

introduce a revised interim timetable on 4 June, with more services operating than before 20 May, and that service reliability recovered somewhat.

Northern's provision of information to passengers during disruption

93. The Inquiry heard that Northern was unable to ensure consistency of information across industry systems such as National Rail Enquiries and train company ticket engines. In the first week of the timetable change there were some routes where the Customer Information System (CIS) screens could not keep up with the amount of disruption. A two-hour cut-off for at-risk services was introduced; these services were cancelled to provide certainty to passengers and accurate information on CIS screens. The company used Twitter to provide updates every 30 minutes to front-line staff, adapting as required based on feedback from hot spot locations. Additional staff were deployed to help customers in line with procedures for normal large, planned events.
94. The Inquiry has found that information provided to passengers was inadequate which meant that passengers were unable to plan and make their journeys with any certainty. Whilst rail staff performed well in difficult and trying circumstances, the information provided to them for onward transmission to passengers was similarly inadequate; passengers often had the same inaccurate information.
95. The Inquiry has found that although Northern was aware that there would be problems in delivering the timetable in advance of its introduction and that there would be disruption to services, it did not warn passengers that this would be the case. Passengers were denied the opportunity to plan and make informed decisions about their journey.

Govia Thameslink Railway's preparedness to operate the new timetable

96. The Thameslink, Southern and Great Northern (TSGN) train operating franchise awarded to Govia Thameslink Railway (GTR) in 2014 was unique in several respects. It was a particularly large franchise, combining operating areas from three earlier franchises. Further, it was structured as a management contract to provide commercial flexibility in the approach to the introduction of new passenger services delivered by the Thameslink Programme from May 2018 onwards, including the removal of revenue risk.
97. The complexity and ambition of the Thameslink Programme, including the intention to run up to 24tph in both directions through central London, meant that programmes to deliver new infrastructure, new rolling stock, the new timetable and preparations to meet the service specification in the franchise all needed to be developed in parallel and delivered in time for May 2018. The new services were initially intended to step up in frequency from 20tph to 24tph in May 2018 and December 2018 respectively, the higher specification being dependent on the completion of new automatic signalling technology which was not required for the lower frequency in May 2018.
98. In recognition of the complexity of the programme and the need to coordinate the introduction of the different elements, an Industry Readiness Board (IRB) was established by the Secretary of State in January 2017 at the recommendation of Chris Gibb, who also chaired the board. The IRB reported to the Thameslink Programme Board and both supported the idea that the DfT consider rephasing the introduction of services in May 2018 down to 18tph, in order to assure greater resilience and reliability of the new services, before then stepping up in three further phases in subsequent timetables to reach 24tph in December 2019.

