

Sole Reference by a Claimant to a Timetabling Panel in accordance with the provisions of Chapter H of the ADR Rules effective from 1 August 2010

(and as subsequently amended)

1 DETAILS OF PARTIES

1.1 The names and addresses of the parties to the reference are as follows:-

- (a) Abellio Scotrail Limited ("ASR") a company incorporated in Scotland with company registration number SC450732 whose registered office is at 5th Floor, Culzean Building, 36 Renfield Street, Glasgow, G2 1LU; and
- (b) Network Rail Infrastructure Limited ("Network Rail") a company incorporated in England and Wales with company registration number 02904587 whose registered office is at 1 Eversholt Street, London NW1 2DN.

1.2 ASR included the identity of third parties who may be affected by the Panel findings in its Notice (see Annex 1).

2 THE CLAIMANT'S' RIGHT TO BRING THIS REFERENCE

2.1 This matter is referred to a Timetabling Panel (the "**Panel**") by ASR being an Access Beneficiary in accordance with the definitions in Part D, ASR is a Timetable Participant for determination in accordance with Condition D5.1 of the Network Code. It relates to the issue by Network Rail of final revised Timetable Planning Rules under D2.2.5. This is an appeal brought in accordance with D2.2.8.

3 CONTENTS OF REFERENCE

3.1 This Sole Reference includes:

- (a) The subject matter of the dispute in Section 4;
- (b) A detailed explanation of the issues in dispute in Section 5;
- (c) In Section 6, the decisions sought from the Panel in respect of
 - (i) legal entitlement, and
 - (ii) remedies; and
- (d) Appendices and other supporting material in Section 7.

4 SUBJECT MATTER OF DISPUTE

4.1 This is a challenge by ASR against the revision of the 2018 Timetable Planning Rules (Scotland) published by Network Rail on 3 February 2017 (the "**Revision**") (see Annex 2). ASR submits that the Revision:

- (a) was made without necessary and/or sufficient consultation or necessary and/or sufficient regard to the responses provided by Timetable Participants including ASR;
- (b) was made without sufficient (or alternatively, without accurate) analysis, and/or modelling or is not otherwise accurate;
- (c) was made without reference to or by incorrect application of the Decision Criteria set out in D4.6 or was based on or influenced by matters which are not included in the Decision Criteria;
- (d) was contrary to the correct application of the Decision Criteria; and
- (e) does not reflect the actual/proper operation of the Network (including/or the Network as Network Rail is required to provide and maintain it).

4.2 Network Rail is obliged to consider revisions of the Timetable Planning Rules in accordance with Condition D2.2 of the Network Code. Amongst other things, this requires:

- (a) Network Rail to apply the Decision Criteria (as set out in D4.6) to all decisions (D4.1.1).

ASR alleges that Network Rail did not apply the Decision Criteria, applied other considerations in addition to the Decision Criteria and/or any application of the Decision Criteria which did take place is unsustainable or wrong.

- (b) Consultation between Network Rail and Timetable Participants (including ASR) in respect of any proposed changes to the Timetable Planning Rules between D64 and D60 (D2.2.2), distribution of draft Timetable Planning Rules (D2.2.3) and consultation on that draft (D2.2.4(a)) as well as consideration by Network Rail of representations about proposals, objections and changes (D2.2.4(b) and D2.2.5).

Proper consultation did not occur and Network Rail did not take due note of the submissions and concerns of ASR (and potentially others). Instead Network Rail appears to have been motivated by seeking to implement its new centralised Timetable Rules Improvement Programme ("TRIP") rather than established timetabling approaches (which may in turn amount to an unnotified Part G Network Change).

- (c) Issue by Network Rail of the Revision (D2.2.5) prepared according to the Decision Criteria (D2.2.6) (see above regarding Decision Criteria).

Network Rail issued the Revision on 3 February 2017 despite being aware of serious outstanding concerns, not having complied with the steps above, apparently not applying the Decision Criteria or having undertaken sufficient or accurate modelling and analysis.

- (d) Provision by Network Rail of its reasons for making the Revision (D2.2.6).

ASR submits that the reasons given do not justify the changes to the Timetable Planning Rules and no reasons were given which are justified against the Decision Criteria as the data presented does not support the change;

- 4.3 ASR, as a Timetable Participant, is entitled to appeal the issue of the Revision under D2.2.8 within 15 working days (D2.2.8(b)). It has done so and this is such an appeal. The appeal is to be referred to a Timetabling Panel (TTP) (D5.1.1) and is subject to further appeal to the ORR in accordance with the terms of D5.2.1.
- 4.4 ASR also considers that Network Rail has changed its approach to setting the Revision in a manner which affects the operation of the Network. As such, ASR has also issued a Part G (Network Change) reference to ADRR in parallel to this reference. To avoid duplication of issues, ASR has requested that its Network Change reference be stayed pending the outcome of this TTP reference. Network Rail has agreed to this proposal.
- 4.5 ASR has raised its concerns with the Revision before it was issued (in accordance with D2.2.4(b) and otherwise). Nonetheless, Network Rail proceeded to issue the Revision on 3 February 2017. ASR continues to object to the proposed revisions. Further details are given below.

