



Digital signalling

– how to communicate the upgrade programme to rail passengers

December 2023

Forewords



Most passengers know little about how the railway operates. They recognise that there is a driver sitting at the front of their train but few know how they drive it – when to go, which route to take, and when to stop. Most will have seen signals during a journey, but that is about as far as their knowledge goes. It is perhaps telling that Network Rail refers to signals as ‘the traffic lights of the railway’ when something goes wrong with them.

It is debatable how much the average passenger needs to know about railway signalling. But in explaining why passengers’ journeys may be disrupted during the installation

of digital signalling some information should be provided. There is clearly a balance to be struck between transparency regarding the works and any disruption, and overloading passengers with technical detail.

We are pleased to have had the opportunity to work with Network Rail to understand passengers’ receptiveness to a variety of message content and the channels through which it might be delivered for the East Coast Digital Programme. We hope this will result in effective communications that inform passengers about disruptions to their journeys while explaining the need for the work – and how they will benefit – in a way they can easily understand.

Alex Robertson
Chief executive
Transport Focus



The East Coast Digital Programme will deliver the next generation of train travel, replacing traditional lineside signals with in-cab digital signalling. As such, it is arguably the biggest change to the way train services are delivered since the transition from steam traction. This system-wide change requires a groundbreaking collaboration of over 30 organisations working in partnership, across track and train.

But much of the change is hidden from public view, and it is not easy to explain what is happening ‘under the bonnet’. However, with large investment involved and with passengers’ journeys disrupted while the

change is being delivered, we have to do our best to explain why the work is needed, what the change is, and the benefits it will deliver to passengers and communities.

The insights we have received through this work with Transport Focus are many and valuable. It will help us tell the story of why an outdated system needs a solution for the long term that will contribute to better journeys that are more reliable with less disruption. It gives pointers to simple messages that link the technology to those benefits. And it highlights the need for the most important information – how this affects ‘me, the passenger’ – to cut through.

Ed Akers
Principal programme sponsor
East Coast Digital Programme
Network Rail

Background and introduction

The railway is moving towards digital signalling as outdated equipment is replaced. Digital signalling brings benefits in terms of performance, reliability, capacity and safety – although this may not be immediately apparent to passengers.

The East Coast Main Line (ECML) will be one of the first to benefit through the East Coast Digital Programme¹ (ECDP), delivered by an industry wide partnership. Work in connection with the programme will result in disruption to the normal timetable on the ECML.

To explore passengers' understanding of digital signalling and the implications of the ECDP, Transport Focus – working with Network Rail and the ECDP – has undertaken a programme of qualitative research. The primary goal has been to inform how digital signalling is communicated to passengers over the coming months as various ECDP-related works result in disruption to journeys.



¹ www.eastcoastdigitalprogramme.co.uk

Key findings

Awareness and understanding of digital signalling

Few passengers had any awareness of the East Coast Digital Programme (ECDP) although most were aware of alterations to train services caused by various works – including a weekend closure in June just ahead of this research taking place. Such disruption was generally seen as a ‘fact of life’ and considered inevitable even if it is a cause of frustration at times.

system is and the fact that digital signalling is in use in Europe suggests that British railways are having to play catch-up. And the fact that our trains are already equipped with digital signalling capability leads passengers to question why the lineside infrastructure has not been implemented sooner.

“There’s often planned engineering works but I’m never sure what they’re doing or why they’re doing it.”

Great Northern/Thameslink, commuter

“Just tell me you have a 100-year-old system that needs bringing up to the 21st century and it will make it safer and the journey quicker.”

Great Northern/Thameslink, business

Once explained, digital signalling is generally seen as a ‘no-brainer’ and even a ‘game-changer’. There is a degree of surprise that the railway isn’t already using digital technologies as these are impacting all aspects of people’s work and personal lives. References to the ‘Victorian era’ underline how out-dated the current

“I had no idea the system was so archaic.”

Great Northern/Thameslink, commuter

Disruption is seen as inevitable

Passengers see the scale of the programme as implying disruption for a considerable period of time – months, if not years. That said, there is a degree of surprise at just how long the programme is expected to take.

The ECDP is compared by some to other high-profile projects such as Thameslink, the Elizabeth line and HS2, all of which have taken (or will take) years to complete with on-going disruption during construction. However, ECDP does not have the same sort of prominence of those other projects and is not something passengers are hearing or reading about on a regular basis.

“End of the decade? Which decade?”

