**Appendix 1.**

**Timeline for Networks Code Revision of Timetable Planning Rules and Engineering Access Statement Timeline of events for May 23 V4**

**Network code Part D 2.2**

**Revision of Timetable Planning Rules and Engineering Access Statement – D-64 to D-44**

**Section 2.2.2 Between D-64 and D-60, Network Rail shall consult with Timetable Participants in respect of any proposed changes to the Rules.**

**May 23 dates - Between 25/02/2022 and 25/03/2022**

Consultation has been ongoing since October 2020

*Network Rail has had lengthy discussions with operators regarding the rules on the EMP line since at least October 2020. The Anglia TPR Forum on 19/8/21 reviewed the previous work done on this line including modelling done previously by Ed Jeffery [Rail Network Capacity Consultant], timing runs by Network Rail in May 2021 followed up by signal box visits in June 2021. This modelling had been the basis for the previous proposals deferred from the May22 timetable.*

*On EA1560 new mandatory timing points/tiplocs were proposed at Third Drove Signal CA923; Manea Signal CA924 and Manea Signal M43; March South Signal MS933 and March South Signal MS934; Eastrea Signal THS1 and Eastrea Signal W6. The existing signal boxes at Stonea, Three Horse Shoes, King's Dyke were also to be mandatory. New headways were proposed in both directions to match the new timing points. This revised proposal was made in the 2023v1 rules (December 2022 Draft Rules published on 22/10/21) – headways were indicative at this stage and subject to change pending review with the results of further Railsys modelling.*

*The Anglia TPR Forum on 13/1/22 again discussed the new tiplocs, timing points also indicative headways on EMP. However, cognisant of the deferral of the ECML recast, there was an ask (by GTR, GA, FL) to defer implementation of these TPR changes until May 23 which was agreed. It was also agreed to fix parameters for further modelling with Ed Jeffery (eg which timing loads to model etc). Deferral also aligns with availability of the modelling outputs. Dec 22 final rules published on 4/2/22 (D44)*

Allowances

EA1560 Both directions: Existing [2] allowance approaching Peterborough East Jn or Ely North Jn to be split with [1] approaching March or March West Jn. A portion of the engineering allowance will therefore apply to trains to/from Whitemoor.

*Dec 22 draft rules published on 22/10/21 (D59)*

*TPR Forum on 13/1/22 discussed new tiplocs and timing points on EMP also indicative headways. Essentially it was agreed to fix the parameters for the modelling with Ed Jeffery – eg which timing loads to model. Also cognisant of ECML recast deferral it was asked (by GTR, GA, FL) to defer these TPR changes until May 23 – also aligns with availability of the modelling outputs. Dec 22 final rules published on 4/2/22 (D44)*

**Section 2.2.3 Following consultation in accordance with Condition D2.2.2, and not later than D-59, Network Rail shall provide to all Timetable Participants a draft of the revised Rules (the “Draft Rules”).**

**May 23 dates – 01/04/2022**

Network rail published Timetable planning rules on 01/04/2022 but continue consultation and discussions as per timeline below.

*Next TPR Forum was on 23/3/22 ahead of publication of the May 23 draft rules on 1/4/22 (D59). Modelling results were shared on Tuesday 22/3/22 ahead of the forum with the caveat that data had not yet been QA’d. I did some quick analysis of selected passenger and freight SRTs which was all that was possible in the limited time available. [The modelling results were the final output from Ed Jeffery – I understand that Adrian McGarry had told Ed that a formal document with the usual cover pages, executive summary etc was not necessary, hence just an Excel spreadsheet of results. Presumably this was quicker/cheaper].*

*A subsequent TPR Workshop was held on 6/4/22 where passenger SRTs were agreed. I also went through various changes in Version 3 including margins at March. GBRf represented freight operators although FL did not attend – at that time it was hoped to put in another meeting before the end of April to discuss / agree freight SRTs and go through any issues FOCs had with the TPRs (March margins for example) ahead of TPR Responses (D54). That meeting didn’t happen largely because we never had any alternative freight SRTs to discuss.*

**Section 2.2.4 Following distribution of the Draft Rules and by D-54 Timetable Participants may make representations to Network Rail in respect of any changes they propose or objections they may have to the Draft Rules provided to them in accordance with Condition D2.2.3.**

