

The MyLaps Finish line camera

The problem

Over the years there have been some very close finishes in RC races.

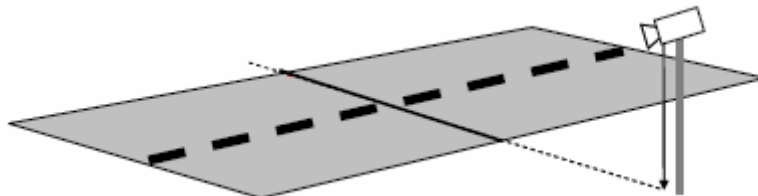
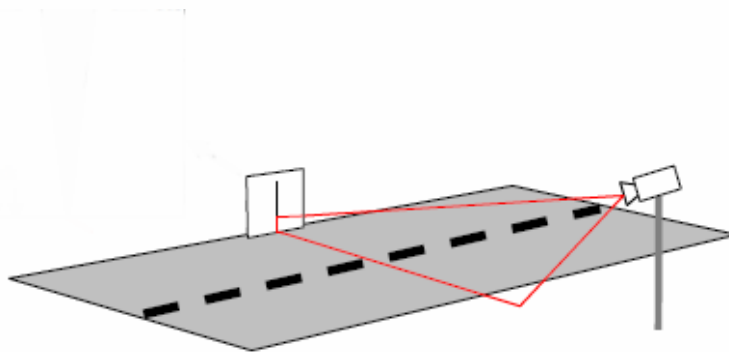
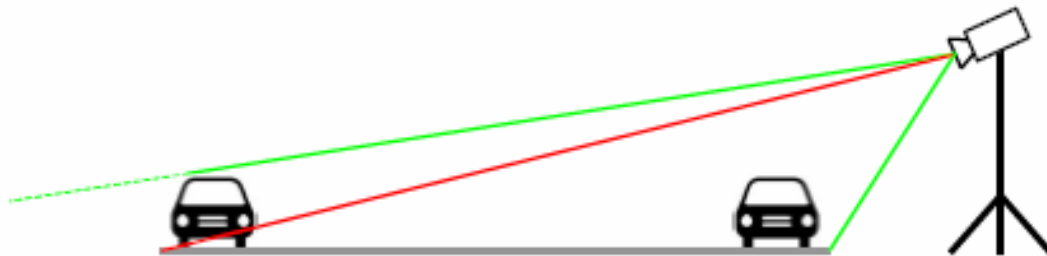
If two or more RC cars cross the line together the reported time each crossed the line is dependant on where the transponders are fitted, rather than which car's nose or wheels were first.

This problem is not confined to RC car racing. In athletics the results of a sprint race can often only be determined by a camera. In some cases the winning time is revised after the picture is examined.

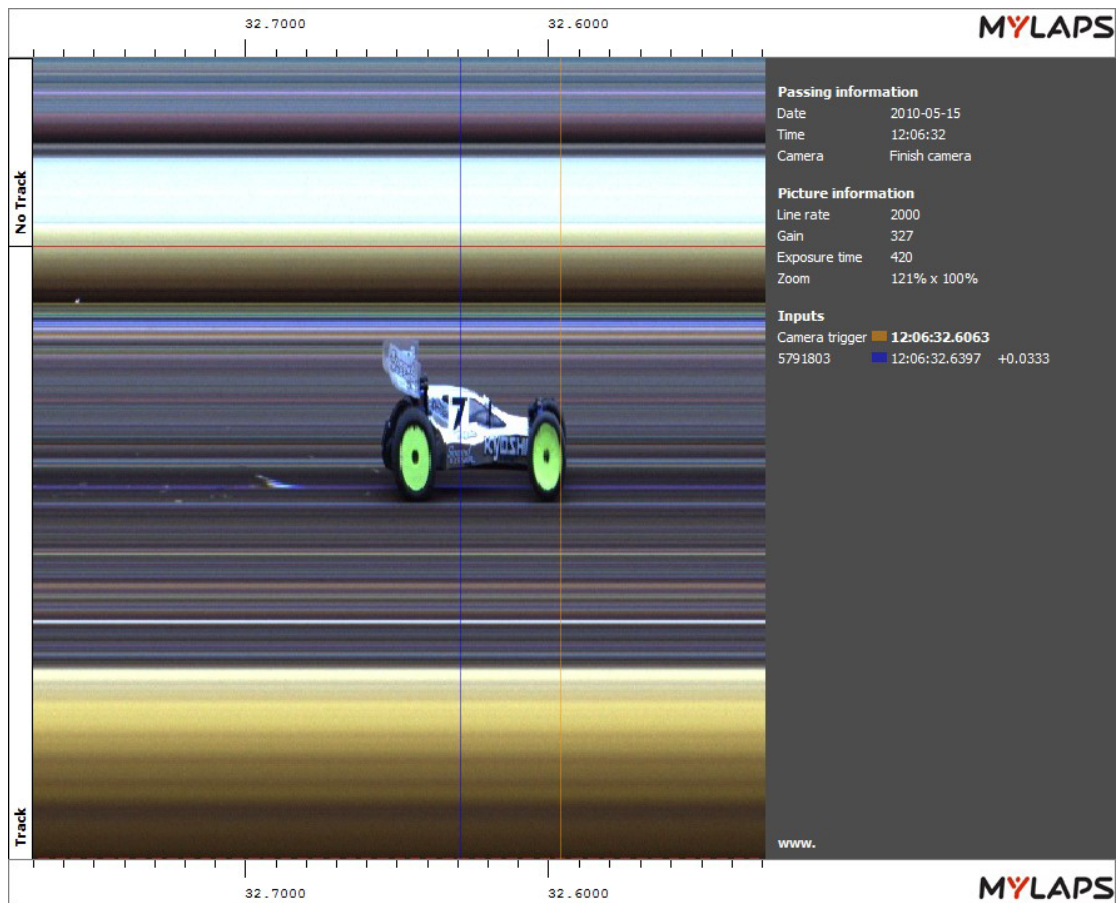
When qualifying, the position of the transponder is not an issue, the car starts it's own clock and the time for each lap is accurate.

