

Centrifugal force and momentum

A vehicle is most stable when under gentle acceleration and travelling in a straight line in good conditions. When negotiating a bend or turn the natural momentum of the vehicle is to continue in a straight line. At low speed the traction that is created by the vehicles tyres allows the bend to be negotiated without loss of control. This control lessens as the speed is increased and momentum takes over. This will result in loss of control, skidding or a crash.

Stability of a vehicle can be affected by carrying of loads and/or passengers. The natural momentum of the vehicle under braking or changing direction will cause unstable loads to move, normally in the opposite direction of the vehicles movement.

When going forward the load/passengers will be pushed backwards. When reversing or braking they will be pushed forwards. Turning left they will be pushed to the right and turning right pushed to the left. This movement is greater as the speed is increased and severely affects the stability of the vehicle. Wearing of seatbelts for all passengers is vital, including the rear.