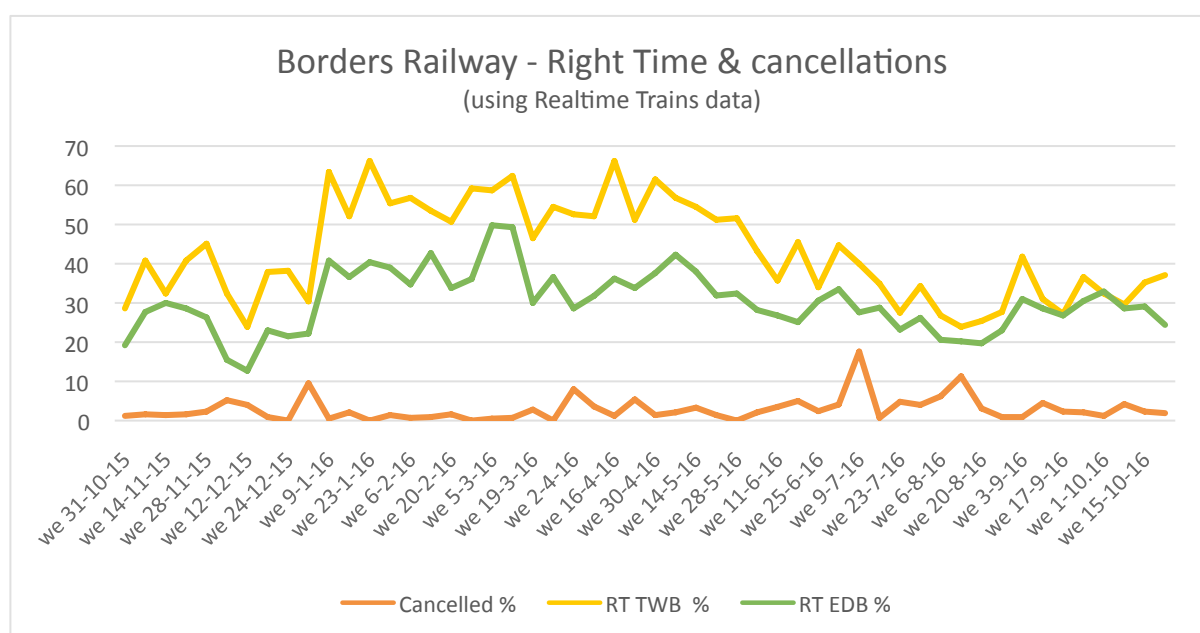
By contrast, Abellio signed up to deliver the Borders Railway train service as part of the much wider ScotRail franchise, with no scope to change the infrastructure and little scope to substitute more reliable diesel units.

### 3. The results

*Borders Rail Monitor* tracks a range of performance data publicly available through the Realtime Trains web site<sup>2</sup>, which in turn uses Network Rail data. These have been consolidated into weekly performance sheets. The key performance indicators discussed in this report are:

- trains arriving 'Right Time' at Tweedbank and at Edinburgh Waverley (ie within 1 minute of schedule, or not more than 59 seconds late)
- trains arriving within 5 minutes of schedule at Tweedbank (TWB) and at Edinburgh Waverley (EDB) – this is the Public Performance Measure (PPM) in the ScotRail franchise contract between Abellio and the Scottish Government
- trains cancelled.