5 EXPLANATION OF EACH ISSUE IN DISPUTE AND THE CLAIMANT'S ARGUMENTS TO SUPPORT ITS CASE

The revisions were made without necessary and/or sufficient consultation or regard to the responses provided by Timetable Participants including ASR;

- 5.1 D2.2.2, D2.2.4 and D2.2.5 require Network Rail to consult with ASR and to consider its representations and objections.
- 5.2 An overview of the background to the Revision is set out in Appendix 1. That demonstrates that Network Rail was unwilling to engage with ASR on the rule changes in a meaningful way and appeared principally motivated by the application of a new approach under TRIP rather than the Decision Criteria. This amounts to a failure properly to consult.
- 5.3 This failure properly to consult with ASR and to consider ASR's submissions led Network Rail to produce revisions to the Timetable Planning Rules (Scotland) which were not representative of the actual operation of the Network and which will result in

unnecessary and inappropriate impacts upon ASR's operations. As such they led Network Rail into error in application of the Decision Criteria including the Objective:

"to share capacity on the Network for the safe carriage of passengers and goods in the most efficient and economical manner in the overall interest of current and prospective users and providers of railway services."

The Revision was made without sufficient (or alternatively, without accurate) analysis, modelling and/or accuracy;

- 5.4 The Revision results from Network Rail's Timetable Rules Improvement Programme (TRIP) team at Milton Keynes which considered trains running to High and Low Level stations between Glasgow Central and Haymarket East. The TRIP team used a computer based tool Observed Data Analytics (ODA) to analyse this performance (See page 7, Annex 3).
- 5.5 However:
- (a) The ODA analysis for the WCML was completed using data from December 2014 to October 2015 but for the North Clyde study is was from 7/3/16 to 21/3/16 and Motherwell to Cumbernauld was from 7/3/16 to 18/3/16. The timetable has been changed several times since that data was captured (in part following ORR's review of Network Rail's delivery of its regulated performance targets in Scotland in 2014-15 – see Annex 8), resulting in performance improvements. ODA data, in the same way as OTMR data, is based on the "current timetable"; a different timetable will give different values, as trains will be pathed differently and may see different signal aspects and sequences which would alter driving behaviour, and therefore the SRT that would be seen in ODA.
 - (b) ODA depends upon timings derived from signal berth occupation which looks at actual train movements between signals rather than TIPLOCs (hence depends upon berth offsets) and station dwell times within the sample dates but includes no reason why the timings are what they are. However, the TRIP team did not have the relevant data for example:
 - (i) the executive summary of the Glasgow to Carstairs report issued on the 15 July 2016 states *"For ScotRail services operating off the WCML, berth offsets were frequently not available. For the purposes of SRT analysis, scheduled dwell times have been assumed"* (page 5, Annex 3); and
 - (ii) on the Balloch to Larkhall route there are stations within the track circuit berths (meaning that SRTs and dwell times cannot be accurately

disaggregated) and in the ODA report it states for certain branches "*Unable to calculate SRT due to lack of berth offsets*" and for other branches "*Unable to calculate SRT due to lack of berth offsets*" (page 46, Annex 3).

- (c) ODA does not look at junction margins which are a key component of the TPR and would usually be reviewed alongside SRTs. When considering changes to the TPR it is not appropriate to single out SRTs from other allowances over a route. Proposed changes to SRTs need to consider the interaction with junction margins, headways and platform re-occupation times. Recommendations to alter SRTs without considering junction margins will fail accurately to represent capacity of the operational network;
- (d) No cleansing has taken place to the ODA data, as such it contains, VSTP, STP, freight, other operators, days of significant perturbation, and potentially 'errors' all of which require cleansing from the sample before it might be used as a representation of the 'current' service to calculate any changes to the TPR;
- (e) The ODA data, despite using data taken from signal berths, is not split by routing, e.g. a train departing from Airdrie platform 1 will take a different length of time to a service departing from platform 2 to get to Coatdyke but a single value is given. The same applies for a service arriving at Dalmuir platform 3 or platform 5 from Clydebank, or a train going towards Lanark or Carstairs where just a single value is shown from Carluke to Lanark Junction. ASR queried some of these timings on 13 October 2016 after receipt of the proposed SRT's sent out on 12 October 2016 and how adjustment time was to be dealt with but no adequate response was received from Network Rail;
- (f) The ODA data relies on berth offsets being correct many of these offsets have not been checked/reviewed for a number of years and when audited have been found to be in error and unrepresentative of what is actually happening, this happened on the Balloch branch a couple of years ago, when performance dropped after an offset was changed. A berth offset uses a single value to calculate 'when' a train will arrive etc. irrespective of the class of train, the timing load, the calling pattern, the signal aspect, whether the train has been brought to a stand at that signal or the routing of the train, as highlighted above;
- (g) There are circumstances where the TRIP produced values are not acceptable for determining headways, as ODA data does not provide representative headways in congested areas, especially approaching terminal locations or on routes with long block sections with intermediate stations which are not covered by signal berths e.g. the Shotts route between Cleland and Carfin or the Larkhall

branch where Merryton is between Larkhall and Allanton Loop or the Balloch branch where the last signal is just less than 4 miles from the buffers but there are 2 intermediate stations. The routes which have been chosen as part of this study for Scotland fall into this category.