Great Northern/Thameslink, leisure

“The improvements to Thameslink have been a gamechanger – but are we about to be disrupted again?”

Great Northern/Thameslink, commuter

Passengers are keen to understand the benefits

While appreciating that digital signalling technology is modern and up-to-date, passengers are keen to understand what this means in terms of benefits to them and their journeys.

While it is apparent that having reliable, 'always-on' information is a benefit for the driver, it is not as readily understood how this translates into benefits for the passenger. Reliability and punctuality are easy for passengers to relate to and are very important for them (even if the two are sometimes seen as one and the same thing). However, just how digital signalling improves reliability and punctuality is not immediately obvious to passengers.

There is no argument over safety being a critical factor, but the railway is generally seen as safe and it is not obvious how digital signalling would improve it further. Similarly, there is no disputing that job creation is a good thing, but doubts arise as to whether this is a short-term gain during construction and whether longer term some signalling staff might lose their jobs. More efficient use of trains and track is similarly seen as a positive factor, but is perhaps the most difficult to grasp. Being able to squeeze in more trains can seem contrary to the ambition to be more punctual and reliable.

"Punctuality with trains has been an issue for a long time, this would create a lot more positivity about the train system."

LNER, shorter distance, leisure

"I know about tech so I don't trust it because I know these things. Will there be a back up or a failsafe? How rigorously will it be tested?"

Great Northern/Thameslink, commuter

"Trains will be better, everything is moving towards a digital way of working and trains should be no different. I'm hoping this should create a more efficient railway for the future."

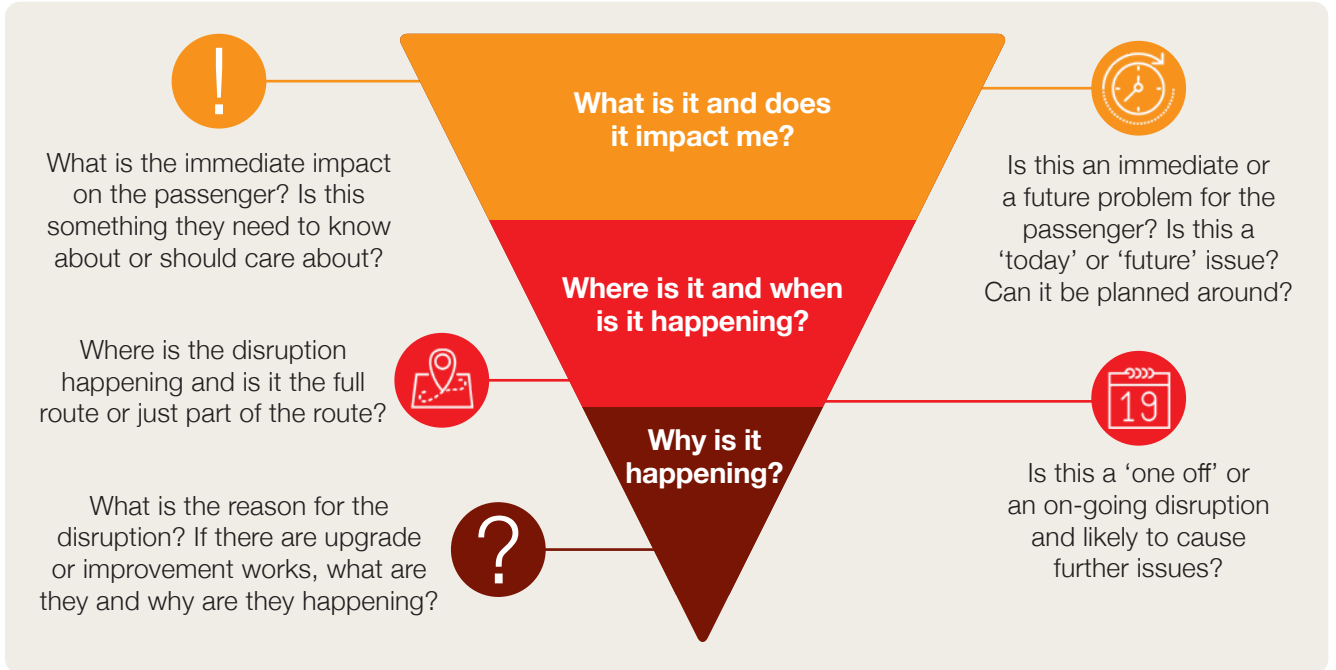
LNER, shorter distance, leisure

"People might lose their jobs, like the signallers and people on the system now."

