

Paul Carter  
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Case Ref PRM-IOP-0277

EIN UK/51/2019/0020

17<sup>th</sup> December 2019

**Contact: Paul Frary**

HM Inspector of Railways, Senior Engineer  
25 Cabot Square, London E14 4QZ

Dear Mr Carter

**THE RAILWAYS (INTEROPERABILITY) REGULATIONS 2011, AS AMENDED  
AUTHORISATION OF UPGRADE OF CLASS 710/1 ELECTRIC MULTIPLE UNITS  
710101-710130 FOR OPERATION AS AC ONLY FOUR-CAR MULTIPLE UNIT  
OPERATION**

I refer to your application for authorisation, received on 11<sup>th</sup> December 2019. Following review of your application, I can confirm that ORR grants authorisation under regulation 4(1)(a) of the Railways (Interoperability) Regulations 2011, as amended. This authorisation is for the placing in service as multiple units of the upgraded Class 710/1 Electric Multiple Units numbered 710101-710130 inclusive, composed of individual vehicles numbered in accordance with Appendix 1. The vehicles have been upgraded to AC voltage Multiple Operation from Single Operation.

Document 3EER400030-4552 referred to by the declaration of verification dated 10<sup>th</sup> December 2019 and contained in your technical file, reference 3EER400027-4839\_B, concludes that there are no outstanding conditions and constraints other than the permanent constraints inherent in the Vehicle Design for the operation of CL710/1 AC only units.

Safety Assessment Report AES/1016/R03 Issue 1 30 January 2019, modified by AES/1016/L16 26 July 2019, identifies no new control measures are introduced following this upgrade, however conditions relating to single unit operation (As per EIN UK/51/2019/0015 dated 14/08/2019) equally apply to multiple unit operation.

These conditions, which must be met in respect of these hazards are:

- (1) Bombardier shall, before 11 April 2020, make engineering modifications in isolation or combination to the Arriva Rail London (Limited) fleet of Class 710 electric multiple units to reduce the risks of climbing and surfing in the inter-car area to a level which is as low as reasonably practicable (ALARP). The surfing and climbing risks are for both attended, in service trains, and unattended, not in service or stabled trains.
- (2) The operator Arriva Rail London (Limited) shall, for trains placed in use before modifications are implemented to address inter-car surfing and climbing risks, reach agreement with the manufacturer on a time-bound plan which provides details of how these risks will be effectively managed and mitigated in the interim whilst modifications are implemented. This condition applies to both trains in service and those not in service or stabled.

The upgraded rolling stock subsystem(s) authorised by this letter must be operated and maintained in accordance with Regulation 20.

You should be aware that any future modifications to the authorised subsystem may constitute a further 'renewal' or an 'upgrade' as defined in Regulation 2. If a project entity, in relation to the project, considers that the modification meets either of these definitions they may apply, in accordance with the provisions of Regulation 13, to the Department for Transport (DfT) for a decision on whether a new authorisation will be required. Should DfT decide that an authorisation is not required they must consult with ORR whether authorisation is required on safety grounds.

As the project entity you are responsible for retaining the technical file, keeping it up to date and making it available to the ORR in accordance with Regulations 18 and 19.

If you are not the owner of the authorised subsystem you shall within 60 days, in accordance with Regulation 19(3), transfer the technical file, certificate of verification and verification declaration to the owner of the subsystem and the owner shall then be regarded as the project entity. If the owner, in accordance with Regulation 19(4), disposes of his interest in the authorised subsystem, he shall within 60 days of the disposal transfer the technical file, certificate of verification and verification declaration to the person acquiring that interest and that person shall be regarded as the project entity.

Please note that under Regulation 36, the person who applied for the authorisation shall send particulars to the Registration Entity to enable the registration entity to update the information on the National Vehicle Register. This will include such further information as the registration entity may reasonably require set out in the relevant standard.

The person who applied for the authorisation to place in service may apply to the ORR for a determination of type in accordance with Commission Implementing Decision 2011/665/EC. The person who applied for the type authorisation will receive it after providing the data to the Registration Entity in accordance with Annex II of Commission Implementing Decision 2011/665/EC.

If you are the operator, may I remind you of the need to have adequate arrangements within your Safety Management System to control the risks associated with this upgraded rolling stock subsystem(s).

Yours sincerely



**Steve Fletcher**  
**Deputy Director, Engineering & Asset Management**

cc

Ian Jones	Head of Interoperability, Safety and Standards DfT
Ian Prosser	ORR Director Railway Safety
Matt Raine	ORR HM Inspector of Railways
David Galloway	Head of System Compatibility, Network Rail
National Vehicle Register	

## Appendix 1 – Class 710 Unit Configuration

<b>Unit</b>	<b>DMS1</b>	<b>PMS</b>	<b>DMS2</b>	<b>MS1</b>
710101	431101	431301	431501	431201
710102	431102	431301	431502	431202
710103	431103	431303	431503	431203
710104	431104	431304	431504	431204
710105	431105	431304	431505	431205
710106	431106	431306	431506	431206
710107	431107	431307	431507	431207
710108	431108	431308	431508	431208
710109	431109	431309	431509	431209
710110	431110	431310	431510	431210
710111	431111	431311	431511	431211
710112	431112	431312	431512	431212
710113	431113	431313	431513	431213
710114	431114	431314	431514	431214
710115	431115	431315	431515	431215
710116	431116	431316	431516	431216
710117	431117	431317	431517	431217
710118	431118	431318	431518	431218
710119	431119	431319	431519	431219
710120	431120	431320	431520	431220
710121	431121	431321	431521	431221
710122	431122	431322	431522	431222
710123	431123	431323	431523	431223
710124	431124	431324	431524	431224
710125	431125	431325	431525	431225
710126	431126	431326	431526	431226
710127	431127	431327	431527	431227
710128	431128	431328	431528	431228
710120	431129	431329	431529	431229
710130	431130	431330	431530	431230