- (h) Signalling Headway is defined in the 2018 Timetable Planning Rules (National) as "*The minimum time permissible between two successive trains at a specific signal on the same line in the same direction based on the best performing trains using the route*" (page 196, Annex 4). The ODA work does not follow this principle as the TRIP suggested headway value considers the following signalling section as well as the original report.
- (i) The ODA analysis does not properly deal with platform reoccupation, as ODA shows a spike in the following train because ODA is based on green signals. Platform Reoccupation is defined in the 2018 Timetable Planning Rules (National) as "*The time between first train departing and second train arriving at a specific platform in the same direction; this commonly defaults to, but should never exceed the applicable headway. This value need not be calculated on the least restrictive signal aspect, but the second train in the sequence must be able to meet its SRTs*" (page 196, Annex 4). If this definition is applied then it does not support increasing the headway or station reoccupation allowance between Partick and Hyndland as proposed in the version 1 of the 2018 Timetable Planning Rules (Scotland) (page 131 and 132, Annex 5).
- (j) The TRIP produced values do not reflect ASR data. The actual proposed SRTs were included in Version 1 of the 2018 Timetable Planning Rules (Scotland) which was published on 21 October 2016 (see Annex 5). ASR compared the proposal against its own On Train Monitoring Recorder (OTMR) data which it has for some classes that worked over the routes. This data is GPS-based, however for station to station it is calibrated on wheels-stop to wheels-start. It shows significantly different values to the ODA data. For example, for an Airbles to Motherwell "Start to Stop", the ODA data showed 1m31s, whereas the quickest ASR had seen on the OTMR sample was 1m52s. Network Rail was proposing to reduce the SRT by 30 seconds to be 1m30s rather than the current 2m00s. A table showing the full analysis of values carried out by ASR is attached at Annex 6.
- (k) Current ASR EMU sectional running times include a 5% engineering allowance in each individual section, rather than blocks of engineering time. This is not mentioned in the ODA report and it is therefore not clear whether these allowances have been preserved.

- (l) SRTs are described in 6.4.3 of the Timetable Planning Rules (National) as being “(c) *Optimal performance possible for line and rolling stock, including acceleration or deceleration impact as appropriate*” (page 187, Annex 4). Optimal means “extremely good, the most favourable”, which does not fit with using the 25th percentile of data.
 - (m) The ODA assumes that a train will only depart on a green signal which is not always the case in congested areas, such as between Partick and Hyndland as highlighted above.
- 5.6 Performance Modelling was recommended by the ORR in its investigation report entitled “*Network Rail’s delivery of its regulated performance targets in Scotland 2014-15*”:
- “Our analysis of the December 2014 timetable has highlighted several avoidable operational planning errors and a number of tight timings. While better (and earlier) modelling, prior to the introduction of the new electric services, would have helped maintain performance levels, our investigation has concluded that Timetable Planning Rules (TPRs) issues were significant in NR failing to achieve its 2014-15 PPM target”* (page 5, Annex 7).
- 5.7 Based on the ORR’s previous findings we would have expected the new timetable and its rules to have been modelled prior to any implementation. ASR would have expected RailSys or an equivalent system to have been used for this task, where the current timetable would have been modelled and then the proposed timetable would have been modelled to demonstrate an improvement (or otherwise). At the very least SRTs should have been modelled in VISION and RailSys prior to a formal proposal. This was not done but for Southeastern VISION modelling was undertaken which include investigation of junction margins, headways and platform reoccupations, Wessex used a bespoke methodology and both Anglia and Northern used a combination of VISION and TRAIL modelling as part of the impact assessment.
- 5.8 As a result the proposed Revision is not based upon reliable or accurate data or modelling and diverges not only from historic approaches and values but from observed actual data obtained by ASR.
- The revisions were made without reference to or by incorrect application of the Decision Criteria set out in D4.6 or was based on or influenced by matters which are not included in the Decision Criteria;**
- 5.9 ASR wrote to Network Rail on 25 January 2017 to ask Network Rail to justify the changes against the Decision Criteria (see Annex 8). However, to date no such analysis has been provided. ASR infers that no (or no adequate/accurate) analysis was

conducted against the Decision Criteria as is required. If so, the Revision should be rejected without further consideration as is required.

- 5.10 Network Rail has sought to apply TRIP across the national Network in place of established approaches to designing Timetable Planning Rules. Its decision to do so (which is not relevant to the Decision Criteria) appears to be one reason for the Revision. Alternatively or additionally Network Rail may in part have been motivated by an intention to improve PPM by softening the timetable to allow more recovery from incidents. Neither of these reasons should have been taken into account. ASR awaits Network Rail's explanations of the reasons for applying TRIP and reaching the Revision.