99. There was an iterative process between GTR and DfT during which they considered the operational and commercial consequences of the rephasing proposal, which began when GTR submitted advice to DfT in May 2017, followed by a decision in principle communicated to GTR in August 2017, and final approval by the Secretary of State at the end of October 2017.
100. There is no evidence found by the Inquiry to suggest that the decision to replan the phased introduction of GTR's May 2018 timetable was driven by concerns in 2017 about GTR's operational capability or readiness.
101. The consequences for the timetabling process of the decision to move to 18tph were then realised to be more substantial than GTR, the SO or DfT had assumed. By October 2017, the development of the Thameslink timetable by the SO was well advanced, and the assumption by all parties was that the timetable could continue to be planned at a frequency of 24tph, before removing a further 2tph from the operating timetable in addition to the 4tph that were already expected to be removed. In practice, the consequence of this further removal of 2tph was to create severe gaps in service for some destinations that were considered to be unacceptable for passengers. This realisation meant that GTR had to rebid for a substantial rewrite of the timetable that was being developed, creating significant pressure on the timetable process and the System Operator.
102. In hindsight the only way in which these risks could have been avoided is for the advice on the re-planning of phasing to have been sought earlier. The commissioning of this advice by DfT was not triggered until after the creation of the IRB. This suggests that a more complete approach to understanding and managing system integration and risks would have been desirable at an earlier stage in the Thameslink programme, as explored further later in this report.
103. With regard to the decision to replan the phased introduction of the Thameslink timetable, and the consequences for the timetabling process, the Inquiry makes the following findings:
 - GTR and DfT were each driven by their legal responsibilities during the process that arrived at the decision to re-plan the phased introduction of GTR's services. This meant that GTR was obliged by DfT to bid into the timetable process on the basis of a service frequency higher than required before a final decision was made, while DfT sought evidence that reducing the frequency of services would not undermine the Thameslink business case and value for money.
 - Neither GTR nor the SO predicted that the decision to remove an additional 2tph from the planned May 2018 timetable would result in the need for a more substantial timetable rewrite, and the Inquiry has found that this created unfounded confidence that the timetable would not be put at risk.
 - Although DfT could not have reasonably foreseen the risk of needing to rewrite the timetable, the length of time taken by DfT to make a final decision meant that this decision was not aligned with the Part D schedule for developing the timetable. This aggravated the challenge of rewriting the timetable, even before the later failure to deliver the Northern Infrastructure Programme created even greater problems.
 - In hindsight, had the final decision by DfT to phase the introduction of services from 18tph been aligned with the schedule for developing the timetable in August 2017, the unpredicted consequences for the Thameslink timetable may have been avoided and the consequential risks of a timetabling failure on the scale experienced would have been greatly reduced.
104. This reinforces our earlier finding about the importance of making critical decisions about programmes on which the timetable depends in line with the schedule in Part D of the Network Code.
105. A substantial iterative rewrite of the timetable to deliver a regular service planned at 20tph,

but with 2tph temporarily removed was then required at the end of 2017. This began a long and complex process in which many errors and service conflicts with other operators needed to be resolved, as described in greater detail later in this report. As referred to above, by this late stage in the timetabling process the challenge facing the teams in the SO and GTR was substantial, even before the additional challenge of needing to replan the Northern timetable was known in January 2018, and participants in the Inquiry have been in consensus about the extraordinary effort imposed on both teams by the process.

106. The schedule set out in Part D of the Network Code requires the SO to issue new timetables to operators twelve weeks in advance of their introduction so that accurately timed tickets can be sold to customers and train operators can plan and roster rolling stock and crews. This 'T-12' date on 23 February was anticipated to be missed, but by early April the timetable was still under development as greater than expected operational conflicts were being resolved. GTR proposed to DfT a 'rolling deployment' of the new timetable, by removing additional services at first, before reintroducing them over a period of three weeks following 20 May 2018. DfT consented to this on 10 May, with the expectation by GTR that 80-100 services would initially be removed per day before being reintroduced.
107. The compression of timescales meant that GTR had insufficient time to complete fully developed, optimised and quality assured train crew diagrams prior to consultation with staff.
108. The Inquiry finds that GTR could not have reasonably accelerated the train crew diagramming process, which followed the late delivery of the timetable from the SO.
109. GTR has provided the Inquiry with counterfactual analysis which suggests that with more time it could have developed better optimised driver plans that worked within its overall driver numbers. However the Inquiry cannot say with confidence that GTR would have been able to deliver a stable and reliable service if provided with a robust timetable at an earlier stage.
110. GTR had predicted as early as 2016 that it would not have enough drivers trained to be ready for May 2018, and planned mitigations accordingly. Even before the compression of the timetabling process, GTR was planning to use the 'workaround' of pilot drivers through central London to overcome the expected shortage of trained drivers on the new routes.
111. These mitigations had to be re-planned several times in the weeks prior to the new timetable. Nevertheless, GTR remained confident in its ability to operate services with only limited disruption and was surprised in the final days that its mitigations were insufficient. Mitigations were planned and re-planned on a responsive basis as new information became known.
112. The Inquiry has explored GTR's approach to preparing and stress testing its plans, and found that GTR's approach to predicting the risks around required driver numbers failed to reflect the real risks that it faced. GTR told us that it planned the level of driver resourcing using historical experience and 'professional judgement'. It did not apparently stress test its plans in light of realistically known risks about the exceptional nature of the May 2018 timetable change, or the gradual compression of the time available to them to develop optimised driver diagrams. The Independent Assurance Panel which reported to the Industry Readiness Board also failed to adequately challenge GTR on these plans when it examined them, despite identifying driver availability as a critical risk.
113. The Inquiry concludes that GTR had greater opportunity, in comparison with Northern, to plan and prepare its approach to driver training availability at an earlier stage, and that:
 - GTR's initial approach to planning and training drivers did not adequately recognise the exceptional scale of change and the risks arising from the May timetable;
 - GTR's plans were not adequately stress tested by either GTR or the DfT's Thameslink programme management boards, even

