Introduction

We now have a more effective way to obtain results for the "Drive by Noise" test. Rather than using three light barriers every 10 metres we decided it would be better to just use one of them to start the test. Instead of the light barriers acting as markers we thought it would be better to use one to start the test then set up Report Generator to give us results over X amount of metres after the light barrier has been passed.

The original multiple light barrier method has the benefit of consistent and accurate reflector positions. However in practice it can prove difficult for the Light barrier to detect each reflector position when at speed due to vehicle body movement, particularly on vehicles like motorcycle.
This new proposed method uses the VBOX distance measurement process (this abides by a distance accuracy of 0.05% (<50cm per Km)) which is very accurate, so over the distances of this "Drive by Noise" test, the start, mid and end points will be measured to an accuracy <3cm.
This new method also has the benefit of Racelogic software being able to interpolate speed between GPS samples to ensure the correct and accurate measurement of speed at the start, mid and end points.

With a VBOX used in this way the results of the test can be displayed immediately on a computer connected to the VBOX on the Vehicle, or on a Roadside computer connected to the VBOX via a radio telemetry link.

So the setup procedure will essentially be:

1) Equip Vehicle with VBOX, and Light barrier (RLVBACS063) plus Telemetry if required.
2) Place the start and end light barriers at equal distances from the "Drive by noise" test lane.
3) Ensure the VBOX software, Report generator is set for your light barrier distances.
4) Roll past the light barrier to start the test, (to ensure triggering of the start of the test).
5) Accelerate to the desired speed.
6) At the correct sound area start point accelerate at the required rate.
7) After crossing the finish zone the VBOX Tools will end the test and will be ready for you to conduct the test in the opposite direction.
8) Repeat step 4,5 and 6.
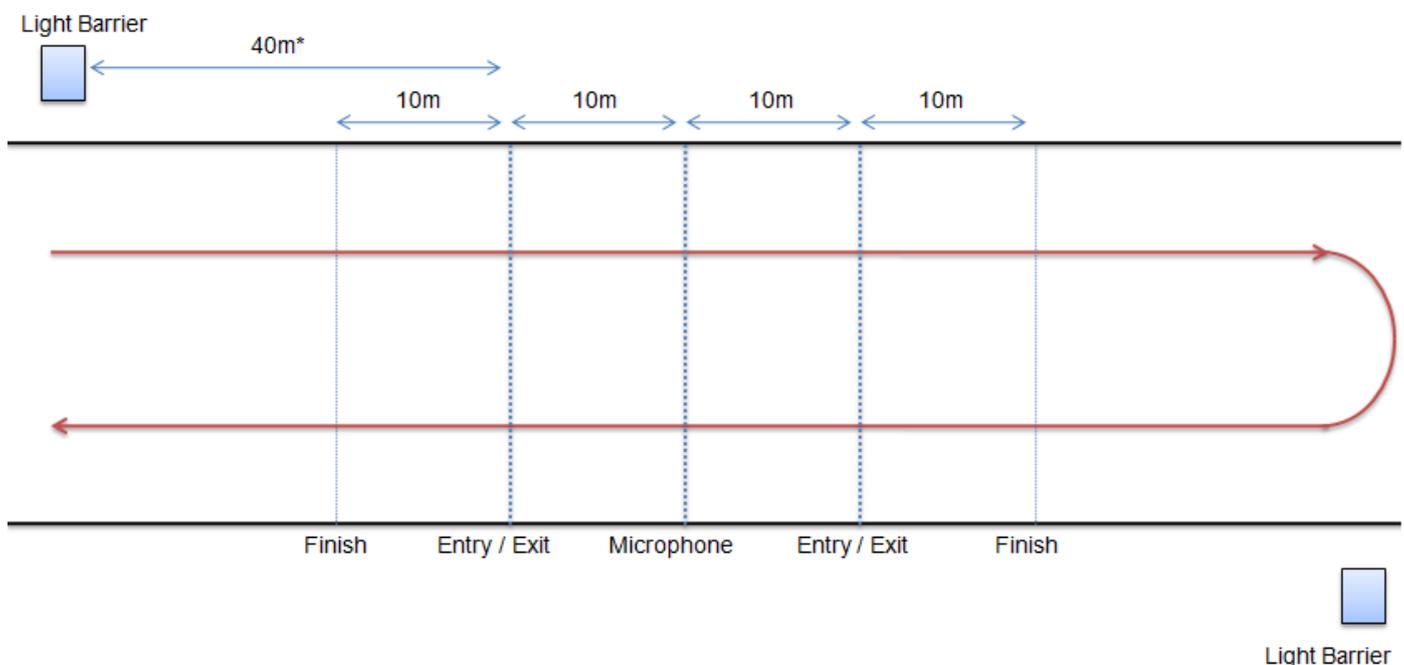
Steps for Report generator configuration:

1) Load our example "Drive by Noise" configuration file into VBOXTools Report Generator.
2) Check that the start condition is set to "Brake Trigger activated".
3) Set your three distance Line conditions
   - 1st distance should be distance from light barrier to first test line minus distance from the light barrier to the front of the vehicle.
   - 2nd distance should be 1st distance + 10M
   - 3rd distance should be 2nd distance + 10M + length of the vehicle (to capture the speed at the point that the end of the vehicle crosses the last test line)
4) Set the end condition to "Distance >=" and enter 3rd distance plus 10M in the box.

Below is an example of a result table in the Report generator screen, showing speeds at the start mid and end lines of the Drive by Noise test. It also shows the acceleration in m/s^2 from the start line to the end line.
Note that the distances reflect the placement of a light barrier 1,2 metres back from the front of a 4.86M vehicle.

Report Generator - Drive By Noise

Run num	File Date	File time	Speed(km/h)	Time	Dist(m)	Acceleration Start to End (m/s2)	Description	Graph run	
1	07/01/2007	18:26:10	55.59	2.52	38.80	6.14	Distance Line		
1	07/01/2007	18:26:10	58.12	3.15	48.80	6.14	Distance Line		
1	07/01/2007	18:26:10	61.68	4.04	63.66	1.11	Distance Line		