The revisions were contrary to the correct application of the Decision Criteria;

- 5.11 In any event any proper application of the Decision Criteria would not support the Revision. ASR has set out in Appendix 2 an analysis of the Decision Criteria which demonstrates that the Revision should not be permitted. In the event Network Rail does provide contemporaneous evidence of its assessment of the Decision Criteria, ASR will challenge any such assessment for the reasons given in the Appendix.
- 5.12 ASR's analysis of the TPR changes identified that there would be a significant resource impact due to loss of ability to detach/reattach at Lanark, Milngavie and crew relief at Airdrie and Bathgate.
- 5.13 The proposed timetable for Airdrie/Bathgate with sub one minute dwell times does not reflect the patronage at these stations (both requiring dwell time of at least 1m00s). The Timetable Planning Rules (Scotland) state the multiple unit dwell at Airdrie is 1m00 (page 130, Annex 2).
- 5.14 While ASR has done its best to consider the final impacts of the Revision, the ultimate impact on ASR, capacity and passengers has not yet been fully calculated in part because Network Rail has not undertaken the necessary modelling or developed a new timetable. The proper application of the Decision Criteria may not be possible without Network Rail taking better/ fuller steps as they should have done in developing the proposed Revision.

The revisions do not reflect the actual/proper operation of the Network (including/or the Network as Network Rail is required to provide and maintain it)

- 5.15 As highlighted above the TRIP data does not reflect ASR data or historic data. ASR consequently considers it is unreliable. As described above, because TRIP has used data based on the 25th percentile and based on historic timetables when PPM was lower than it is today, the Rule changes risk softening the timetable and therefore by extension Network Rail's regulatory and contractual performance targets. In addition, these changes may remove capacity from the Network due to headway increases.

6 DECISION SOUGHT FROM THE PANEL

6.1 ASR requests that the Panel:

- (a) Directs Network Rail that the proposed Revision be cancelled and not apply (or order that the revisions are so cancelled);
- (b) Declares that:
 - (i) Network Rail has not correctly applied the Decision Criteria;
 - (ii) That there remain a number of significant unaddressed issues raised by ASR regarding the methodology employed to utilise ODA data for the Revision and that further jointly specified methodological work should be undertaken to address these issues, taking account of alternative and more relevant data including that provided by ASR;
 - (iii) That work undertaken by the TRIP team in Scotland has not been modelled to validate the values and prove the data is correct and that such modelling should be undertaken;
 - (iv) That no performance modelling has been undertaken to demonstrate a performance improvement and that such modelling should be undertaken; and
 - (v) That the Timetable Impact Study independently undertaken is too limited to demonstrate that all ASR's Firm Access Rights can be accommodated;
- (c) Gives general directions to Network Rail specifying the result to be achieved in connection with the Revision including the objective of the revisions, the appropriate level of assessment and modelling involved (including by reference to ORR guidance), and where relevant the appropriate assumptions to take. Such directions to include a direction to identify Timetable Planning Rules which where possible allow Access Beneficiaries to comply with Franchise Agreements and SLCs; and
- (d) Or, as appropriate, deems the relevant timescales for the preparation of a working timetable to amount to exceptional circumstances and substitute its own decision in connection with the Revision.

7 APPENDICES AND ANNEXES

This reference contains two Appendices:

- Appendix 1 - Background to change on North Electric and Argyle Lines

- Appendix 2 – Table assessing the correct application of the Decision Criteria

The following Annexes accompany the reference

Tab/ Annex	Item	Date
1	Notice of Dispute	16 February 2017
2	2018 Timetable Planning Rules (Scotland), version 2	3 February 2017
3	ODA report produced by Network Rail's Timetable Rules Improvement Programme team	21 March 2016
4	Timetable Planning Rules (National), version 2	3 February 2017
5	2018 Timetable Planning Rules (Scotland), version 1	21 October 2016
6	Tables showing full analysis of values carried out by ASR	
7	ORR's investigation report entitled " <i>Network Rail's delivery of its regulated performance targets in Scotland 2014-15</i> "	August 2015
8	Letter (ASR/Network Rail)	25 January 2017
9	Email (Network Rail/ASR)	22 March 2016
10	Network Rail's impact assessment of the Scotland December 2016 timetable changes	29 December 2016
11	Extract from Table 2.1 (Passenger Train Slots) in Schedule 5 of the Track Access Contract (Passenger Services) between Network Rail and ASR.	3 March 2016
12	Remit with comments from ASR	25 October 2016
13	Published remit	25 October 2016
14	ASR's comments on Network Rail's Timetable Impact Assessment v1	4 January 2017
15	Network Rail's impact assessment of the Scotland February 2017 timetable changes	10 February 2017
16	Extract From Route Utilisation Strategy (Scotland)	
17	ODA Report Scotland Strathclyde Electrics (Argyle Lines & North Clyde Lines)	21 March 2016
18	ODA Report Scotland Cumbernauld to Motherwell and Springburn	21 March 2016
19	Emails Verster P / Smith D	20 September 2016

8 SIGNATURE

For and on behalf of *Abellio ScotRail* Limited



Signed

SAMUEL ANDREW PRICE

Print Name

HEAD OF LEGAL

Position

Appendix 1 – Background to changes on North Electric and Argyle Lines

Performance on the North Electric and Argyle Lines was declining for a number of years prior to 2014, and was highlighted by the ORR in its investigation into "Network Rail's delivery of its regulated performance targets in Scotland 2014-15" (see Annex 7) noting:

"Our analysis of the December 2014 timetable has highlighted several avoidable operational planning errors and a number of tight timings. While better (and earlier) modelling, prior to the introduction of the new electric services, would have helped maintain performance levels, our investigation has concluded that Timetable Planning Rules (TPRs) issues were significant in NR failing to achieve its 2014-15 PPM target" (page 5, Annex 7).