**May dates between 01/04/2022 and 06/05/2022**

*TPR Responses were received by 6/5/22 (D54)*

**Section 2.2.5** **Following D-54 and by D-44, Network Rail shall consider the representations and objections made to it by Timetable Participants pursuant to Condition D2.2.4 and any changes to International Freight Train Slots reflected in the applicable International Freight Capacity Notice and may amend the Draft Rules. Not later than D-44, Network Rail shall issue the final revised Rules to all Timetable Participants.**

**May dates between 06/05/2022 and 15/07/2022**

*Between D54 and D44 we have reviewed the representations and objections received in TPR Responses. A TPR Forum was held on 11/5/22 where we engage with operators and discuss their TPR Responses. It was noted that passenger SRTs had largely been agreed, and the next steps were to focus on freight.*

*Unfortunately, FL did not attend this forum*

*March margins and adjustments were discussed but nothing specific regarding the margins themselves raised.*

*A further TPR Forum was held on 27/6/22*

*EMP SRTS and Headways discussed notes from forum state*

*Capacity Analysis QA report came back. One of the issues highlighted was that braking rates are being updated with more realistic values. Several headway values proposed by Ed Jeffrey failed Q&A. However, we'd already discussed and agreed passenger SRTs they are happy with headways we've proposed in version 3.* ***TPRs are fine****.*

*Following QA report, 1 margin at March West Junction passenger to March, followed by freight pass from Whitemoor needs to be increased. Technical margin is 3’13”. Margin is suggested should be 3.5. JB queried the increase but he said he can live with it.*

*CM we'd like an explanation of why the freight margins are higher than the passenger margins - Class 4 freight rolling along at 60 mph needs more time than a than a unit at 60 mph. Suggested this was possibly due to the length of the train?*

*The QA didn't come up with any issues with the adjustments, but I think we've said previously that we needed to check that we're not putting too much time in a particular section now we have extra timing points.*

*Following operator responses and Network rail considered and the representations from operators and made changes to draft rules as below.*

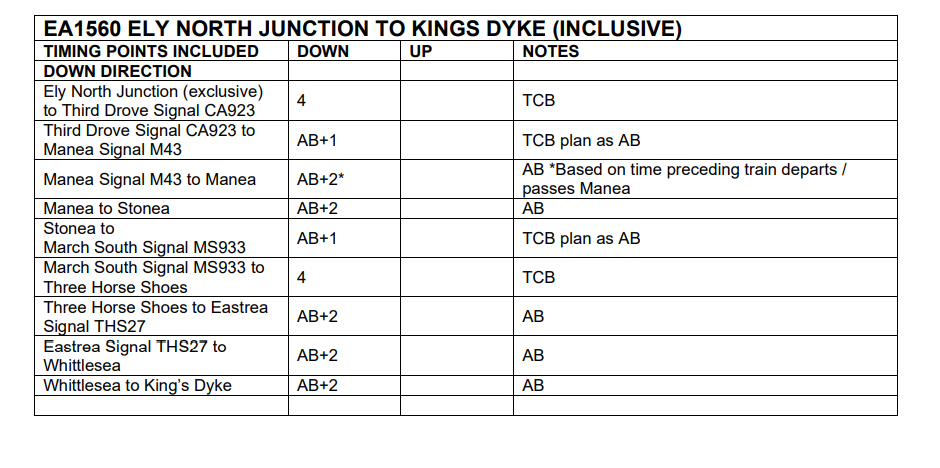
*• March – 7 new margins & 6 new SRT adjustments – proposed in 2023v3.0; wording changes in 2023v4.0 applicable to passing trains*

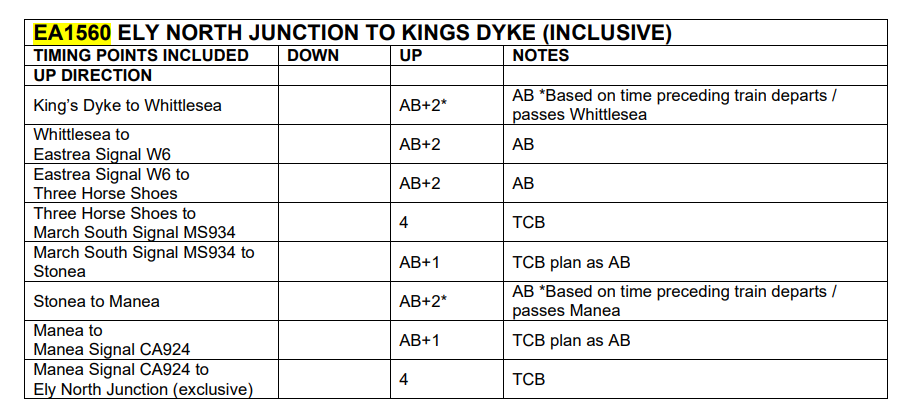
*• March West Jn – 5 new margins; amendments to adjustments - proposed in 2023v3.0; wording changes in 2023v4.0 applicable to passing trains*