Great Northern/Thameslink, commuter



Communicating with passengers



There is an established ranking of 'needs' for disruption communications

As with any disruptive engineering works on the railway, passengers expect to be told well in advance that something is happening, when it is happening, whether it will affect their planned journeys and what their alternatives are. Only once they understand the implications do they show any real interest in why the work is happening.

At the least, passengers expect to be told about disruption when researching a journey and booking a ticket. Online, warning triangles or similar alerts are expected and should be designed to grab people's attention. Posters at stations can be effective but have to stand out from general advertising clutter. Bright

colours can be useful in grabbing attention although some passengers from the London area felt that the orange used in some recent ECDP communications was reminiscent of London Overground and might not cut through.

"The colours don't make sense to me and should stand out more."

LNER, business/commuter



Specific branding for ECDP disruption communications might be helpful for regular travellers. Unfortunately, the current logo design is seen as being very similar to the standard Wi-Fi logo and risks being misread as implying the programme will improve Wi-Fi connectivity for passengers. Indeed, there is a more general concern that the words ‘digital’ and ‘signal’ may be completely misread as indicating the programme is about delivering improved mobile device connectivity for passengers. Nevertheless, it is important to land the message about modernisation and the phrase ‘signalling a new era’ works well in this regard.



Logo

“Digital could be about anything. It looks like a Wi-Fi signal.”

Great Northern/Thameslink, commuter

“A new era of train travel’ keeps it punchy.”

LNER, short distance, leisure

Not all passengers know the geography of the railway well (or of the country more generally) and using station names to identify an area of disruption may not communicate just where the work is and whether a journey will be impacted. Route maps that show the extent of any disruption tend to be better at allowing passengers to work out if they will be affected. That said, there is still a risk that even knowing the work is between, say, Peterborough and London, they may not appreciate that their journey from Newcastle to Doncaster could still be affected by timetable alterations.

This poster with its diagrammatic route map was generally well-received

Many passengers do have an interest in knowing what work is taking place, why, and what it will deliver – but this is secondary to knowing if their journey is affected. While it is undoubtedly challenging to explain digital signalling in a concise way on a poster or similar, passengers were unsure about the use of QR codes to provide a link to information online. While many are comfortable with QR codes, and website addresses in general, they remain concerned that their use risks excluding those with no, or limited, ability to use such technology. It is also unclear where the link takes you to, with some expecting it to be direct to a journey planner.

“I’m not very techy I don’t really know about these things or understand them.”

LNER, longer distance, leisure

“I never know what the reason is. If it was communicated more effectively, I think it would be easier to cope with those delays.”