In light of these issues, ASR expected Network Rail to undertake better early modelling to improve the rules.

Network Rail passed this role to its TRIP team. That team conducted its analysis into the rules using ODA (the issues with which are described in the body of the reference). To do so it used data from December 2014 to October 2015 and from March 2016.

Changes to operation since data relied upon by Network Rail

However, since that data was captured there have been a number of timetable changes on the route, including a 20 week closure of Glasgow Queen Street High Level station from March to August 2016. This closure caused services to be diverted to operate through the Low Level section via the new cord at Anniesland and diversions of the long distance services to Glasgow Central High Level. This required a number of trains to be removed from the route at Partick station to enable gaps to be created for the diverted services.

At the time the timetable implemented during the Queen Street closure was considered by Network Rail to be "*working a treat*" and "*delivering extremely well*" (see Annex 9). The structure of the Timetable was therefore rolled forward for use when the services went back into Queen Street High Level station (rather than the timetable reverting to the one bid for the May 2016 Timetable change), following a spot bid of the alteration to Network Rail.

At this point the Argyle Line trains that terminated at Anderson during the blockade returned to running through to Milngavie and Dalmuir through the Partick-Hyndland corridor. The revised structure also removed the four morning and two evening peak additional services on the North Electric service group, which enabled operation of a Standard Hour All Day Timetable. This reduced the number of trains passing over the busiest junction (Hyndland East) on the network.

It quickly became apparent to ASR once this change was made in August 2016 that the timetable – although Timetable Planning Rule-compliant – was not recovering from perturbation as well as the timetable in place prior to the Queen Street Closure, and the amount of delay

minutes increased significantly. (Although these issues were not connected with the data being used by Network Rail's TRIP team for ODA which was based on the former timetable)

The recovery issues led to significant pressure to "fix" performance as soon as possible an email from Phil Verster on 20 September 2016 was very clear "I have a strong sense that you and your team are crucial and central to the performance improvements we now need so urgently? Is your team focussed on this please?". This was followed up by a second email "please pull out all the stops to get performance improvements into the timetable for us; all the stops" (see Annex [?]).

The North Electric PPM had dropped from 90.7% during Queen Street closure to 86% with the August Timetable Change. The Right Time on the same route had dropped from 55.7% to 45.6% over the same period. But Right Time had actually increased from the December 15 Timetable of 43.6% but PPM had fallen from 88.8%. ASR's Planning Teams looked at numerous options for improving performance both in the currency of the timetable (May 2016) and in the next timetable (December 2016).

The pressure to improve the service led to a number of Spotbids for the December Timetable. The change from ASR was focused on the following areas:

- An additional service from Helensburgh to Glasgow during the morning peak to respond to customer and stakeholder pressure, this utilised a unit that had been released for coupler modifications which was not returned to the active fleet;
- Performance improvements on the North Clyde and Argyle line focused in following areas:
 - Spacing the dwells on eastbound Argyle line services between Glasgow Central, Argyle St and Rutherglen instead of services having extended dwell at Glasgow Central;
 - Adding additional 30 seconds of dwell between Partick and Hyndland where it could be included in the timetable but protecting turn round times at terminating locations; and
 - A reduction in the number of traincrew changeovers at Hyndland.

These changes drove an increase in ASR's overall PPM to 93.2% in Period 12, which is the second best period performance since the introduction of the targets in 2000. This performance was 1.6% better than period 12 last year.

ASR considers that these changes, although individually small, have delivered a step change in ASR's performance and this process will continue as part of "business as usual". Essentially solutions were being found to bring PPM and recovery back to good levels.

Network Rail develop the Revision without reference to current operations or impact on ASR

The Revision has taken place in parallel ignoring the above developments following October 2015 and with reference to conditions before current operations.

The original timetable for the Timetable Impact Assessment was to be complete by 30 May 2016. This was discussed in detail at the Performance Meeting on 4 March 2016 and the TRIP Sprint 1 action tracker had the following statement "*Andy Bray to carry out a timetable impact assessment on the outputs of TRIP Sprint 1 and 2 Scotland, to identify any risk to the volumes or journey times of all trains impacted by the reports.*" Version 1 of the impact study was published on 29 December 2016 (see Annex 10).