*• Ely West Jn – new lower margin if first train is passenger – proposed 2023v4.0*

***V4 of Timetable planning rules published on 15/07/2022***

***Appendix 2 V4 5.2 of TT planning rules EA1560 Headways***





***Appendix 3 Extract from TPR forum with Freightliner in attendance confirming TPR’s are fine.***

| **Anglia TPR Forum – 2023 Version 4.0 TPRs (May 2023 Final Rules)** | | |
| --- | --- | --- |
| Date  Time  Venue  Attendees | Monday 27 June 2022  13:30 – 16:00  Meeting held in person and via Teams.  The Hub, Colchester  (AS) Andrew Smith – Network Rail  (MM) Matthew McCready – Network Rail  (AM) Adrian McGarry – Network Rail  (CM) Chris Matthews - Freightliner  (PLn) Peter Lane – GTR  (JB) Jason Bird – GBRf  (DG) Dan Grainger – GBRf  (MW) Mark Walker – ARL  (SY) Shane Young – GA  (PLw) Patrick Lawless – Cross Country  (KH) Kevin Hughes – EMR  (SH) Shaun Hurst – MTR  (SM) Steve Marshall – C2C |  |

|  | Item | Minutes | Actions |
| --- | --- | --- | --- |
| 2 | EMP SRTs and Headways | AM – gave an update. Re freight SRT's both AM and JB are trying frantically chasing to get information about the bridges and when the restrictions are going to be removed, there was a flurry of emails last week. Should have base timetable done this week fingers crossed we'll be in a reasonably good position to do that.  Capacity Analysis QA report came back. One of the issues highlighted was that braking rates are being updated with more realistic values. Several headway values proposed by Ed Jeffrey failed Q&A. However, we'd already discussed and agreed passenger SRTs they are happy with headways we've proposed in version 3. TPRs are fine.  SY notes that Julian Starkey was looking at GA schedules for May 23, it didn't feel like we were getting as fast as speed up as perhaps I was expecting | SY, PLn asked for passenger assumptions to be shared.  AS to contact Whittlesea box about proposals & reconfirm current operations |

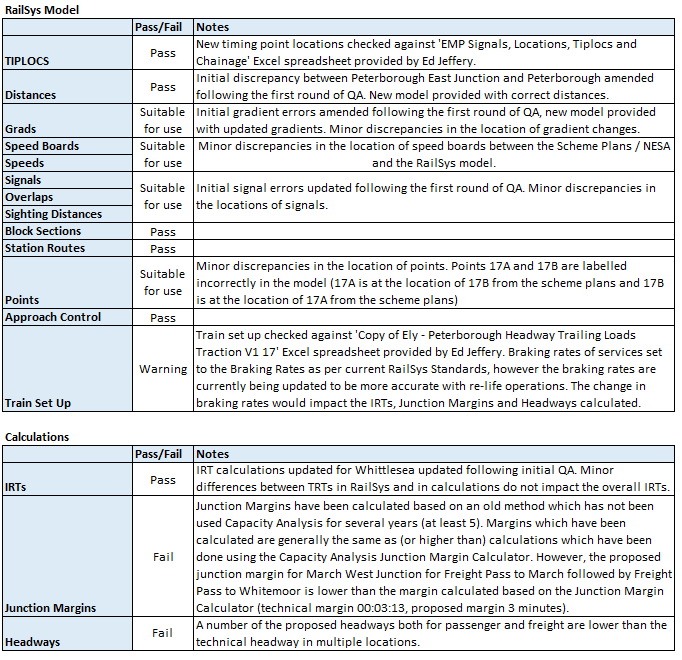
**Appendix 4 Quality assurance outputs**

**From:** Nicola Patrick  
**Sent:** 23 June 2022 09:40  
**To:** [redacted]  
**Subject:** Peterborough - Ely TPRs QA

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Hello All,

The QA of the Peterborough – Ely RailSys model and TPR calculations has been completed, and a summary table of the findings has been included below:



The RailSys model has been deemed ‘Suitable for use’ for the purpose of calculating TPR values, and the train set-up has a ‘Warning’ regarding the braking rates used. Whilst the braking rates that have been used are correct to the current RailSys Standards, these are currently in the process of being updated to reflect re-life braking rates. A change in the braking rates would be likely to impact the values of the IRTs, Junction Margins and Headways that have been calculated.