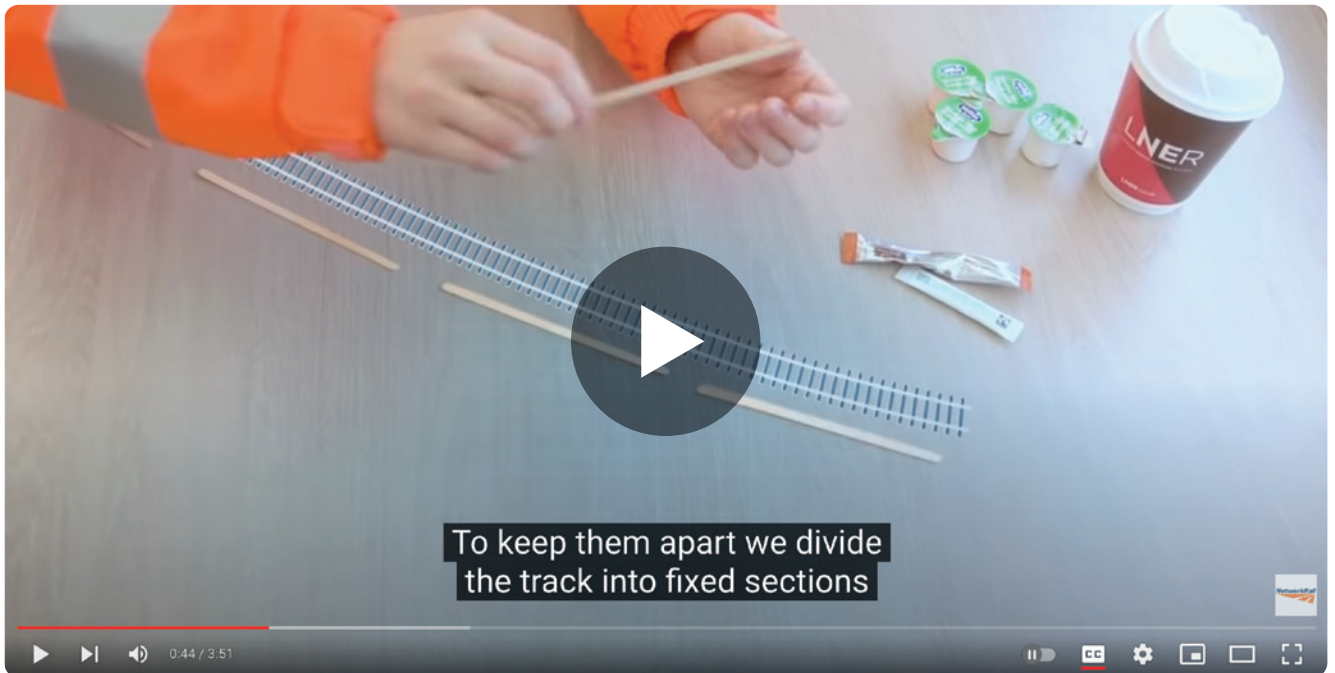
LNER, business/commuter

There is already a degree of ‘disruption fatigue’ amongst passengers and it can be alarming to them to learn how long the ECDP will take. Passengers need reassurance that there is a timeline and an end date in place; it may also be appropriate to explain how the work will take place in stages along the route.

A note of caution

We spent 90 minutes speaking to passengers in our research discussing disruption and digital signalling. With that degree of focus, passengers developed a good understanding of the topic and were able to express well-reasoned views. However, 90 minutes is much more than most passengers will devote to thinking about digital signalling in their lifetimes. There is clearly a real challenge in gaining passengers’ attention and interest in learning about digital signalling.

The video ‘The time is now’², with its use of coffee cups, milk pots, sugar sachets and stirrers as props to show the relationship between trains and signals, was effective in conveying to many passengers taking part in the research how digital signalling works. It may be appropriate for displaying on websites or on digital screens at stations or on trains, but it requires time and attention to digest what it is saying.



Still from ‘The time is now’ video showing the props used

2 www.youtube.com/watch?v=ue6Na6ZOHWc

Conclusion

The East Coast Digital Programme has, unsurprisingly, not achieved the prominence of new railways such as the Elizabeth line and HS2 or East West Rail – although passengers familiar with Thameslink can see how the programme might be transformational. Awareness of associated disruption is low and, to an extent, seen as something to be expected and endured along with all the other engineering work on the railway.

There is a challenge in naming the programme – the current logo can be confused with Wi-Fi and, in combination with the words ‘digital’ and ‘signal’, can suggest the programme is all about improving connectivity for passengers’ mobile devices. Once understood as bringing signalling technology up to date, the programme is seen as a ‘good thing’ and potentially long overdue.

There are few concerns about the impact of the programme beyond the inevitable disruption during

construction. The primary benefits are seen to be improved punctuality and reliability which resonate strongly with many frustrated passengers. However, with reliability and punctuality tending to be the main benefits put forward for almost all engineering works on the railway, we do wonder whether passengers might tire of this message.

As with any engineering work, passengers’ first priority is to understand what it means for their journeys, when it is happening and whether they will need to adjust their travel plans. In the research sessions passengers did express an interest in knowing why the work is happening and the benefits it will deliver. The challenge, as always, is to grab their attention for long enough to explain any disruption and to communicate what digital signalling means in a way that is easy for them to comprehend.

Research method

Transport Focus commissioned Quadrangle to conduct this research. It was largely funded by Network Rail.

The research programme consisted of six online focus groups and six telephone depth interviews. It covered commuter, business and leisure users of LNER, Lumo, Grand Central and Hull Trains (longer distance) and Great Northern and Thameslink (shorter distance), six of whom had a cognitive, sensory or mobility disability. The telephone interview participants were selected as being less digitally confident/engaged or digitally excluded to ensure these voices were heard.

Fieldwork was conducted between 28 June and 11 July 2023.

Contact Transport Focus

Any enquiries about this research should be addressed to:

Keith Bailey

Senior insight advisor

keith.bailey@transportfocus.org.uk

www.transportfocus.org.uk

Albany House

94-98 Petty France

London

SW1H 9EA

Transport Focus is the operating name of the Passengers' Council