In advance of Network Rail's own Timetable Impact Study, ASR looked at the proposed ODA values published at v1 2018 TPR to try and understand the effect of the change on its own services. It quickly became apparent that significant changes were being proposed to the up-to-date timetable which ignored solutions which had been developed, the actual performance of the network and the impact upon ASR services (essentially from reduction in capacity, ASR operations would become more expensive, require more crews, carriage miles and both unutilised stock and new stock as well as preventing ASR from complying with its contracted Service Level Commitments).

Turnrounds were being reduced at destinations especially at Milngavie and Lanark to such a level that trains would no longer have time to attach and detach at these locations. The current Reversal DMU/EMU is 8 minutes including coupling and uncoupling, which reduces to 5 minutes when there is no attach / detach. This is documented in the TPR. These retiming's would have meant that ASR wouldn't be able to swap units between diagrams to use its resources in the most efficient manner.

In the current timetable (December 16) there is one attach / detach activity at Lanark which enables strengthening of the 1721 Glasgow Central to Lanark. The passenger counts taken in November 2016 showed 344 passengers on board. As a single class 318/320 only has 210 seats, this service must therefore be formed of a six car set. This attach cannot take place in Glasgow Central as the change cannot be accommodated in the station docker with an 8 minute turnaround. When an attach takes place at Glasgow Central earlier in the day on the Lanark service group a step back has to be introduced to give sufficient time to allow the activity to take place.

At Milngavie, ASR has two attach / detach activities during the day on the Argyle Line services. One set enables the 1709 Milngavie to Motherwell service to be increased to six cars, reflecting the most recent passenger count which showed 253 people on board. The other set enables strengthening of the 1703 Dalmuir to Motherwell later in the day, again reflecting the most recent passenger count, which showed 276 people on board.

An additional three class 318/320 services would be required to be in service in order to avoid the three attach / detach activities described above. As ASR's Service Planning unit has already diagrammed all available units in the peaks, ASR would have to lease and fund additional units for this to be possible.

ASR's analysis also concluded that on the North Electric network some of the West Highland services could not be accommodated without (a) removing stops from other services and (b) changing the routing of the Edinburgh to Helensburgh services from operating via Yoker to running via Singer. This would be contrary to ASR's Track Access agreement, which specifically refers to two Edinburgh to Helensburgh services; one via Yoker and the other via Singer (see Annex 11).

As a consequence of the extended journey times on the Airdrie to Bathgate route, ASR also had to reduce the station dwells at Bathgate and Airdrie, which in some cases meant that traincrews could no longer be relieved during those dwells. This would likely increase the number of drivers travelling as passengers, and therefore increase ASR's traincrew costs. ASR allows 1m30s minutes for a traincrew changeover, although this is not listed specifically at Airdrie or Bathgate in the TPR. ASR also does not spot bid for Network Rail "C stop" activities, as this would drive further spot bidding post T-12.

No detailed work was undertaken on the traincrew resourcing as part of this study.

Proposed Revision cannot deliver contracted services

The factors listed above mean that ASR cannot produce a timetable which complies with its Track Access Contract or Service Level Commitment with Transport Scotland. As services need to be re-routed and stopping patterns changed and journey times extended, worsening the Journey Time Metric¹, especially when there is a West Highland Service running (as it has to) via Anniesland, the Helensburgh service has to revert to running via Yoker.

ASR's evaluation of the changes looked only at ASR services and did not include other operators, as ASR could not be sure of the effects of any TRIP/ODA changes to their SRTs and what decisions they would take in consequence.

Network Rail does not adequately consider ASR's input

In addition to carrying out its own internal evaluation of the changes, ASR sought to engage with Network Rail to assist it in trying to address issues with its Timetable Impact Study between version 1 and 2.

¹ A contractual Franchise KPI requiring ScotRail to achieve specified levels of reduction in the total average planned journey times (minutes per train mile) across all of its passenger services (and by sector) in its timetables adopted at each Principal Change Date during the Franchise term

On 25 October 2016, Network Rail asked ASR for its comments on the draft remit for the Glasgow Area and WCML North Impact Assessment. The remit proposed considering the following sections of the timetable for all services:

- AM high peak hour: trains arriving/departing Glasgow Central High Level, Glasgow Central Low Level or Glasgow Queen Street Low Level between 08:00 and 08:59
- PM high peak hour: trains arriving/departing Glasgow Central High Level, Glasgow Central Low Level or Glasgow Queen Street Low Level between 17:00 and 17:59
- Off-peak standard hour: trains arriving/departing Glasgow Central High Level, Glasgow Central Low Level or Glasgow Queen Street Low Level between 13:00 and 14:00

ASR responded by email on 25 October 2016 to say that the geographical scope appeared acceptable but that larger time periods should be used so that the study incorporated a greater selection of services. ASR suggested time bands of 0730-0930, 1300-1500 and 1630-1830 (see Annex 12).

Network Rail published the remit on 25 October 2016 with the time bands as initially proposed by Network Rail, apart from an additional hour in the off-peak (making it 1300-1500) (see Annex 13).

The Timetable Impact Study v1 was sent out by email on 30 December 2016 (see Annex 10), along with a PIF timetable, which enabled ASR to consider the proposed timetable. As stated above, this was for a lesser time period than ASR suggested.