as the time available to prepare driver diagrams was reduced; and

- Sufficient contingency was not prepared for in advance, and was not available as problems emerged.

114. It is impossible for the Inquiry to judge whether, had this been done, GTR would have been able to fully compensate for the late finalisation of the timetable and manage the problems that arose from inefficient driver diagrams. The length of the Thameslink Programme and the knowledge that the May timetable change would be significant gave GTR a much greater ability to prepare and test its plans than Northern had. Earlier stress testing of the risks and knowledge of the likely shortage of drivers would have given GTR some opportunity to further understand and communicate the likelihood of disruption to passengers.
115. The Inquiry has found that GTR did not adequately understand the magnitude of the risks around driver resources. GTR gave assurance to the industry and government based on inadequate understanding of the risks. The assurances that it gave were in good faith but wrong.

GTR response to passengers following 20 May

GTR's action to mitigate the impact

116. The Inquiry heard that, close to the timetable change, GTR found that it would not be possible to run the full service immediately and PDF timetables showing the later introduction of some services were produced. GTR stated that it started to have problems from 23 May. The service was poor in week two of the timetable but the impact on passengers was lessened due to the school half-term break. On the third week, GTR started to identify real impacts with significant gaps in services.
117. In some areas a single Thameslink service replaced local stopping services previously operated by Southern and Great Northern, which led to large gaps in services. The Inquiry heard that every effort was taken to
- run additional trains where crew and stock permitted. Sometimes this involved running services at short notice, meaning that trains which had been showing as cancelled or that had been deleted from passenger information systems did actually run.
118. As there were large gaps in some train services, standby buses were introduced at some locations. Restrictions on the use of taxis were relaxed so that station staff could arrange them where passengers were facing extended waits. A station feed e-mail thread was set up which allowed staff to contact control to advise of crowding at their station or to request stop orders. Ticket acceptance was quickly introduced between Southern, Thameslink and Great Northern but there were delays in arrangements on Gatwick Express as it had to be agreed with DfT.
119. The Inquiry has found that trains ran without prior notice, information about intermediate stations or platform information. Although running additional trains where crew and stock permitted was a good response to passenger needs, doing so without providing any prior information was unhelpful. The use of special stop orders was a reasonable and proactive short-term response to addressing passenger needs. The specific arrangements put in place for disabled passengers who had booked assistance was positive and welcome. Nonetheless, the impact on these passengers arising from inadequate information would have been particularly severe.

GTR's provision of information to passengers during disruption

120. The Inquiry heard that none of the lists of cancelled trains were communicated to passengers who were told to check journey planners frequently; by 10pm in the evening and then again in the morning. Trains were deleted so that they did not appear on screens as cancelled; at busy stations there was a risk that the list of cancelled trains would hide those that were running. GTR used the term "operational incident" to describe the issues with services in preference to "a shortage of train crew" as it felt that the issue was crews

in the wrong place rather than insufficiency of numbers.

