

David Robertson
Head of Track Access
Office of Rail Regulation
One Kemble Street
London, WC2B 4AN

PO Box 4323
Birmingham
B2 4JB

1st May 2012

Dear David,

**Re: London and Birmingham Railway Limited 30th Supplemental Agreement:
Access Rights on the West Coast Main Line**

I am writing in response to your letter dated 15th December 2011 in respect of this application in which you advised that the ORR was minded to approve the application subject to the satisfactory resolution of 5 outstanding issues.

I believe we are now in a position to confirm that those issues have been resolved and this letter sets out the detail of their resolution and provides an update on recent scheme progress.

Item (a)

'confirmation of acceptable performance characteristics of the modified units;

Following clarification of your requirements via e-mail in late January 2012 we have carried out further 110 mph testing of a 350/1 4 car unit on April 1st and April 22nd solely to check the actual sectional running times, srt's) against the modelled srt's proposed for 4 car operation.

It should be noted that the srt modelling exercise undertaken by Siemens highlighted that 4 car operation at 110 mph was the worst case in respect of running times and that 8 car or 12 car formations at 110 mph would achieve improved running times due to the impact of front aerodynamics. Our testing results are therefore worst case.

The tests involved 2 round trips between Nuneaton, Rugby and Euston on each Sunday using the fast lines via Weedon. Network Rail were fully involved in the testing and provided timing staff to validate the stopwatch timings taken by our staff.

A summary of the results of each days testing is included as Appendix A. As we might have expected none of the individual runs was 'clean' from end to end in respect of running on green aspects but sufficient data was gathered on individual runs in respect of individual sections such that every section of the route was correctly timed.

The conclusion from the testing, supported in writing by Network Rail is that the modelled sectional running times proposed for 110 mph are robust in each direction between Euston and Rugby. The conclusion for the section between Rugby and

Attleborough Junction, just south of Nuneaton, is that the actual running time is 1 minute slower than the modelled running time in the down direction only.

We believe this is caused by 2 factors;

1. The distance from Rugby platform 2 to the 40 mph turnout to the Down Fast has not been correctly modelled.
2. The impact of the neutral section at High Oaks just north Of Rugby is greater than anticipated due to lower approach speed as a result of 1. above.

The testing has also highlighted a particular characteristic of the Class 350 fleet which hitherto has not been in full focus. On exiting a neutral section the train control software can take up to 15 seconds to restore power from the power supply circuits. Rectifying this will help to mitigate the problem at High Oaks but also provide further performance resilience for Euston – Rugby where both we and Network Rail believe the proposed timings are robust.

In the meantime we have agreed with Network Rail that in respect of the timetable development process for December 2012 that an extra minute should be added to the proposed 110 mph sectional running times for Rugby to Attleborough Junction in the down direction and that the pathing implications of this with the West Coast Train operator be resolved on a train by train basis.

We have noted that many of the down West Coast services have a minute pathing time inserted in the Tamworth area for no apparent reason and relocation of this minute to south of Attleborough Junction appears to provide a timetable solution, (subject to the agreement of the operator).

The proposed service in the up direction between Nuneaton and Rugby does not rely on 110 mph operation.

It should also be noted that the sectional running time validation testing has been undertaken with an assumption that all the hourly off-peak up direction Crewe – Euston services can ultimately operate via the Weedon route and not the Northampton route as originally proposed. The change in assumption has arisen from further work being done in conjunction with Network Rail as part of the timetable development process which has identified an earlier standard hour path from Crewe to Euston at xx02 instead of xx33 which appears to work south of Rugby without infringing the West Coast operator's access rights. We continue to develop this preferred routing option with Network Rail for the December 2012 timetable change with the intention that it should be reflected in the formal timetable offer on 8th June 2012.

The benefits are significant in terms of improved journey times to London from Rugby and station to the north, improved capacity on the Northampton loop for freight operators and much improved connectional opportunities at Rugby for Trent Valley stations to Northampton.

The aspiration to operate the up direction services was referred to in the original submission in section 4.1 and the Supplemental Agreement was drafted in respect of these particular train slots to be routed 'via Northampton or Weedon' to take account of

this eventuality. The latest drafting of the Supplemental now reflects the likelihood that the up path via Weedon will be adopted.

Item (b)

'the outstanding performance and timetable planning rules issues being resolved'

Performance modelling of the proposed timetable was undertaken by Railsys under the direction of Network Rail in September 2011. This exercise identified that the two London Midland trains which were assumed to infringe timetable planning rules at Ledburn Junction, (1716 and 1816 ex Euston) had only minimal impact on the following Euston-Manchester Pendolino services by the time they reached Rugby.