On reviewing the data, ASR found a number of conflicts in the timetable, which were identified to Network Rail by email on 4 January 2017 (see Annex 14). These conflicts were also raised at the Timetable Planning Rules meeting in Preston on 5 January 2017, during which ASR requested that the draft timetable should be reworked / corrected.

The Network Rail study highlighted the following issues for ASR in Section 5 ("*Scale of Changes and Impact on the Timetable*") (page 8, Annex 15):

- Overall increases in journey times and decreases in turnarounds for most service groups, as a cumulative effect of SRT/TPR changes and knock-on effects;
- No major changes to the timetable south of Glasgow, except for reduction in turnarounds for Lanark services by 2 minutes;
- Tightening of working around Rutherglen East Jn, Newton West Jn, and Newbridge Jn with more moves requiring pathing time and running at minimum junction margin;
- Headway, SRT and dwell increases between Finnieston Jns and Hyndland led to breach of minimum turnarounds at Milngavie. This was resolved by swapping paths of 2Mxx and

2Fxx (westbound) and 2Cxx and 2Vxx (eastbound) to allow for Milngavie turnrounds to be increased. Consequences of this move include tightening of turnrounds at Dalmuir, Dumbarton Central, Balloch and Helensburgh Central by up to 4 minutes; as well as journey time increases for all service groups running through the area;

- Journey time increases have also led to slight changes in arrival times off the Airdrie-Bathgate line at Edinburgh, which required limited retiming and re-platforming of services – working under the assumption that Platform 12 at Edinburgh will be available for the duration of this timetable. It was also necessary to reduce dwells at Airdrie or Bathgate in some trains which had an extended dwell at both of these stations; and
- Changes to the timetable to the west of Glasgow also necessitated limited retimings on the West Highland Line. One service (1Y26, 1441 Oban-Glasgow Queen Street High Level) had to be retimed to arrive 7 minutes later at Glasgow Queen Street – otherwise end-to-end journey times remain unchanged.

The Network Rail report highlighted the same issues as ASR had identified, the key ones being the extending of journey time (meaning that attach / detach activities couldn't be carried out at Lanark and Milngavie) and that dwell times had to be reduced at Airdrie and Bathgate.

The Network Rail report also highlighted the *"tightening of workings around Rutherglen East Jn, Newton West Jn, and Newbridge Jn with more moves requiring pathing time and running at minimum junction margin"* (page 9, Annex 15). Performance modelling would have highlighted if this would have an effect on the timetable and its ability to recover, but as stated above no performance modelling was undertaken and Junction Margins were not looked at by the TRIP team.

The suggested change by Network Rail to the West Highland service arriving at 1748 (1Y26) was also not acceptable as the set needs to work the 1756 to Anniesland, which would give a one minute turnaround at Glasgow Queen Street.

In section 6 (*"Summary of Impacts"*) there is mention of turnaround times that have changed in *"Table 5 Summary of impacts – ScotRail"* (page 13, Annex 15). These turnarounds are based on using a five minute turnaround as stated in the TPR rather than allowing the eight minutes needed to allow and attach / detach.

Version 2 of the impact study was issued on 10 February 2017. As stated above, ASR had assisted Network Rail in working through the conflicts identified in version 1 of the report. The *"Scale of Changes and Impact on the Timetable"* section of the report was the same apart from the following section, which had been updated to state:

"Headway, SRT and dwell increases between Finnieston Jns and Hyndland led to breach of minimum turnarounds at Milngavie. This was resolved by swapping paths of 2Mxx and 2Fxx (westbound) and 2Cxx and 2Vxx (eastbound) to allow for Milngavie

turnarounds to be increased. Consequences of this move include tightening of turnarounds at Dalmuir, Dumbarton Central and Balloch by up to 4 minutes; re-routed 2Hxx via Singer and swapped paths of 2Hxx and 2Sxx; as well as journey time increases for all service groups running through the area" (page 9, Annex 15).

This solution works when there is not a West Highland service departing from Queen Street, but there was no such service in the study hours Network Rail had chosen. The work ASR had undertaken was for a considerably longer time especially to work through the situation. As stated above there was no solution apart from taking calls out on the stopping service via Yoker which is in contravention of our TAA and SLC. ASR assumes this situation would apply whenever a service operates to the West Highland Line even if it is not operated by ASR as we believe there is a reduction of capacity between Westerton and Dalmuir caused by the diversion of the Edinburgh to Helensburgh services via Singer.

Nonetheless, despite ASR's work in assisting Network Rail, Network Rail's own analysis of the impacts of its proposals and clear responses from ASR throughout the process, Network Rail proceeded to publish the Revision on 3 February 2017. It appears that in doing so they took no notice of the consultation provided by ASR which appears to have been wasted effort.