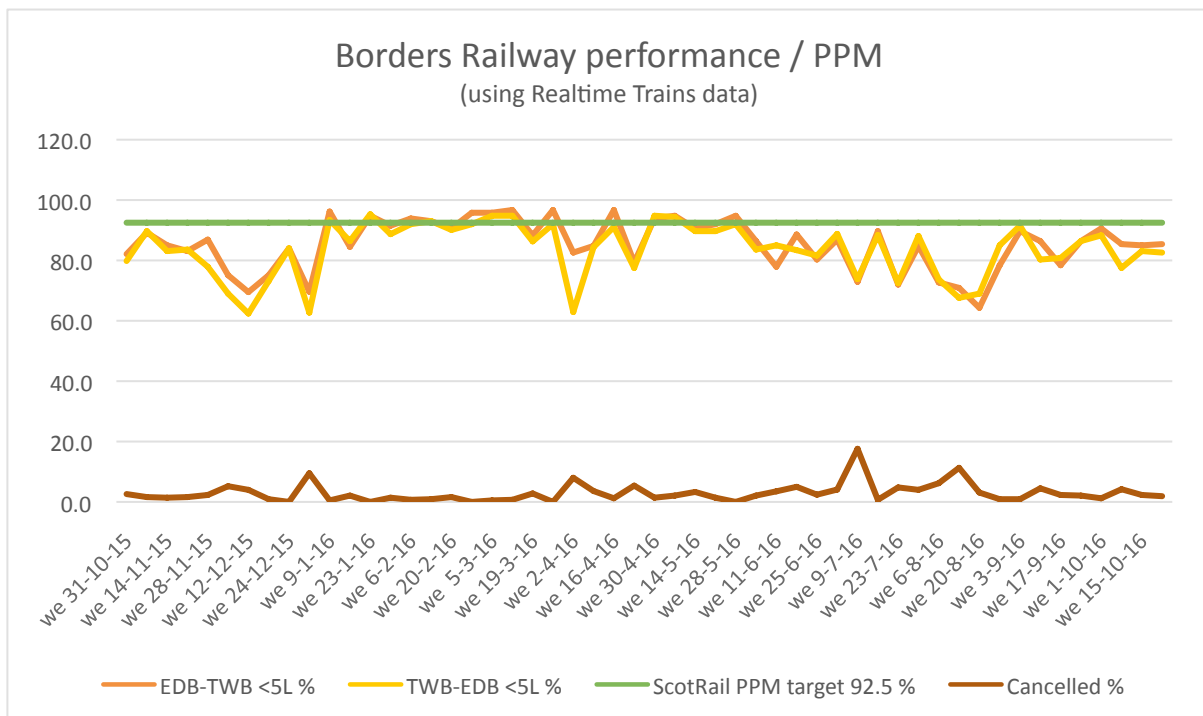
The two graphs on this page and overleaf summarise the performance visually, and are followed by explanation of the key performance points.



Key performance points are as follows:

- Right Time arrivals at Tweedbank have never exceeded 66.2% across any one week, and have exceeded 60% on only 5 weeks out of 52 – the mean figure being 43% and median 41%.
- The best week at Tweedbank achieved 66.2%, and the worst 23.9%
- Right Time arrivals at Edinburgh have never exceeded 49.8% across any one week, and have exceeded 40% on only 6 weeks out of 52 – the mean and median figures being 30%.
- The best week at Edinburgh achieved only 49.8% and the worst just 12.7%.
- Trains were cancelled on 47 out of 52 weeks (a ratio of 90.4%).

<sup>2</sup> <http://www.realtimetrains.co.uk/search/advanced/TWB/2016/09/12/0200-0159?stp=WVS&show=all&order=wtt>



Key performance points are as follows:

- on only 12 weeks out of 52 (a ratio of 23.1%) has the ScotRail contractual PPM target – 92.5% of trains to arrive within 5 minutes of schedule – been achieved for Edinburgh-Tweedbank services (but see caveat in paragraph below)
- on only 7 weeks out of 52 (a ratio of just 13.5%) has the ScotRail contractual PPM target – 92.5% of trains to arrive within 5 minutes of schedule – been achieved for Tweedbank-Edinburgh services
- the best performance on Edinburgh-Tweedbank was 96.7% on three weeks in March/April 2016, and the worst performance was 64.3% on one week in August 2016
- the best performance on Tweedbank-Edinburgh was 95.3% on one week in January 2016, and the worst performance was 62.7% on one week in January 2016

