High Speed Off-Road Vehicles: Suspensions, Tracks, Wheels and Dynamics

Bruce Maclaurin

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DESCRIPTION

A concise reference that provides an overview of the design of high speed off-road vehicles

*High Speed Off-Road Vehicles* is an excellent, in-depth review of vehicle performance in off-road conditions with a focus on key elements of the running gear systems of vehicles. In particular, elements such as suspension systems, wheels, tyres, and tracks are addressed in-depth. It is a well-written text that provides a pragmatic discussion of off-road vehicles from both a historical and analytical perspective. Some of the unique topics addressed in this book include link and flexible tracks, ride performance of tracked vehicles, and active and semi-active suspension systems for both armoured and unarmoured vehicles.

The book provides spreadsheet-based analytic approaches to model these topic areas giving insight into steering, handling, and overall performance of both tracked and wheeled systems. The author further extends these analyses to soft soil scenarios and thoroughly addresses rollover situations. The text also provides some insight into more advanced articulated systems.

*High Speed Off-Road Vehicles: Suspensions, Tracks, Wheels and Dynamics* provides valuable coverage of:

- Tracked and wheeled vehicles
- Suspension component design and characteristics, vehicle ride performance, link track component design and characteristics, flexible track, and testing of active suspension test vehicles
• General vehicle configurations for combat and logistic vehicles, suspension performance modelling and measurement, steering performance, and the effects of limited slip differentials on the soft soil traction and steering behavior of vehicles

Written from a very practical perspective, and based on the author's extensive experience, *High Speed Off-Road Vehicles* provides an excellent introduction to off-road vehicles and will be a helpful reference text for those practicing design and analysis of such systems.

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**ABOUT THE AUTHOR**

BRUCE MACLAURIN initially worked in the aircraft industry on structural design and analysis and then spent over 35 years on the research and design of the automotive systems of military vehicles. His main area of research is tracked and wheeled vehicle steering systems, suspensions and tracks including design, computer modelling, and performance measuring. He is now retired from the Ministry of Defence in the UK.

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