

**Avoiding a Wreck in Court –  
a crash course in dealing  
with expert evidence in  
serious motor vehicle  
collision cases**

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## Introduction

In this CPD, we will address the following topics:

- A brief introduction to the law concerning serious motor vehicle collision offences.
- A brief introduction into expert evidence and the law that applies to it.
- The fundamentals of collision reconstruction.
- Tips and advice for what to look for in reports and how to best prepare your case.

**Overview of  
offences this CPD  
will focus on**

- Culpable driving causing death – s 318(1) *Crimes Act 1958* (Vic)
- Dangerous driving causing death or serious injury – s 319 *Crimes Act 1958* (Vic)
- Recklessly causing serious injury – s 17 *Crimes Act 1958* (Vic)
- Negligently causing serious injury – s 24 *Crimes Act 1958* (Vic)

## Culpable driving causing death

### S 318 Crimes Act 1958 – Culpable driving causing death

(1) Any person who by the culpable driving of a motor vehicle causes the death of another person shall be guilty of an indictable offence.

Culpable has been defined by subsection (2) to mean driving:

- **Recklessly** (s 318(2)(a));
- **Negligently** (s 318(2)(b));
- **Whilst so affected by alcohol** as to be incapable of having proper control of the motor vehicle (s 319(2)(c)); and
- **Whilst so affected by drugs** as to be incapable of having proper control of the motor vehicle (s319(2)(d)).

## Culpable driving causing death

### S 318 Crimes Act 1958 – Culpable driving causing death

#### Recklessness

The definition of "recklessness" requires the prosecution to prove beyond reasonable doubt that:

- The accused was aware of a risk that death or grievous bodily harm may result from his or her driving;
- The risk was substantial rather than remote;
- The accused consciously disregarded that risk; and
- The decision to disregard that risk was unjustifiable.

#### Negligence

A person drives "negligently" for the purposes of this offence if s/he fails unjustifiably and to a gross degree to observe the standard of care which a reasonable person would have observed in all the circumstances of the case.

Negligence may be established by proving that a person was so fatigued that s/he knew or ought to have known, that there was an appreciable risk of falling asleep or losing control of the vehicle while driving (s 318(2A)).

The level of negligence required must be of a "high order". It must involve a great falling short of the standard of care that a reasonable person would have exercised in the circumstances and involves a high risk of death or serious injury resulting from the relevant conduct (*Bouch v R* [2017] VSCA 86).

## Culpable driving causing death

### **S 318 Crimes Act 1958 – Culpable driving causing death**

(3) An indictment for an indictable offence under this section shall specify which form of culpability within the meaning of subsection (2) is charged but evidence of the whole of the circumstances shall be admissible on the trial on the indictment.

Note that an indictment may specify more than one basis for culpability (*R v Horvath* [1972] VR 533).

Tip: Ensure that you have proper and adequate particularisation of the charge at an early stage.

## Dangerous driving causing death or serious injury

### **S 319 Crimes Act 1958 – Dangerous driving causing death or serious injury**

A person who, **by driving a motor vehicle at a speed or in a manner that is dangerous to the public having regard to all the circumstances of the case**, causes the death of or causes serious injury to another person is guilty of an indictable offence.

All matters concerned with the control and management of the vehicle are part of the accused's "manner of driving". This includes speed, navigation and communication with other drivers (*R v Coventry* (1938) 59 CLR 633; *R v Burnside* [1962] VR 96).

There is no need to prove a course of conduct. "Manner of driving" covers all of the acts and omissions of a driver, including casual or transitory acts. A single dangerous act is sufficient (*R v Coventry* (1938) 59 CLR 633; *R v Burnside* [1962] VR 96).

**Dangerous driving  
causing death or  
serious injury**

**S 319 Crimes Act 1958 – Dangerous driving causing death or serious injury**

Be aware of subsection (1B):

In a proceeding for an offence against subsection (1) or (1A), it is to be **presumed**, in the absence of evidence to the contrary, that the accused drove the motor vehicle in a manner that was dangerous to the public having regard to all the circumstances of the case if the prosecution proves that the accused, at the time of driving, was knowingly or recklessly in contravention of section 18 (**driver not licensed**) or 30 (**drive whilst disqualified etc.**) of the *Road Safety Act 1986*.

