

Lane Change Testing with VBOX



VBOX Lane Change Test Software

Derived from the well known 'Moose (or Elk) Avoidance Test', ISO 3888-2 is a procedure to establish how stable a vehicle is when swerving to avoid an obstacle, and then swerving back into lane to avoid incoming traffic.

Racelogic's Lane Change Test Software is designed to easily and accurately carry out the ISO 3888-2 test using a VBOX 3i data-logger and IMU.

- High accuracy data using VBOX 3i and IMU
- Test lane change manoeuvres quickly and easily to adhere to regulations
- Set test points from a laptop or tablet PC in the vehicle
- Graphic representation to show the speeds that have been achieved to help establish test pass or fail
- Immediate display of results which is useful when conducted as a "witness" test.

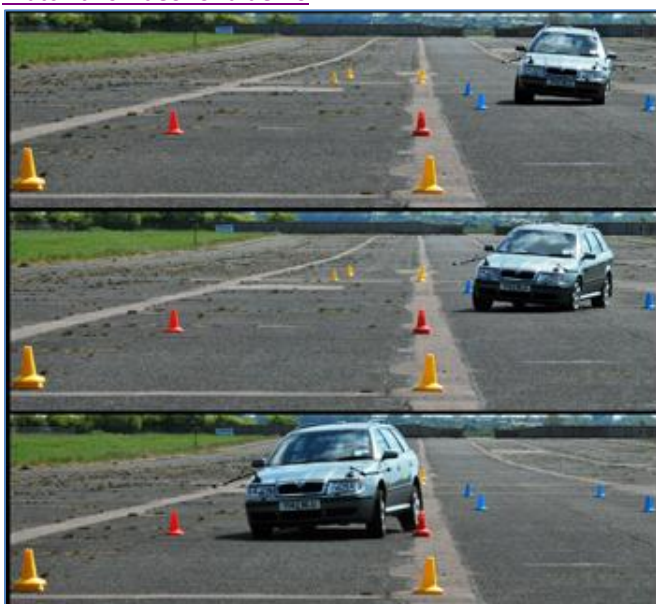
The Test

The lane change manoeuvre provides a good indication of the stability and control of a vehicle.

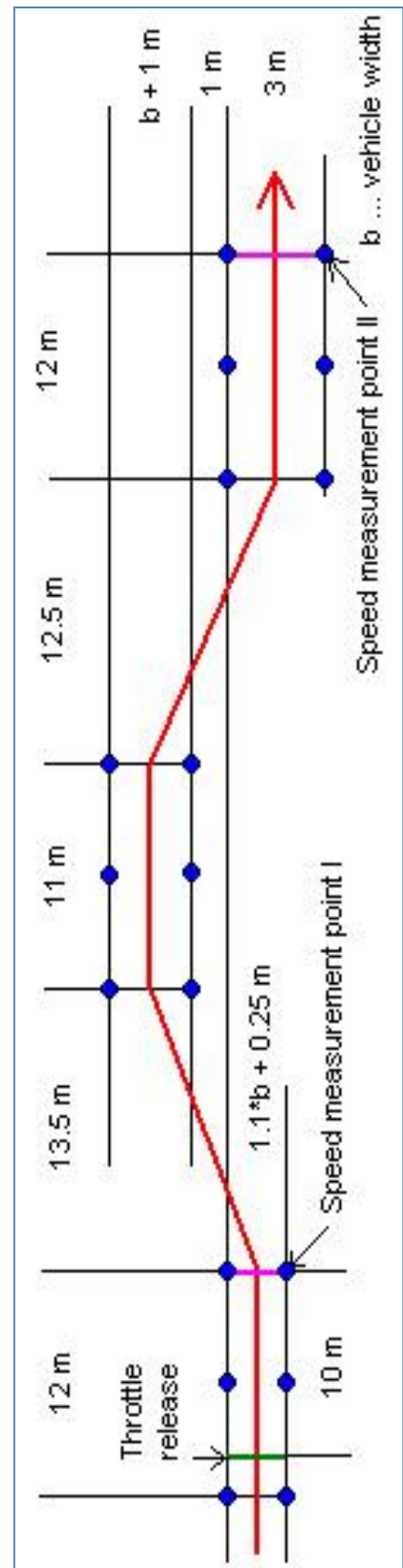
Using two lanes of cones, with widths corresponding to the width of the vehicle, it is carried out by driving through a tight first lane, before swerving hard into a second lane, and then swerving back into the original lane, as shown right and below.

It is designed to reproduce a sudden avoidance manoeuvre that can cause vehicles to lose control.

[Watch this video for a demo.](#)



Outline of Lane Change Test Procedure



Lane Change Testing with VBOX



The Software

The Lane Change Test Software allows you to set the start and finish points of the test, and will record each test manoeuvre. One button configuration allows you to configure the VBOX 3i and IMU for the test.

In the main screenshot, right, you can see that five runs of increasing speed are displayed. Speed on entrance and speed on exit, along with percentage difference and time, are recorded to establish the validity of each test.

A graph, below, also illustrates speed and yaw rate against time, whilst a map view, below right, logs the trajectory of the vehicle.

The Equipment

- **VBOX 3i 100Hz GPS data logger.**
Note: it is possible to use a VBOX 100Hz Speed Sensor in place of a VBOX 3i and output to an external data logger
- **Laptop or Racelogic Q3 Tablet PC**
- **Racelogic Lane Change Test Software**
- **Racelogic IMU (Inertial Measurement Unit),** which provides an accurate measurement of yaw rate. Note: IMU is optional, but it will help to produce accurate data if the test site is obstructed, and is required by some local test regulations.