We had also identified that the current restriction in the Timetable Planning Rules of a maximum 12 tph would also be breached by this proposal. However, on investigation it became apparent that this restriction had already been breached in the down direction in the evening peak as a result of other operator's changes. Network Rail has advised that they propose to withdraw the 12 tph restriction from the TPR as not being fit for purpose but that decision has not yet been made on what, if anything, should replace it.

The performance modelling exercise highlighted a risk that the up Crewe-Euston service which was proposed to operate via the Northampton loop may present a performance risk on presentation at Hanslope Junction. Our view is that this risk has now been mitigated by retiming the up Crewe-Euston service via the Weedon route utilising a path which is more performance robust.

Network Rail has, however, advised that it is seeking to undertake further performance modelling work in order to validate the assumptions in respect of the amended up direction Crewe-Euston path and other consequential changes. We do not expect this further performance modelling work to result in any deterioration of the impact on other services, quite the reverse, but we do accept Network Rail's rationale for seeking to undertake it.

We do have a concern, however, that since Network Rail advised us of their intention to undertake further performance modelling in early March of this year it has proven difficult for them to resource the workload and as yet we have no confirmation of a start date. However, we have been advised by Network Rail that the performance modelling will be completed before a formal offer is made on 8th June 2012.

Item (c)

'demonstration that the new rights can be accommodated alongside the existing rights of other operators'

A great deal of work has been undertaken with freight and passenger business colleagues since December 2011 to resolve outstanding concerns. The position with freight colleagues is that there are now no outstanding issues and Network Rail timetable planners have confirmed that in respect of the December 2012 timetable there are no outstanding freight pathing issues.

Our Form 22A submission (section 4.3) highlighted six West Coast Trains services which as a result of our proposals would be flexed beyond the contractual limitation on maximum journey times under the terms of the WCTL TAC which expired on 1st April. We have confirmed with Network Rail that in comparison with the rights for the West Coast Train operator to apply from December 2013 these potential flexing issues no longer apply.

Network Rail has advised, however, that in respect of the December 2012 timetable there are, at present only two unresolved issues with proposed West Coast trains:

1. LM,s retimed 1U26 (1002 SX ex Crewe) causes a flex outside of West Coast's flexing rights for 1A25 on Fridays only due to the existence of 1A76 which is an additional FO train.
2. LM's 1U34 (1402 SX ex Crewe) causes a flex of a West Coast ECS working outside West Coast flexing rights.

Neither of these issues appears to be material or insuperable and we have committed to work with Network Rail and the incumbent operator to resolve them prior to the Network Rail offer date on June 8th.

Item (d)

'the rights having the minimal level of specification before December 2013 and being expressed as quantum only after that date'

We accept this position and the logic that you have laid out in your letter dated 15th December 2011. The draft 30th Supplemental Agreement has been amended to reflect this position and the drafting has been reviewed and agreed by Network Rail.

The changes which we have made are corrections to the quantum of services in Service Group EJ02 in order to reflect the latest timetable draft and an amendment to the routing of up direction Trent Valley services in Service Group EJ05 to reflect our current assumption that these will be routed via Weedon not Northampton.

A clean and delta view copy of the draft 30th Supplemental is attached for comparison.

Item (e)

'The rights being contractually dependent on their being operated by rolling stock capable of 110 mph'

Since the original 110 mph testing of a 4 car unit in signal protected zone conditions in November 2011 and the 110 mph 12 car pan tests carried out in December 2011 we have run two further testing days of a 4 car at 110 mph on West Coast Main South infrastructure over which we propose to operate the service. The testing which was undertaken to check the modelled sectional running times replicated the calling pattern of the services we propose to operate at 110 mph. The train has in all cases achieved and maintained 110 mph and in the latest tests met the modelled sectional running times between Euston and Rugby in both directions.

The means by which the 350/1 rolling stock speed is increased is by a software change to the traction package. The software change has been regression tested and cleared through the Engineering Change process as part of our Safety Management System. It was also cleared by Network Rail following the EMC 'footprint' testing in 'signal protected zone' conditions in late 2011.

The only other modification to the train required to ensure robust 110 mph modification is a change to the shorting ring design within the traction motors as a result of the rotational speed increasing from 4,500 to 5,000 rpm. This modification has been tested and Engineering Change approved and is now underway on the 350/1 fleet with a target completion date of mid September 2012.

The only other modification which may be required is a compatibility issue resulting from the 12 car pantograph testing in November 2011 which saw some high peak contact forces between pantograph head and contact wire generally associated with the entrance to neutral sections.

Further testing is planned for May and June of this year to measure the pantograph/contact wire interface with both a modified Brecknell Willis pantograph and a new pantograph in order to improve the current collection and contact forces particularly for the trailing pantograph in 12 car formations.