## Differences between the offences

Dangerous driving is an alternative offence to culpable driving causing death or negligently causing serious injury (s 422A *Crimes Act 1958*).

When dangerous driving is left to the jury as an alternative offence, the judge is required to clearly direct the jury about the difference between the two offences

(See *R v De Montero* (2009) 25 VR 694; *King v R* (2011) 32 VR 233; *R v Buttsworth* [1983] 1 NSWLR 658; *McBride v The Queen* (1966) 115 CLR 44; *Jiminez v The Queen* (1992) 173 CLR 572).

The Judge should explain the following matters to the jury:

- The offence of dangerous driving, through a serious offence, involves conduct that is less blameworthy than culpable driving;
- While culpable driving may require proof of gross negligence, dangerous driving requires proof that the accused's driving involves a serious breach of the proper management or control of the vehicle that created a real risk that members of the public would be killed or seriously injured.

## Recklessly causing serious injury

### **s 17 Crimes Act 1958**

A person who, without lawful excuse, recklessly causes serious injury to another person is guilty of an indictable offence.

To have been reckless about causing serious injury, the accused must have been aware, when s/he committed the relevant conduct, that it would **probably** cause serious injury (*DPP Reference No 1 of 2019* [2021] HCA 26; *R v Campbell* [1997] 2 VR 585).

## Negligently causing serious injury

### *s 24 Crimes Act 1958*

A person who by negligently doing or omitting to do an act causes serious injury to another person is guilty of an indictable offence.

The prosecution must prove that the accused breached a duty of care by being **criminally negligent**.

A person acts with “criminal negligence” if his/her **acts fall greatly short of the standard of care a reasonable person would have exercised and involved a high risk that death or serious injury would result.**

It is an objective test which requires the jury to compare the accused’s conduct with the “standard of care” that a reasonable person would have exercised in the circumstances.

## Sentencing Provisions

Offence	Max penalty	Standard Sentence	Mandatory Sentencing Provisions	Mandatory licence disqualification
Culpable driving causing death – s 318	20 years imprisonment	8 years imprisonment	Category 2 offence. Court required to impose a custodial order unless the circumstances set out in s 5(2H)(a)-(e) of the <i>Sentencing Act</i> exist.	24 months (s 89(2)(b) <i>Sentencing Act</i> ).
Dangerous driving causing death – s 319(1)	10 years imprisonment	-	Category 2 offence (as above).	18 months (s 89(2)(a) <i>Sentencing Act</i> ).
Dangerous driving causing serious injury – s 319(1A)	5 years imprisonment	-	-	18 months (s 89(2)(a) <i>Sentencing Act</i> ).
RCSI – s 17	15 years imprisonment	-	Category 1 offence if victim is an emergency worker, with mandatory 2-year NPP unless special reasons exist (s10AA <i>Sentencing Act</i> ).	12 months, if offence arose out of the driving of a motor vehicle while under the influence of alcohol or alcohol and a drug (s 89(2)(c) <i>Sentencing Act</i> ).
NCSI – s 24	10 years imprisonment	-	-	24 months (s 89(2)(b) <i>Sentencing Act</i> ).

## The Evidence Act

### The Opinion Rule

**S76 –**

**Evidence of an opinion is not admissible to prove the existence of a fact about the existence of which the opinion was expressed.**

#### **Exceptions;**

- • lay opinion ([section 78](#))
- • Aboriginal and Torres Strait Islander traditional laws and customs ([section 78A](#))
- • expert opinion ([section 79](#))
- • admissions ([section 81](#))
- • exceptions to the rule excluding evidence of judgments and convictions ([section 92\(3\)](#))
- • character of and expert opinion about an accused ([sections 110](#) and [111](#)).

## Also consider

### What is an opinion?

- Various statements from higher courts;
- an inference drawn from observed and communicable data
- Evidence of a conclusion, usually judgmental or debatable, reasonable from facts.
- The evidence must also not fall afoul of 55/56. – relevance.
- Another slight sidestep; consider IMM – when considering probative value – assume credibility and reliability. There is some authority to suggest that complete junk science would fall so far below standard that it isn't even relevant. The IMM test where no rational jury could accept it. High bar.