It should be noted that due to practical limitations on accessing Realtime Trains data, these results partly overstate the level of train service performance. The ScotRail contractual PPM target is based on the percentage of booked services which arrive within 5 minutes of their booked arrival time, *having called at all booked stations on the route* – but it has not been practical to monitor and record those Borders Railway trains which **skipped stops** (usually at the north end of the route, in Midlothian and Edinburgh) in order to catch up time. Skipping intermediate stops has been a frequent aspect of Borders Railway operation over the last year. *The punctuality performance over Year 1 has therefore been even worse than indicated by the graph and figures above.*

ScotRail should publish data on the number of trains which in each week of operation have skipped any of their scheduled stops, as without this data it will not be possible to reach firmer conclusions about the impact of reliability on patronage, particularly from and to the Midlothian and Edinburgh stations.

#### 4. Analysis of trends

*Borders Rail Monitor* did not begin monitoring performance until the eighth week of operation, as it seemed reasonable to expect teething troubles following the opening of the railway on 6<sup>th</sup> September 2015. Very large numbers of people sampling the new railway – and a failure to provide enough 4-car (as opposed to 2-car) trains – in practice led to severe overcrowding problems, which in turn resulted in significant additional ‘dwell time’ to load and offload passengers at stations. This contributed to some very poor performance across the first seven weeks of operation. Also during this initial period, late running was caused by tourist charter trains which are heavily speed-restricted in places, due to the limitations of the infrastructure specification.

The first period of monitoring by *Borders Rail Monitor* – from **late October to late December 2015** – involved a continuation of this poor early performance, with Right Time arrivals at Tweedbank never exceeding 45.1% across any one week, and never exceeding 30% at Edinburgh Waverley. Teething troubles continued, and the situation was compounded by other factors: some difficulties with autumn leaf fall and associated wheel slip; and, in particular, the impact of the closure of the Forth Road Bridge, which put significant strain on ScotRail resources and performance in the east of Scotland generally, rather than being specific to the Borders Railway.

The period from **January to late March 2016** – following the re-opening of the Forth Road Bridge – was more encouraging (although it should be noted that part of the better performance will have reflected delays reduced by an unknown number of skipped stops). Right Time arrivals at Tweedbank were consistently above 50%, and although the figures for arrivals at Edinburgh were much poorer than this, results above 40% were achieved across 5 weeks. The PPM target of 92.5% was met across 8 weeks out of 12 between Edinburgh and Tweedbank, and 5 weeks out of 12 between Tweedbank and Edinburgh. This was also the best period for reliability, with 3 weeks out of 12 having no cancelled trains.

There followed a period of volatility across **April and May**, with more than 2% of trains cancelled across 4 of 8 weeks, and as many as 8% cancelled in one week in early April. Right Time arrivals in Edinburgh ranged from 28.6% to 42.3%, and at Tweedbank from 51.2% to 66.2%. Arrivals in Edinburgh within 5 minutes of schedule ranged from as low as 62.9% to as high as 94.8%.

Performance deteriorated seriously across **June, July and August**, thought in part to reflect the impact of ScotRail strikes / disputes (but note that our figures are based on the reduced timetables in force on strike days), as well as infrastructure failures (typically axle-counters which are part of the signaling system) and problems with the Class 158s (including radiator failures). Trains were cancelled every week, reaching the worst performance across the year one week in July, when 17.6% of trains were cancelled – on one day (Saturday 9th July) that particular week, all but six trains were cancelled due to a signalling problem.

Right Time arrivals in Edinburgh averaging over 30% were achieved across only 2 weeks out of 13. While arrivals at Tweedbank performed better, at 23.9% to 45.5%, this was very substantially poorer than the performance achieved over the January to March period. Across no one week throughout this period was the ScotRail target of 92.5% PPM (within 5 minutes of schedule) achieved in either direction.

In **September and October 2016**, performance improved, but to a much lower level than was achieved in the first part of the year – with Right Time arrivals in Edinburgh all falling within the narrow range 24.4% to 32.9%, while those at Tweedbank were 27.2% to 41.8%. Trains were cancelled every week, and across no one week throughout this period was the ScotRail target of 92.5% PPM (within 5 minutes of schedule) achieved in either direction.

