

VEHICLE SUSPENSION SYSTEMS AND PASSENGER COMFORT

The memorandum establishes the comfort levels, in terms of vibration, that are expected in modern railway vehicles. The complex nature of designing to meet the conflicting demands of stability, curving and passenger comfort is discussed with particular reference to the suspension and tilt system of the Advanced Passenger Train.

Using the techniques that have been developed over the past decade, suspension design has ceased to be an empirical process and it is now possible to specify the necessary suspension parameters to ensure a satisfactory performance in the widest sense. The criteria that a design must meet are now reasonably established although more work is required to improve the accuracy of the available data. It is still necessary to build prototype vehicles since the mathematical model cannot represent the suspension completely, and to measure the differences between the theoretical specification and the engineering design.

This memorandum is a copy of a paper with the same title presented to the conference "Design for Passenger Transport" at the University of Nottingham, 7 April 1978.