121. Knowing that it was exam time for some students, GTR contacted schools in the area to ensure that students could get to their exams. The solution was a combination of trains, buses and taxis. Further resource was added to the social media team to respond to tweets and provide on-the-go travel support as passengers could not always rely on the information they were seeing and there was an escalation in tweets from them to GTR.
122. During the morning and evening peak there was a management presence at stations with the objective of trying to provide explanations to customers. Ticket inspectors or passenger hosts were also positioned on stations, supplemented by the rail enforcement officers if there were security problems. In response to passenger feedback at key stations such as Harpenden additional staff were deployed. Extra staff were also added at St Pancras to address issues of overcrowding and to resolve any safety issues by opening gates where there was a potential risk.
123. The Inquiry has found that information provided to passengers was inadequate which meant that passengers were unable to plan and make their journeys with any certainty. GTR's realisation that the timetable was not working as planned was not communicated effectively to passengers who were given no assurance that the company had the situation under control.
124. GTR carried out a detailed programme of engagement in the months prior to the launch of the new timetable. GTR's communications plan in particular was detailed and extensive, and the Inquiry's research showed that levels of awareness amongst passengers in advance of the change was high.
125. The Inquiry has found that although GTR was aware that there would be problems in delivering the timetable in advance of its introduction and that there would be disruption to services, it did not properly warn passengers that this would be the case. Passengers were

denied the opportunity to plan and make informed decisions about their journey.

Systemic risks and their management

126. The Inquiry has sought to understand whether elements of the industry's organisation and processes may have contributed to an environment in which risks to successful implementation of the May 2018 timetable were greater than they could have been. Information received by the Inquiry suggests that risks were often underestimated or not understood at all because they were interdependent and systemic in nature, rather than being owned by individual parties.
127. These issues will be a focus for Phase 2 of the Inquiry as we work towards recommendations for change.
128. Participants in the Inquiry have suggested that industry processes, which have generally been successful for the past twenty years, have revealed weaknesses in the preparation and implementation of the May 2018 timetable because of the scale and complexity of the infrastructure changes combined with the volume of consequential timetable changes required. If this is the case then it is important because major network changes will continue to influence future timetables, driven by unprecedented levels of investment in new infrastructure and rolling stock currently underway or being planned.
129. Major train service change such as for May 2018, and planned future timetables, is dependent on the parallel delivery of at least four major programmes, which are currently each subject to separate governance and assurance processes. These are:
 - The commissioning of new infrastructure (usually developed by Network Rail under Programme Management Boards chaired by the DfT, but this can also be led other authorities like Crossrail, TfL or independent developers outside the DfT's programme structure);
 - the specification and tendering of franchises, with service specifications embedded in contracts (let by DfT and

- devolved authorities in Scotland, Wales or Northern England);
 - the procurement and introduction of new rolling stock (which can be commissioned by DfT, other devolved commissioning authorities, or train operators); and
 - timetable development (led by Network Rail's System Operator).
130. These elements cannot afford to be considered separately because they are interdependent. Delay or changes to one element forces change in the others, but industry processes are not built to accommodate this. As noted earlier in this report, the System Operator was in the best position for May 2018 to manage dependent risks between infrastructure programmes and timetable development, as described earlier. The body that has greatest visibility of all dependent elements is DfT. However, while DfT is responsible for making big decisions about projects and changes to them, and is accountable for most of the costs, it is the industry that best possesses the information and capability needed to manage these and advise DfT about them. This did not happen at the rights points in advance of May 2018.
131. The Inquiry has found that the diffuse nature of accountability for different programmes across the industry and government results in a lack of clarity about roles and responsibilities for the oversight and control of complex system risks. There is an apparent gap in industry responsibility and accountability for the management of systemic risks, and industry process needs to change to accommodate these responsibilities.
132. The inquiry has considered whether the programme management structures created following the Bowe Review and chaired by DfT are structured and sufficiently remitted to consider dependent risks arising from the interaction of the multiple programmes.
133. The Inquiry considers that the creation of the DfT-chaired Programme Boards was a necessary strengthening of infrastructure programme governance and control of costs. However, the Boards are focused on the development of infrastructure and are not remitted to consider systemic risks arising from the programmes. The creation by DfT of the Thameslink Industry Readiness Board was a recognition of the importance of focusing on system integration issues, and demonstrated that a more integrated approach can help avoid risks. However, the IRB model is not a sufficiently integrated or resourced approach to be an alternative to integration of systemic risks into formal programme management architecture. Among other things, a stronger focus on systemic risks may drive better alignment between the timing of programme decisions and the schedule for timetable development.
134. Phase 2 of the Inquiry will consider, in consultation with all industry parties, whether further measures should be taken to oversee and manage systemic risks arising from interdependence rail programmes, including franchising, rolling stock and non-Network Rail led schemes. It will also specifically address the question of the role of independent regulation.

