

Aerodynamic Noise Reduction of a Pantograph by Improving the Shape of Pantograph Head and its Support

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Reduction of aerodynamic noise emitted from a pantograph head and its support is one of the important subjects for the speed-up of high speed trains from an environmental point of view. To reduce it, suitable configuration of the pantograph head with a smooth cross section profile has been investigated. As a result, it has been clarified that aerodynamic noise can be reduced by making the pantograph head have a suitable configuration which induces appropriate flow interference between the pantograph head and its support. Furthermore, it has been also clarified that the pantograph horn affects aerodynamic noise properties significantly and shape improvement around the joint area of the pantograph head and the horn is an important factor for the reduction of aerodynamic noise.