## **S79 Evidence Act**

- An exception the rule in s76.
- If a person has specialised knowledge based on that person's study, training or experience the opinion rule does not apply to evidence of an opinion of that person that is wholly or substantially based on that knowledge.

## The code of conduct

- Based on the practice note **SC CR 3**. Recently reissued; 1 June 2025. (also keep in mind **SC CR 7** – also expert reports – but for psych report). The actual Code of Conduct is at 44A.
- Similar to a practitioner's duty – each expert has an overriding duty to assist the court impartially by giving objective, unbiased opinion on matters within the expert's specialised knowledge
- This duty overrides their duty to whoever is paying them.
- All reports must contain;
  - Name and place of employment
  - An acknowledgement they have read this and are bound by it
  - Their qualifications
  - The assumptions and material facts on which they base their opinion
  - Assessment of particular questions

Duty also to (if directed by the Court);

- Confer with other expert witnesses, provide a joint report, abide with court directions

## **Impartiality**

- This is the expert's overriding and paramount duty.
- This duty overrides any duty to the party that retained them.
- The requirement is to assist the court impartially on matters relevant to the area of expertise of the witness.

# Example 'Recon' Case Types



**VEHICLE**



**MOTORCYCLE**



**VULNERABLE  
ROAD USERS**  
(PEDESTRIAN,  
BICYCLE, ELECTRIC  
MOBILITY)



**HEAVY VEHICLES  
& WORKPLACE**  
(HEAVY TRUCK, BUS,  
TRAIN, TRAM,  
MINING)

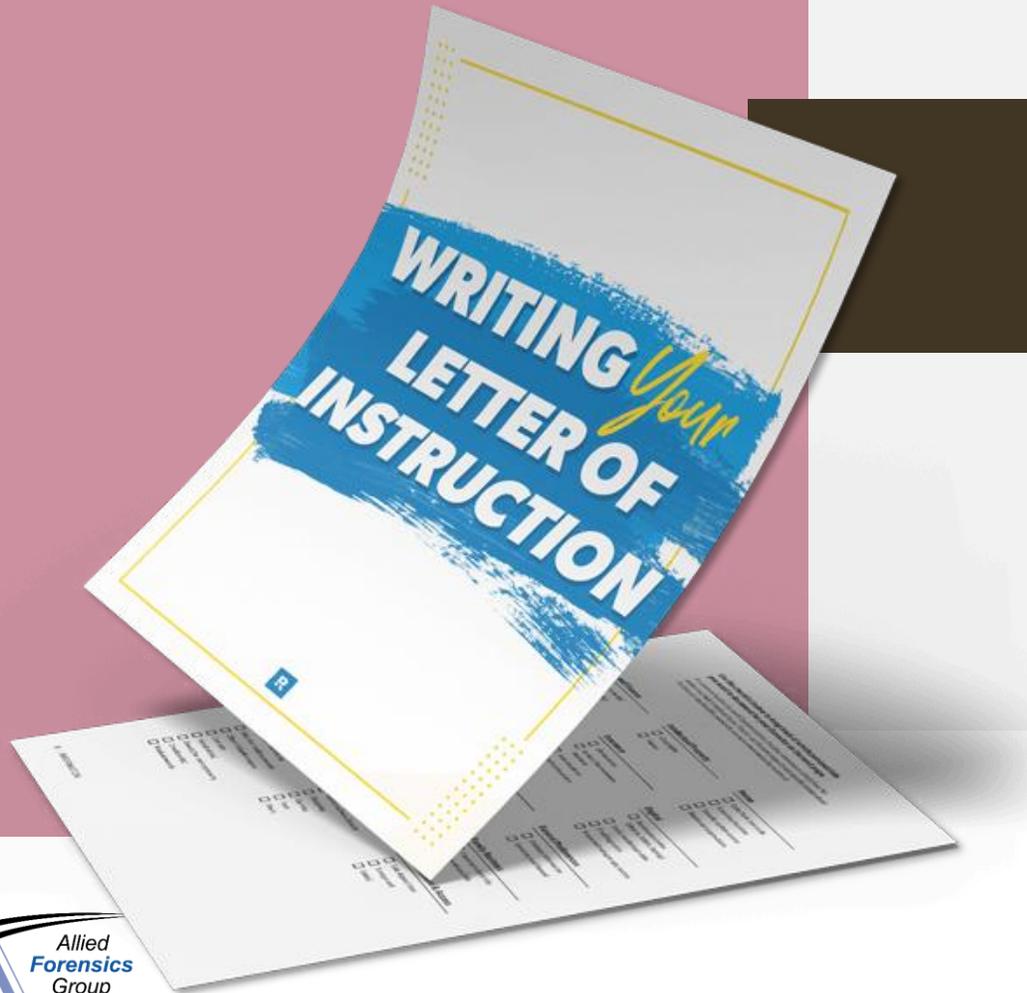


**ROAD &  
ROADWORKS**



**DATA ANALYSIS**  
(TELEMATIC,  
INFOTAINMENT,  
EVENT DATA  
RECORDER, DASH  
CAM, CCTV)

# Letter of Instruction



- Pre-instruction discussion
- Background
- Nature of the dispute
- List of assumptions (careful!)
  - Include source
- Questions
  - (Do not ask us whose fault it is!)
- List and attach relevant materials
  - All materials that might have a bearing on the opinions formed by the expert
  - Chronological order
- Code of conduct
- Timelines for your case

# VIC Code of Conduct

## ✓ Duty to the Court

## ✓ Unbiased / independent

## ✓ Ethical

Name, address, acknowledgement, qualifications, areas outside expertise, all enquiries carried out

## ✓ The **reasons** for the opinion

Assumptions, facts, reasons, research, testing, data, error

## ✓ Supplementary report

## ✓ Expert conclave / joint report

### FORM 44A

#### Rule 44.01

#### EXPERT WITNESS CODE OF CONDUCT

1. A person engaged as an expert witness has an overriding duty to assist the Court impartially on matters relevant to the area of expertise of the witness.