The role of regulation and the ORR

135. Alongside this Inquiry, ORR established a 'Prior Role Review' to investigate actions that ORR took which may be material to the disruption in May 2018. That is published alongside this report.
136. ORR is the independent economic and safety regulator for Britain's railways. It is accountable to Parliament and the public to protect the people who use, interact with or work on the railway. It regulates Network Rail including the setting of targets it has to achieve and reports regularly on its performance. It also enforces consumer law and certain consumer requirements in train operator licences.
137. ORR does not have the powers or visibility to consider systemic risk across the whole industry, because it does not have regulatory powers to oversee franchise terms, rolling stock contracts or DfT decisions with regard

to the oversight or change control of Network Rail's enhancement projects. However, it does oversee Network Rail's compliance with the terms of its network licence and so has visibility of both the infrastructure programmes and the timetable process which depended on them for May 2018. It also enforces consumer law and certain consumer requirements in train operator licences.

138. ORR exercises these responsibilities through a process that escalates from regular monitoring and reporting on Network Rail's delivery of its regulated outputs (set in 5-yearly Periodic Reviews), targeted investigations of potential failings to deliver these, followed by enforcement action if failings are found.
139. In light of the emerging delays to the process for developing the May 2018 timetable following the failure to deliver the NWEF programme on time in December 2017, ORR initiated an investigation into Network Rail's compliance with its licence with regard to the timetabling process. This focused on the risks to passengers from the SO's inability to then provide a timetable in time for the T-12 date from which services are planned and tickets sold.
140. ORR's approach in monitoring Network Rail's preparation for the timetable was to assure itself that Network Rail was properly consulting with industry partners through its decision-making. We saw the options that Network Rail was considering in February 2018 for the May timetable and considered that we had no additional knowledge or any basis to challenge these or suggest alternatives. We checked that Network Rail had consulted train operators in considering these options and were satisfied that it had been through a processes that had considered criteria including passenger impact. We did not conduct further analysis beyond this.
141. ORR did not predict the potential disruption that occurred in May 2018 because it derived its information from the industry, which itself did not predict the disruption before it occurred. ORR also considered that Network Rail was working cooperatively with the industry in early 2018 when it was deciding whether to proceed with the May 2018 timetable change or not.
142. The Inquiry has found that ORR has sufficiently broad powers that it could consider the risks that Network Rail's infrastructure programmes create for timetable changes if it chose to do so. It has not previously identified this as a critical risk or priority based on previous largely successful timetable changes. ORR failed to identify this risk in the approach to the May timetable change, including through the investigation that it initiated into Network Rail, which correctly focused on the potential impact on passengers but did not focus on risks to operational preparedness.
143. Through Phase 2 of the Inquiry, ORR will consider whether, alongside changes to the management of systemic risks across Network Rail, the wider rail industry and government, the role of the regulator also needs to change, in particular where stronger independent assurance is thought to be required for timetable changes.
144. It is reasonable to consider whether the ORR should have acted sooner to investigate risks to the timetable process as delays to the infrastructure projects emerged in 2017. It is also reasonable to consider whether the scope of ORR's subsequent investigation was sufficiently broad, given that it did not focus on the risk of disruption to operators and consequential impact on passengers from the late timetable.



