



Informing Progress - Shaping the Future

Forensic Collision Reconstruction: A Road Map

This event was held on 29th June 2023 and was hosted by FOIL Northern Ireland. The speaker's slides can be found [here](#) and a recording of the presentation may be found by clicking [here](#).

Gavin Dunn of **Hawkins**, (a FOIL sponsor) and based in their Belfast office, is an expert in road traffic collision (RTC) investigation.

The talk focused on types of objective evidence relevant to RTC investigations.

From the scene: vehicle positions; road topography; debris; weather conditions; marks/damage to the road, etc; marks/damage to the vehicles; and pedestrian/cyclist position (where relevant).

As the RTC expert is rarely at the scene they will rely on: photographs (but are these of the correct place?); video; a sketch or map*; reports/statements*. The quality of any of these may be variable and there is always the potential for human error.

*The big question is the extent to which these are objective.

CCTV is a valuable source of evidence and may come from fixed or dashcams. Original CCTV files are vital, as data may be lost if the files are converted. Generally speaking, the expert can deal only with a short period/ a short distance.

From the vehicle: damage; light bulbs; seatbelts; tyres; visibility; causative defects; and onboard data, which is becoming increasingly important.

On-board data now includes airbag (or restraint) control modules, which control the deployment of airbags and which can be accessed and interpreted by the expert.

Usually with larger vehicles there will be a tachograph, with a speed graph, which may be analogue or digital. If the tachograph is damaged and fleet tracking is not available, there may be other components built into the vehicle which may provide assistance, but these are likely to be less accurate.

Other possible sources include infotainment (which may include GPS) and fleet tracking devices.

From pedestrian/cyclist: appearance/conspicuity; and damage to clothing which may assist in determining orientation.

The general approach to an RTC investigation

Once the objective evidence has been fed in from the client and/or the site, the process is:

Assess the evidence: is it useful, reliable, the best available?

Analyse the evidence: using appropriate methods and processes;

Interpret the results: usually there is some degree of interpretation and opinions are peer reviewed.

Report the results: which must be clear, concise and balanced.

Examples

The speaker presented a series of case studies involving, respectively, an armoured vehicle (to show that it would not have required a longer stopping distance/have been unstable than a production model); interpreting a tachograph to show that a lorry was being driven at a speed that was not suitable for the road on which it was being driven; and critical tyre marks being used to show that a driver was driving at about 100 mph, which was consistent with other physical evidence.

The speaker concluded the presentation by confirming that some evidence is better than others and the more information that can be provided, the better.

Q&A

A delegate asked whether the speaker felt that an RTC expert could comment on whether or not a low impact collision could cause injury to a driver of the car impacted. The response was that whilst complex, this is a matter of speed, change and time, which allow the forces to be determined. The speaker was less confident in opining on injury, although he did refer

to research on this subject which does allow the RTC expert to comment. Damage to the vehicles needs to be examined carefully.

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