2. An expert witness is not an advocate for a party.
3. Every report prepared by an expert witness for the use of the Court shall state the opinion or opinions of the expert and shall state, specify or provide –
  - (a) the name and address of the expert;
  - (b) an acknowledgment that the expert has read this code and agrees to be bound by it;
  - (c) the qualifications of the expert to prepare the report;
  - (d) the facts, matters and assumptions on which each opinion expressed in the report is based (a letter of instructions may be annexed);
  - (e) the reasons for,
    - (i) any literature or other materials utilised in support of,
    - (ii) a summary of –
  - (f) each such opinion;
  - (g) (if applicable) that a particular question, issue or matter falls outside the expert's field of expertise;
  - (h) any examinations, tests or other investigations on which the expert has relied, identifying the person who carried them out and that person's qualifications;
  - (i) a declaration that the expert has made all the inquiries which the expert believes are desirable and appropriate, and that no matters of significance which the expert regards as relevant have, to the knowledge of the expert, been withheld from the Court;
  - (j) any qualification of an opinion expressed in the report without which the report is or may be incomplete or inaccurate; and
  - (k) whether any opinion expressed in the report is not a concluded opinion because of insufficient research or insufficient data or for any other reason.
4. Where an expert witness has provided to a party (or that party's legal representative) a report for the use of the Court, and the expert thereafter changes his or her opinion on a material matter, the expert shall forthwith provide to the party (or that party's legal representative) a supplementary report which shall state, specify or provide the information referred to in paragraphs (a), (d), (e), (g), (h), (i) and (j) of clause 3 of this code and, if applicable, paragraph (f) of that clause.
5. If directed to do so by the Court, an expert witness shall –
  - (a) confer with any other expert witness; and
  - (b) provide the Court with a joint report specifying (as the case requires) matters agreed and matters not agreed and the reasons for the experts not agreeing.
6. Each expert witness shall exercise his or her independent judgment in relation to every conference in which the expert participates pursuant to a direction of the Court and in relation to each report thereafter provided, and shall not act on any instruction or request to withhold or avoid agreement.



