

A RE-APPRAISAL OF CURRENT INTERNAL NOISE SPECIFICATIONS FOR RAILWAY VEHICLES

Passengers riding in a railway vehicle are subject to a noise environment that is determined chiefly by the construction of the vehicle. During the design of a new vehicle it is important that acoustic factors are considered so that a satisfactory internal noise level can be achieved. This report seeks to clarify what is meant by a satisfactory internal noise environment and utilises some new work on noise levels inside British Rail vehicles.

A survey of current railway vehicle inspection noise specifications is presented and the concepts underlying these specifications are discussed. Work is described which shows that two weighted sound pressure level measurements (dBA and dBB) used in conjunction provide a good measure of subjective noise comfort in a running railway vehicle. Acceptable dBA and dBB levels have been proposed and new octave band criteria compiled for different types of stock. The new criteria limit the proportion of low frequency noise allowed in the vehicle and provide for a spectral shape that is obtainable with typical railway vehicle constructions.