

SOLID MECHANICS 3

Vibrations Laboratory

Jonty Usborne

Tutor: Dr Necip Sahinkaya

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A vehicle suspension system allows the vehicle's tyre to move vertically in response to road irregularities independently of its body, thus insulating the load from induced shock and impact forces. This results in increased comfort and less fatigue to the operator and passengers, greater protection to cargo and the vehicle body itself, and improves the manoeuvrability and handling of the vehicle. Whilst theoretical models easily outline the basic performance of a sprung vibration system, commercial spring-damper suspensions are tuned to harmonise this comfort and handling in-line with expected demands on the vehicle and likely operating conditions. This report outlines the procedure and findings from testing a modern bicycle suspension while adjusting some of these characteristics. Ultimately the performance produced behaviour closely matching idealised theory.

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The remainder of this report has been removed at the request of Dr Mike Wilson (Directory of Undergraduate Studies, Department of Mechanical Engineering, University of Bath).

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