The Class 350/1 fleet will be fitted with either the modified Brecknell Willis or the new European pantograph following testing and the acceptance criteria have been agreed and documented with Network Rail.

Both pantographs have exhibited significantly improved performance compared to the existing Brecknell Willis pantograph in simulations undertaken with the assistance of Network Rail. This is not considered a material risk to service operation from December 2012 either by Network Rail or London Midland and we expect to be able to achieve compatibility certification for 110 mph running in up to 12 car 350/1 formations before December 2012. The train plan from December 2012, however, does not rely on 12 formations and is based entirely on 4 car operation in the off-peak.

Current Scheme Status

The Deed of Amendment to London Midland's Franchise Agreement reflecting the HLOS component of the 110 mph proposals for both the December 2012 off-peak and May /December 2014 peak hour services was signed on 28th February 2012. The obligations contained within the Deed are subject to gaining and maintaining the relevant access rights.

On the same day the Manufacture and Supply Agreement (LM, Angel and Siemens), Train Service Agreement (LM and Siemens) and Leases, (LM and Angel), were signed in respect of a new build of 20 Class 350 units to be delivered between Autumn 2013 and Summer 2014. These comprise 10 sets for the proposed Manchester-Glasgow service, (designated 350/4) procured on behalf of TPE which will be delivered first and 10 sets for London Midland, (designated 350/3). All 20 sets will have 110 mph capability and for London Midland 7 of the 10 sets will be used to resource the additional and accelerated peak services proposed for Euston and the remaining 3 sets will be used to

resource the proposed increase in frequency of services to Redditch from December 2014 and the extension of electric services to Bromsgrove from May 2015. The Redditch and Bromsgrove schemes are both CP4 regulated outputs.

The improvement in weekday peak capacity into and out of Euston from May/December 2014, (both peaks combined) is 4,470 seats which translates to 6,540 spaces expressed in terms of DfT capacity.

Yours sincerely,

A. M. Haigh
Programme Director

Validation of 110 mph modelled Sectional Running Times
Results from 1st April 2012 350108 4car

Appendix A

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
1.5	1.5	1 min 40 sec	1.5	1.5	
7.0	8.5	7 min 04 sec	7.0	8.5	
7.5	16.0	7 min 21 sec	7.5	16.0	
4.5	20.5	4 min 42 sec	4.5	20.5	
2.5	23.0	2 min 47 sec	3.0	23.5	
6.0	29.0	5 min 29 sec	5.5	29.0	
1.0	30.0			29.0	
3.0	33.0	4 min 13 sec	4.0	33.0	50 mph TSR for 54 chains
3.5	36.5	3 min 48 sec	4.0	37.0	
4.5	41.0	4 min 38 sec	4.5	41.5	60 mph TSR for 30 chains Watford S Jn
1.0	42.0			41.5	
3.0	45.0	4 min 4 sec	4.0	45.5	Same 60 mph TSR for 30 chains as above
2.0	47.0	1 min 50 sec	2.0	47.5	
1.5	48.5	1 min 47 sec	2.0	49.5	
3.0	51.5	3 min 9 sec	3.0	52.5	
0.5	52.0	0 min 37 sec	0.5	53.0	
3.0	55.0	2 min 40 sec	2.5	55.5	
	55.0	55 min 49 secs		55.5	

TSR,s on the day cost 2 min 25 secs compared to Engineering allowance of 2 minutes so end to end appears to be exactly as modelled.

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
3.0	3.0	2 min 20 sec	2.5	2.5	
0.5	3.5	0 min 35 sec	0.5	3.0	
3.0	6.5	3 min 25 sec	3.5	6.5	
1.5	8.0	1 min 46 sec	2.0	8.5	
2.0	10.0	1 min 54 sec	2.0	10.5	
3.5	13.5	3 min 34 sec	3.5	14.0	80 mph TSR at Watford Jn (from 22/4 run)
4.0	17.5	4 min 43 sec	4.5	18.5	80 mph TSR at Watford Jn (from 22/4 run)
3.5	21.0	3 min 40 sec	3.5	22.0	90 mph TSR at Berkhamstead
3.0	24.0	3 min 14 sec	3.0	25.0	
5.5	29.5	5 min 24 sec	5.5	30.5	
1.0	30.5			30.5	
3.0	33.5	3 min 0 sec	3.0	33.5	
4.5	38.0	5 min 10 sec	5.0	38.5	Slower than Plat 6 which would be used in service
7.0	45.0	7 min 9 sec	7.5	46.0	rounding srt up due to accumulated seconds
1.0	46.0			46.0	
7.5	53.5	7 min 7 sec	7.0	53.0	
2.0	55.5	2 min 5 sec	2.0	55.0	
	55.5	55 min 06 sec		55.0	

