

Consultancy Project

CARAVAN STABILITY – RAISING OWNER AWARENESS



A history of caravan stability work

The Centre for Power Transmission and Motion Control has been involved in caravan stability research for nearly twenty years and is now regarded by many within the industry as the foremost independent authority on this subject.

Recent work for Bailey Caravans and The Caravan Club has enabled the design and development of a sophisticated reconfigurable test trailer which has been used extensively to investigate how caravan design affects the stability of the system.



Stability investigations

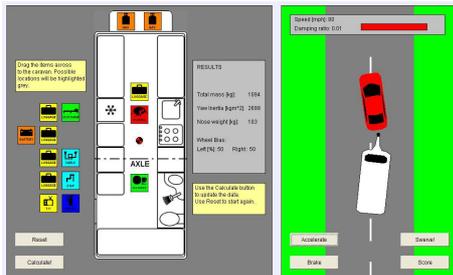
Investigations into the effect of yaw inertia have been conducted both in simulation and on the test trailer. The experimental results have highlighted the importance of how a caravan is loaded. The distribution of the belongings placed in the caravan was seen to be very important, in addition to the total weight of the goods.

Further work has been done to verify the efficacy of the AI-Ko automatic braking system, designed to aid the driver during an emergency, when oscillatory snaking might occur.

Increasing awareness

This work has given Bailey great insight into the important design factors for their caravan product range. In knowing the importance of luggage distribution, Bailey can better design their products to allow their customers to set up a safer caravan rig, leading to a greater degree of safety when towing.

Engineers in the PTMC have helped Bailey to spread the word about this important aspect – caravan loading – by designing a model caravan rig that can be used to demonstrate the principles of yaw inertia at public events.



In addition to this, a computer training ‘game’ has been developed that allows caravan users to learn about the best way in which to load their belongings, to minimise yaw inertia. This work has culminated in Bailey launching a dedicated micro-website to publicise their safety knowledge and promote their safety consciousness.