	Overview observations
<p>4.6.1 Where Network Rail is required to decide any matter in this Part D its objective shall be to share capacity on the Network for the safe carriage of passengers and goods in the most efficient and economical manner in the overall interest of current and prospective users and providers of railway services (“the Objective”).</p>	<p>Insufficient work has been done to demonstrate: (i) performance impact; (ii) capacity impact; (iii) ability of ASR to operate a timetable which complies with its firm contractual rights; (iv) resource impact for ASR. Therefore NR cannot demonstrate the Objective has been met or the Decision Criteria applied correctly.</p>
<p>4.6.2 In achieving the Objective, Network Rail shall apply any or all of the considerations in paragraphs (a)-(k) below (“the Considerations”) in accordance with Condition D4.6.3 below:</p>	
<p>(a) maintaining, developing and improving the capability of the Network;</p>	<p>Capacity impact not fully understood due to lack of modelling work. Use of 25th percentile data and historic timetable data is not consistent with the 2018 Timetable Planning Rules (National) or reflecting best capability of the Network.</p> <p>The changes are in large part removing capacity from the Network and preventing the Network being able to deliver Public Service Obligation mandated services (in the ASR SLC). They also introduce additional conflicts.</p> <p>By way of example, the proposal to divert the Edinburgh to Helensburgh service via Singer will create another two conflicting moves per hour at Hyndland East Jn and Westerton. Hyndland East is ASR’s busiest junction with 14 TPH in each direction in the off peak.</p>
<p>(b) that the spread of</p>	<p>Result is likely to be to reduce available capacity on a busy urban corridor – that does not reflect</p>

	services reflects demand;	demand.
(c)	maintaining and improving train service performance;	Due to the lack of any performance modelling on the impact of the rule changes NR cannot demonstrate any performance improvement, or indeed that recent performance improvements will not be lost.
(d)	that journey times are as short as reasonably possible;	Changes appear likely to increase journey times. See table attached at Appendix 6 for ASR's analysis of journey time impacts.
(e)	maintaining and improving an integrated system of transport for passengers and goods;	Lower service levels and longer journeys make it harder to provide an integrated service. The proposal will mean the removal of some calls in the North Electric network when a West Highland service operates.
(f)	the commercial interests of Network Rail (apart from the terms of any maintenance contract entered into or proposed by Network Rail) or any Timetable Participant of which Network Rail is aware;	<p>Changes may be to improve Network Rail performance payments. However, that is an impermissible motivation as it avoids contractual compensation payable by Network Rail for failing to meet its contracted requirements.</p> <p>ASR is a timetable participant and these changes may directly impact its commercial position, ridership and compliance with Franchise Agreement. By way of example:</p> <ul style="list-style-type: none"> • the proposal will increase ASR's traincrew costs as it will no longer be able to change crews at Bathgate and Airdrie. This may also require the relocation of these traincrew. • New leased units may have to be obtained to fulfil all services • The proposed changes force the Edinburgh to Helensburgh services to run via Singer, which is contrary to ASR's

Track Access Agreement with Network Rail, which provides for two Edinburgh to Helensburgh Services, one via Singer and the other via Yoker.

- The potential loss of services and/or calls and increase in journey times is likely to have a revenue impact.
- The proposal will extend journey time on most routes which will worsen the Journey Time Metric with Transport Scotland, and mean that ASR may be fined for each period that the JTM target is not met. The further from target the higher the fine. As a full day timetable has not been produced we are not able to calculate this penalty precisely.

(g) **seeking consistency with any relevant Route Utilisation Strategy;** This proposal will reduce capacity on the North Electric network as headways are being increased which is contrary to the Scotland RUS (extract Annex 16).

The RUS stated "*Demand forecasts show that there will be significant crowding on Argyle line services by 2019, even with some relief provided by additional rolling stock from the Airdrie to Bathgate cascade. Two options were considered by the RUS to address this gap. First, train lengthening, and second a peak shuttle service from Newton to Anderston, coupled with the diversion and acceleration of peak hour services from Lanark to Glasgow Central High Level. Train lengthening could not provide sufficient capacity to meet demand in the peak hour as trains are limited by the length of the platforms to six cars. Modelling showed that running three peak Lanark services faster into Glasgow Central High Level was feasible without compromising performance. One three-car unit could be saved, and used to operate*

Newton to Anderston peak shuttles in the paths that the Lanark trains currently occupy on the Argyle line.” Since the RUS was published the 2 TPH Lanark services have been moved into Glasgow Central High Level and the Whifflet services now run through the Low Level station, but this change in SRT’s and headways might remove the opportunity to run the additional Newton shuttles.

- (h) **that, as far as possible, International Paths included in the New Working Timetable at D-48 are not subsequently changed;** Unlikely to be relevant
- (i) **mitigating the effect on the environment;** The inability to attach and detach will mean that services will be lengthened which otherwise would not need to be, resulting in additional fuel cost and consumption from mileage increases
- (j) **enabling operators of trains to utilise their assets efficiently;** ASR will no longer be able to use its existing fleet to maximum efficiency. Additional leased units would be required for operation of the same services and services will no longer be able to be attached and detached.
- (k) **avoiding changes, as far as possible, to a Strategic Train Slot other than changes which are consistent with the intended purpose of the Strategic Path to which the Strategic Train Slot relates; and** Unlikely to be relevant.
- (l) **no International Freight Train Slot included in** Unlikely to be relevant

section A of an
International Freight
Capacity Notice shall be
changed.