Harrow to Bourne End times added from 22/4 as pts failure on 1/4. Still 1 min TSR unused but also MK plat 5 appears to cost extra 1 min compared to plat 6
Therefore as TSR and plat impact cancel each other out so actual appears to 30 secs better than modelled

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
1.0	1	1 min 23 sec	1.5	1.5	Next run 22/4 to use Plat 1 to shorter turnout to DF
3.0	4.0	3 min 14 sec	3.0	4.5	
4.0	8.0	4 min 20 sec	4.5	9.0	Aggregate tie to this point 8 min 57 sec
2.5	10.5	3 min 04 sec	3.0	12.0	This route not used in tt service
	10.5	12 min 01 sec		12.0	

Further testing was done on 22/4 using plat 2

Results from 22nd April 2012 350108 4car

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
1.5	1.5	2 min 14 sec	2.0	2.0	Driver did running brake test + single yellows ex Rugby
7.0	8.5	7 min 35 sec	7.5	9.5	
7.5	16.0	7 min 13 sec	7.0	16.5	
4.5	20.5	5 min 52 sec	6.0	22.5	Routed into plat 5 and crawled in - would be PI 4
2.5	23.0	3 min 09 sec	3.0	25.5	
6.0	29.0	5 min 44 sec	6.0	31.5	srt rounding to reflect accumulated seconds
1.0	30.0			31.5	
3.0	33.0	3 min 05 sec	3.0	34.5	
3.5	36.5	3 min 25 sec	3.5	38.0	
4.5	41.0	4 min 39 sec	4.5	42.5	60 mph TSR for 30 chains Watford S Jn
1.0	42.0			42.5	
3.0	45.0	4 min 08 sec	4.5	47.0	Same 60 mph TSR for 30 chains as above
2.0	47.0	1 min 50 sec	2.0	49.0	
1.5	48.5	1 min 41 sec	1.5	50.5	
3.0	51.5	4 min 10 sec	4.0	54.5	50 mph TSR at Queens Park + 30 mph ESR Primrose Hill
0.5	52.0	0 min 58 sec	1.0	55.5	Same cause as above
3.0	55.0	2 min 59 sec	3.0	58.5	
	55.0	58 min 42 sec		58.5	

TSR,s and the ESR on the day cost 3 min 14 secs compared to Engineering allowance of 2 minutes plus the routing via Plat 5 at MK costs 1 min 32 sec compared to run on 1/4. The single yellows ex Rugby cost 1 min 05 secs compared to clear run on 1/4 so aggregate impact is plus 3 min 51 sec excluding eng allowance giving a net actual of 55 mins

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
3.0	3.0	2 min 24 sec	2.5	2.5	
0.5	3.5	0 min 59 sec	1.0	3.5	
3.0	6.5	3 min 10 sec	3.0	6.5	
1.5	8.0	1 min 44 sec	1.5	8.0	
2.0	10.0	1 min 54 sec	2.0	10.0	
3.5	13.5	3 min 34 sec	3.5	13.5	80 mph TSR at Watford Jn
4.0	17.5	4 min 43 sec	5.0	18.5	80 mph TSR at Watford Jn
3.5	21.0	3 min 39 sec	3.5	22.0	90 mph TSR at Berkhamstead
3.0	24.0	3 min 10 sec	3.0	25.0	
5.5	29.5	5 min 29 sec	5.5	30.5	
1.0	30.5			30.5	
3.0	33.5	2 min 27 sec	2.5	33.0	
4.5	38.0	4 min 53 sec	5.0	38.0	
7.0	45.0	7 min 11 sec	7.0	45.0	
1.0	46.0			45.0	
7.5	53.5	7 min 31 sec	7.5	52.5	
2.0	55.5	1 min 28 secs	1.5	54.0	
	55.5	54 min 16 sec		54.0	

The TSR's at Watford appear to have cost about a minute in running but the 1 minute allowance at Weedon appears to be have been unused. This suggests that the time assuming 2 minutes actual TSR impact would be 55 mins vs 55.5 modelled or half min better.

Modelled Assumption	Aggregate	Actual Time	Actual Time Rounded	Aggregate	Comments
1.0	1	1 min 24 sec	1.5	1.5	Next run 22/4 to use Plat 1 to shorter turnout to DF
3.0	4.0	3 min 23 sec	3.5	5.0	
4.0	8.0	4 min 21 sec	4.0	9.0	To reflect accumulated seconds (9.08 aggregate)
2.5	10.5	2 min 10 sec	2.0	11.0	This route not used in tt service
	10.5	11 min 18 secs		11.0	

Investigation into vcb reset after neutral just north of Rugby under way. No perceived benefit in using Rugby Plat 1 and closer turnout as would tend not to use in service