A solution

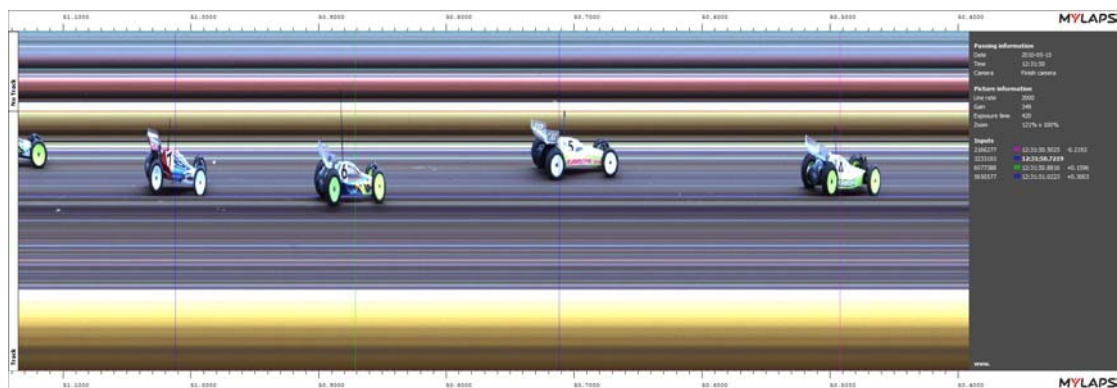
MyLaps produce timing equipment for all types of motor sport and what they call "active sports" where the motive power is wind, gravity or muscle. They have camera solutions to augment the transponder system and they showed me such a system during the Euros 2010 Offroad Warmup in Wien in May.



The Finish line Camera is very different to the sort of camera we all use. A normal camera takes an image of what is visible over a wide area at a single time. The Finish line camera is set up to record a very narrow image at a precise position in the track every few milliseconds. This position would normally be the centre point of the two loop wires. A computer builds up an image of what was at the finish line over a period of time. It is very important that the camera is set up correctly



As you scan the above picture from right to left you can see from the time scale at the bottom what was at the camera position. You can see that the front wheels crossed the camera “line” at 12:06:32.6063 and the transponder (blue line) crossed the decoder “line” 0.0333s later.



The next image is the cars crossing the line for the first time at a grid start final. The car numbers can be clearly seen and if this was a close finish, it would be possible to determine a winner by the closest of margins. You will also notice that the lengths of the cars seem to vary. This is because of the different speeds of the cars as they cross the line. The shorter the car length, the faster it is going. The line at this event was at the end of a straight with a 90 left, so you can see some of the cars already turning in and the 4th car, the shortest and so the fastest with it’s rear wheels off the ground and destined to go deep!

The benefit of the camera is dependant on it being correctly set up. Provided this can be done it can catch cars whose transponder has failed and also resolve close finishes. As a timekeeper I would definitely want to have it available for major races such as Euros and Worlds and some of the bigger events such as Neo.

You won’t be surprised to learn that the Finish line camera is not cheap, no precision equipment is. I use a voltmeter that costs €5. It is accurate enough for what I need, but if I want to accurately measure DC voltage to 3 decimal places I will have to pay several hundred Euros. I don’t see the camera as something that would be bought, rather hired for events. If you are interested in this, send me an email, address via www.bbksoftware.com.