

# DRIVEN TO DISTRACTION

## THE DATA BEHIND MOTOR VEHICLE COLLISIONS

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Technological innovations have, in many ways, made cars safer: Improved seatbelts, airbags and car frames all protect passengers in a collision, while auto-braking, lane-keeping assistance and autonomous driving systems are designed to help avoid accidents altogether. However, technology has also increased the complexity of in-car systems and added a host of new functions – and distractions.

Driver distraction is a factor in about 4 million motor vehicle crashes in North America each year.<sup>1</sup> A new study from AAA found that new vehicle infotainment systems take drivers eyes off the road and hands off the wheel for potentially dangerous periods of time. It only takes a split second for a car crash to happen; entering a destination into a navigation system was shown to take, on average, 40 seconds.<sup>2</sup> Furthermore, nearly 80% of collisions involved some form of driver inattention up to three seconds prior to the event.<sup>3</sup>



## DISTRACTED DRIVING

In any motor vehicle collision, one question comes up time and again: What was the driver doing? For a number of years, we have been able to acquire information about vehicle speed, wheel speed, vehicle momentum, accelerator and brake pedal application, and steering wheel input by scanning the airbag module. And a mechanical assessment may allow us to determine if any of the damage was the cause of, rather than caused by, the accident. However, none of this information tells us where the driver's attention was at the time of the accident.

## DATA COLLECTION

A typical vehicle today is equipped with anywhere between 50 and 70 computers, including sophisticated telematics and infotainment systems.

Drivers can connect their phones to take advantage of hands-free calling and texting, listen to music stored on their device and even access the internet and apps. Those systems, especially when synced with a phone, store a vast amount of digital data related to navigation, communication and vehicle events:

- Recent destinations
- Saved and favourite locations
- Device connections
- Call logs
- Contact information
- Text messages
- Images and media files
- Lights on/off
- Door open/close
- Gear shift
- Hard braking/acceleration

Data recovered from telematics and infotainment systems has become incredibly useful for claims investigations, enabling investigators to create a detailed recreation of what happened before, during and after an event.



## VEHICLE FORENSICS

Access to the “black box” information stored in a vehicle’s Airbag Control Module (ACM), can provide additional data to indicate vehicle speed, driver steering behaviour and braking actions for 5-20 seconds prior to the collision. Sometimes this information can point to the main causal factor of the collision, such as a wheel or tire failure. It may also contradict witness statements, e.g. “I pounded on the breaks but the vehicle didn’t respond in time.”

Now, with new investigative tools for accessing vehicle data from infotainment and telematics systems, investigators are able to put together an even more comprehensive timeline and formulate a probable cause.

Where an ACM may provide 20 seconds of pre-crash data, these systems can hold days’, or even months’, worth of information.

This data can be extremely valuable during an investigation, especially when paired with GPS track points, which are like an electronic breadcrumb trail and tell an investigator exactly when and where a specific system was accessed. Information such as media access, navigation system access, or mobile phone usage – all geo-located and timestamped – can lead to a better conclusion as to the causal factor in relation to any specific event. Digital forensics data essentially turns a vehicle into an eyewitness.



## DRIVING BEHAVIOUR

User data from the infotainment system can identify potential sources of driver distraction, such as looking up an address, texting, or talking on the phone just before the collision (a study by the University of Sussex showed that Bluetooth devices may still be a dangerous distraction, making drivers less aware of hazards on the road).<sup>4</sup> Data from a vehicle's telematics system can be used to analyze the driver's behaviour behind the wheel: speed, hard acceleration and braking, and the position of the headlight switch.

Looking beyond the immediate scene of the incident, the ability to know where the vehicle was prior to the incident can provide further insight and help establish a chain of events. Navigation data can link a vehicle to a location at a specific date and time and identify the path of travel. GPS tracking points can indicate if the vehicle left a popular night spot or local pub, and system alerts show what time the doors opened and closed, helping to further establish a timeline and giving more context to the event.

Distracted driving is an increasing concern for insurers, and it's strange to think that infotainment systems could potentially be both a potential problem and solution, but the data taken from telematics and infotainment systems helps investigators paint a more complete picture and generate a more robust timeline – and for insurers and lawyers, that means building a stronger case.

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4. Be Just As Bad As Talking On Your Cell Phone. 2016. Retrieved from <http://www.medicaldaily.com/distracted-driving-hands-free-bluetooth-cell-phone-388911>



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