Not since late May 2016 has a week passed without a train cancellation, nor have Edinburgh-Tweedbank trains achieved the PPM target across any one week within that period. Tweedbank-Edinburgh trains have not achieved the PPM target across any one week since early May, a period of over 5½ months.

The latest ScotRail web site table for 'Annual On Time Arrival at Destination' for the 75 stations where ScotRail service terminate<sup>3</sup> shows a figure of 43.1% (not more than 59 seconds late) for Tweedbank. Only 15 ScotRail services out of 75 had a poorer performance than Tweedbank, and of these only six were regular-interval services comparable with the Borders Railway.

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<sup>3</sup> [http://www.scotrail.co.uk/sites/default/files/assets/download\\_ct/monthly-performance-results-web-upload-p1617-06.pdf](http://www.scotrail.co.uk/sites/default/files/assets/download_ct/monthly-performance-results-web-upload-p1617-06.pdf)

## 5. Conclusions and consequences

By any measure, it is clear that the Borders Railway has seriously under-performed operationally over most of the year monitored (other quality of service issues, such as overcrowding on trains, are not addressed here). Key indicators are as follows:

- on only 12 weeks out of 52 has the ScotRail PPM target of 92.5% of trains arriving within 5 minutes of schedule been achieved for Edinburgh-Tweedbank services
- on only 7 weeks out of 52 has the ScotRail PPM target of 92.5% of trains arriving within 5 minutes of schedule been achieved for Tweedbank-Edinburgh services
- trains were cancelled on 47 weeks out of 52.

A key question is why – relative to the rest of the year, as opposed to relative to the PPM target and wider ScotRail performance – the generally better level of performance of the January to March period has not been replicated since then? In September 2016, Scotland's Transport Minister instructed ScotRail to deliver a recovery plan, but it is too early to conclude whether this is having a significant impact.

*Overall, the evidence to date suggests that it is extremely difficult to consistently operate the Borders Railway to timetable.* That was all too evident during the final week covered by this report – on Wednesday 19th October, 64 out of 66 trains (97.0%) arrived at Tweedbank / Edinburgh within 5 minutes of scheduled time, indeed 100% of arrivals at Tweedbank met this criterion. Yet the next day, Thursday 20th October, the 18.00 from Tweedbank had to be terminated at Newtongrange due to a door problem, and the consequent disruption and other unrelated incidents that day resulted in 3 trains being cancelled and 16 trains arriving five or more minutes late, 8 of them 10 or more minutes late. The following day (Friday 21<sup>st</sup>) was only marginally better, with two cancellations and 15 arrivals 5 or more minutes late.

In Section 6 below we set out suggested short, medium and long term actions, a number of which are already being addressed by ScotRail and Network Rail management. The main underlying problems of the Borders Railway can, however, only be addressed by Transport Scotland, in its role as funder of infrastructure enhancements on the ScotRail network.

The consequences of running an unreliable railway, fall into at least two main categories:

- i. **Continuing passengers'** time wasted through delays and cancellations, and associated levels of dis-satisfaction with the rail travel experience. Unfortunately, no official Borders Railway-specific surveys appear to have been undertaken, so there are only anecdotal reports and the wider lessons of nationwide passenger surveys to support the view that passenger satisfaction on the Borders Railway is likely to be significantly lower than on most ScotRail services.
- ii. **Lapsed passengers** deterred from continuing to use the train service due to poor service quality relative to alternatives such as the car and the bus. Again, no official Borders Railway-specific analysis appears to have been undertaken, but the forthcoming publication of the first year's patronage statistics – if suitably disaggregated – may allow some tentative conclusions to be drawn. Anecdotal evidence does suggest that the Borders Railway is being omitted as part of longer distance rail journeys, with some passengers preferring to drive to Edinburgh or

Berwick because of the uncertainty regarding connections being achieved in Edinburgh.