* Two areas of the calculations have failed assurance but have been superseded by the proposed TPR changes in v0.3 of the 2023 which are suitable. The Junction Margins have been calculated using an old methodology and when compared to the current methodology this has resulted in slightly different values. Most of the Junction Margins calculated have resulted in either the same, or a higher value than the ones which have been proposed, however there is one junction margin where the technical junction margin is higher than the proposed junction margin (March West Junction – Freight Pass to March followed by Freight Pass to Whitemoor). The technical margin which has been calculated using the Junction Margin Calculator is 00:03:13, however the proposal is 3 minutes. Due to the adjustment times that have been proposed in the 2023 TPRs V3 for freight services at March West Junction to/from Whitemoor, Capacity Analysis is comfortable with the Junction Margin values in the 2023 TPRs V3 at March West Junction.
* The Headways that have been calculated have failed due to the proposed values being lower than the technical headway for multiple locations between Peterborough and Ely for both passenger and freight services. However, as the TPR values that have been put forward in the 2023 TPRs V3 exceed the technical headway, Capacity Analysis is comfortable with the values included in the 2023 TPRs V3.

**Appendix 5 TPR Guiding principles Method for Junction margins**

**1.6 Junction Margins**

**1.6.1 The values listed in Section 5.3 of the TPR are Junction Margins and Station Planning Rules. This**

**section covers calculating margins for both conventional and European Train Control System**

**signalling.**

**1.6.2 A Junction Margin is the minimum permissible time interval between two trains that are performing**

**conflicting moves at a timing point, such that the second train can meet its SRT. This is expressed**

**in multiples of half minutes derived from the technical value expressed in seconds.**

**1.6.3 Where necessary and appropriate, differential junction margins shall be created for different**

**combinations of:**

**• Train type (including weight, length and speed)**

**• Stopping or passing movements**

**• Diverging or converging movements**

**For example, a train accelerating from rest across a junction will require a greater margin to avoid**

**impact on the second train, than a train crossing the same junction at line speed. The stopping**

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**pattern of both trains must also be taken into account so that acceleration or deceleration relative to**

**line speed is taken into account.**

**1.6.4 The calculation of a junction margin consists of a number of components:**

**1) Time taken between the front of the first train passing the timing point and its rear clearing the**

**relevant track circuit or axle counter**

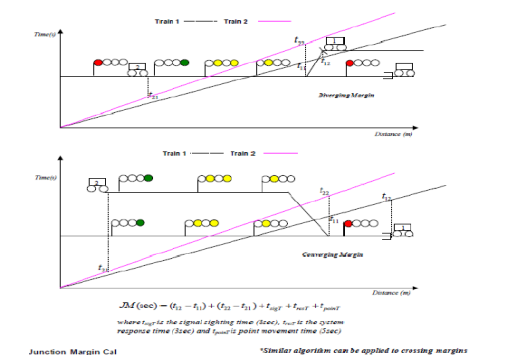
**2) Time taken for the signaller or Automatic Route Setting to reset the route and the signals to clear**

**or updated Movement Authority issued for the second train**

**3) Time taken between the second train sighting the relevant signal, such that it can meet its SRTs,**

**or from point before ETCS indication to reduce speed due to the first train and its front passing**

**the timing point**



**1.6.5 A basic junction margin is the sum of 1, 2 and 3 rounded to the next half-minute above to form the**

**planning margin.**

**1.6.6 If this does not provide a sufficient performance buffer, performance uplift will be added. This will**

**be an agreed uplift to the sum of the 1 and 3, before adding 2 (this is fixed) and finally rounding to**

**the next half-minute above or below. For example, train 1 takes 73 seconds to clear the relevant**

**track circuit after leaving the timing point (1). The signaller takes 9 seconds to reset the route for**

**train 2 across the junction (2). In order for train 2 to meet its SRTs, the train takes 62 seconds to**

**reach the timing point for the junction (3). Ergo, the margin is (73 + 9 + 62) seconds = 144 seconds,**

**+ 6 seconds uplift to round up to 150 seconds, with any additional uplift agreed as appropriate.**

**1.6.7 Network Rail will seek to model most combinations of stopping and non-stopping trains for**

**passenger and freight services as agreed with stakeholders**