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HANDBOOK OF VEHICLE-ROAD INTERACTION

This handbook discusses tyre-road contact forces generated by heavy vehicles, their influence on road surface and bridge response and damage, as well as ways of assessing and improving vehicles so as to minimise road damage. The book is divided into eight sections: 1. provides general background material about road wear, expenditure on roads and some historical perspectives. 2. deals with vehicle dynamics and includes chapters on road surface roughness, suspension components, measuring and simulating dynamic tyre forces and a brief introduction to the subject of "weigh-in-motion". 3. is concerned with the response of the guideway to heavy vehicle loads. 4. concentrates on the mechanisms of damage of flexible pavements, particularly permanent deformation and fatigue cracking. 5. discusses vehicle-guideway interactions. 6. discusses the design of suspensions to minimise road damage. 7. is concerned with the problem of assessing the road damaging potential of heavy vehicles for regulatory purposes. 8. presents conclusions and suggests areas needing further research. Lists of abbreviations, references and an index are provided in the appendices.

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Interaction of wagons and cargo is a separate and very important part of vehicle system dynamics. Semi-trailers have their own road suspension and oscillate while the train is in motion [10]. Liquid cargo sloshes inside a tank, changing its behaviour on straight track and in curves [11,12]. Wood or even bulk cargo can displace under the action of longitudinal impacts. Interaction of vehicle and passengers is also important, producing much research on the perception of oscillations by people [13] and modelling of human bodies in different postures [14].

3.1.2 Running Gears, Bogies and Suspension Road Users' Handbook.

This handbook is an interpretation of the law made easy to understand by using plain English. Laws change often so make sure you have the most recent handbook or obtain more information from Road Rules 2014. Both publications are available on the Roads and Maritime Services website at rms.nsw.gov.au. This handbook is also available on our website in: Arabic, Chinese, Croatian, Greek, Japanese, Korean, Serbian, Spanish, Turkish and Vietnamese.

Other Roads and Maritime publications.

- Getting your Driver Licence
- A guide to the Driving Test
- Hazard Perception Handbook
- Behaviors and trajectories of on-road vehicles and pedestrians.

Many rule-based and model-based approaches were proposed to estimate future states on time-series data, such as variants of Kalman filter (KF) applied to system dynamic models [1], auto-regressive models [2] and time-series analysis [3]. However, these approaches are not able to incorporate the coordination among highly interactive agents due to the limited model exibility. as well as interactions among dynamic entities. Assume there are totally N entities in an interactive. situation where N may vary in different trafsc scenarios. This is an all-encompassing approach that seeks to manage the interaction between road users, roads and roadsides, and travel speeds and vehicles. The Safe System approach underpins the National Road Safety Strategy 2011-2020. In addition to promoting safe road use, safe speeds and safe vehicles, the Ride Safe handbook also encourages motorcycling as a fun, economical and environmentally friendly means of transportation. It is my belief that this, and subsequent editions of the Ride Safe handbook, will play an important role in developing the skills and knowledge of future generations of rider

The Traffic Control Systems Handbook references other FHWA handbooks for more detailed information on freeway management, communications, and traffic detectors.

17. Key Words

Traffic control systems, traffic signal controllers, intelligent transportation systems, traveler information systems.

1.1 Scope and Objectives .

1-2. 1.2 Summary of Handbook Contents .

1-3. 1.3 Role and Impact of Traffic Control Systems .