The first six months' patronage statistics – as well as demonstrating the seriously flawed nature of the forecasts for the Borders stations – pointed to the likelihood that leisure travel is less affected by unreliability than is commuting, since although three of the four Midlothian stations (which are most affected by 'skip stop' operations) generated patronage significantly *below* forecast, the one exception was Newtongrange, which benefits from the leisure / tourist attraction of the adjacent Scottish Mining Museum. The Midlothian stations also have better bus alternatives than do those in the Borders.



## 6. Further analysis / action required

While much of the responsibility for the poor performance of the Borders Railway ultimately rests with Transport Scotland and the Scottish Government, Network Rail did accept the reduced infrastructure specification for the railway, despite this being a poor decision viewed from an experienced railway operations perspective. Network Rail and Abellio both knew what would be involved in operational terms, with special measures needed to deliver on the tight timetable, but it is not evident that they have yet done this.

We set out below suggested actions for the main stakeholders, over the short term (the next year), medium term (2017-19) and long term (2019 onwards).

### Short-term actions for ScotRail:

- As part of the recovery plan for the line required by the Transport Minister, a specific area which should be tackled is the efficiency of door opening and closing – on a service with eight intermediate stations, laxity in this aspect of operations can quickly build up to late running, with inevitable knock-on effects. The recently agreed driver release of doors would help in this respect.
- Strengthen (ie increase the number of coaches on) busier services, as this will help to reduce ‘dwell time’ delays at station, with large numbers of passengers funneling through just four narrow doors on a standard 2-car Class 158 unit.
- Define a list of ‘Golden Trains’ (ie those which can have a key impact on overall timekeeping, as described in the wider ScotRail Performance Improvement Plan<sup>4</sup>) and focus on ensuring that these trains deliver the required level of performance on a sustained basis – regularly revisiting and refreshing the list.
- Reduce the number of services which run through from origins other than Edinburgh and have very short dwell times at Waverley station, thereby importing delays on to the Borders Railway.
- Replace the defective radiators on the Class 158s, and seek to improve the maintenance regime for these units such that they are achieving performance standards closer to those in operation on South West Trains.
- Publish data showing the number of trains which in each week of operation have skipped any of their scheduled stops.
- Commission passenger satisfaction surveys of the Borders Railway, encompassing both continuing and lapsed passengers.

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<sup>4</sup> <http://www.scotrail.co.uk/about-scotrail/news/scotrail-alliance-publishes-details-performance-improvement-plan>

### **Short-term actions for Network Rail:**

- Ensure that early-running trains to Edinburgh on the East Coast Main Line (ECML) are not given priority at the Portobello Junction pinch-point over on-time trains from Edinburgh to Tweedbank.

### **Short-term actions for Transport Scotland:**

- Review rail forecasting techniques in light of the Borders experience.
- Review the decision-making processes which led to the cut-back of the crossing loops' length from 16 to 9½ miles, rather than reduction of the specification for the road infrastructure associated with the rail scheme.

### **Medium term actions for Transport Scotland / ScotRail and Network Rail:**

- Redeploy more reliable 3-car Class 170 units to the Borders as soon as possible, and not just once the cascade from the Edinburgh-Glasgow electrification programme becomes possible – potentially using units which are 'spare' from other services in the off-peak and/or hiring in locomotive-hauled stock to displace Class 170s on other routes which are less infrastructure-constrained and delay-prone.
- Replace faulty signalling equipment (axle counters etc).

### **Long term actions for Transport Scotland / Network Rail:**

- Double the currently single-track Portobello Junction and the line thence through Brunstane to Newcraighall (increasing capacity and raising speeds).
- Increase capacity on the congested ECML section from Portobello Junction to Waverley and at the east end of Waverley station, including providing sufficient platforms at the latter.
- Extend some or all of the three crossing loops on the line (detailed analysis would be needed to assess where the most cost-effective work could be done).

**David Spaven and Bill Jamieson**

*Borders Rail Monitor*

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