# Core File

LEGAL DOCUMENTS  
POLICE REPORT & EVIDENCE  
AMBULANCE/FIRE REPORTS  
WITNESS STATEMENTS  
PHOTOGRAPHS / BWV  
SKETCHES/DRAWINGS  
SCENE MAPS/DATA  
VEHICLE DATA  
MEDICAL DOCUMENTS  
CCTV / DASH CAM / TELEMATIC  
OTHER EXPERT REPORTS

# Photographs



Your FOI / info request should read:

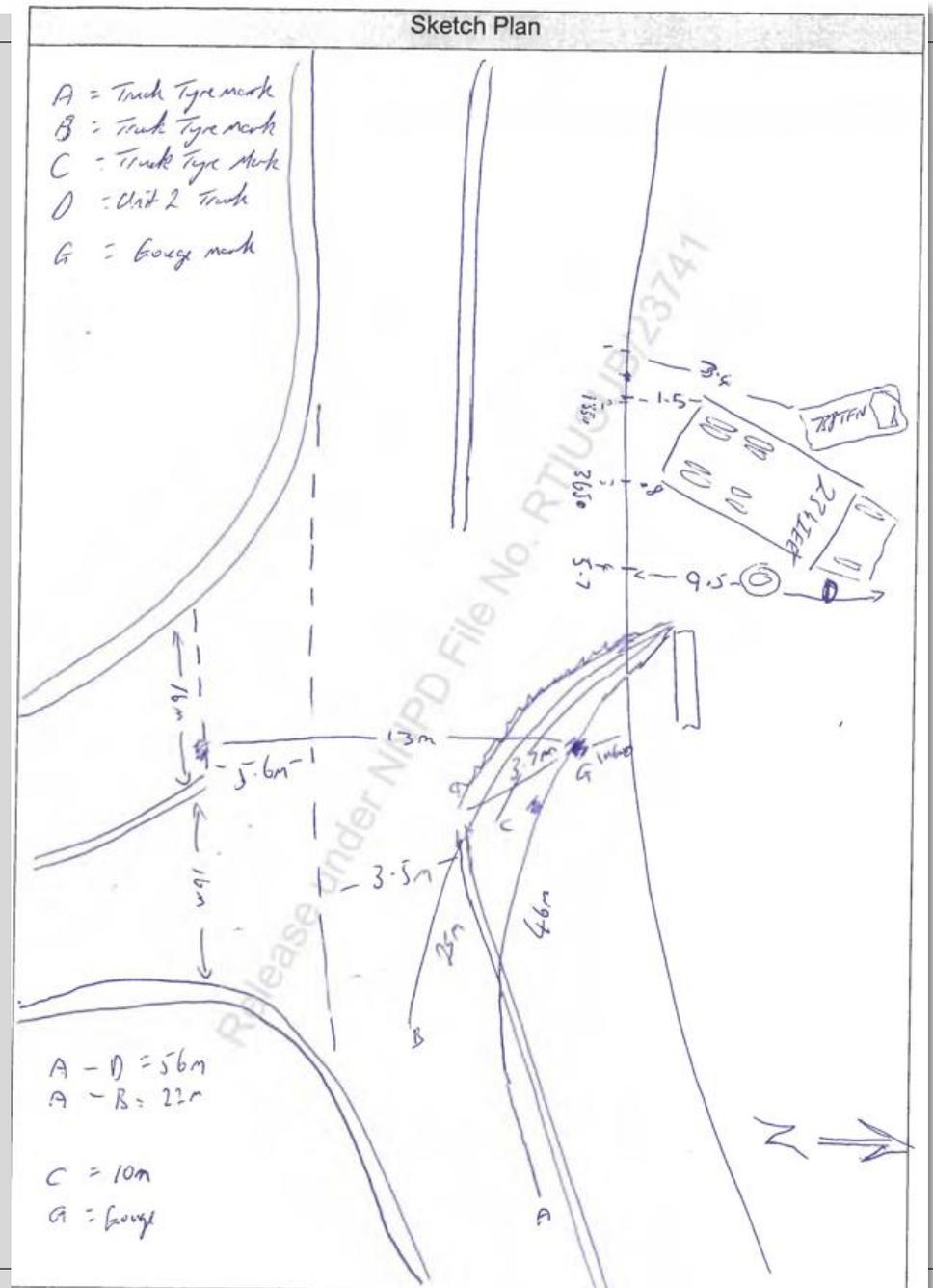
Photographs

Photographs in their original (raw, uncompressed, digital) format (e.g. .jpeg or similar)

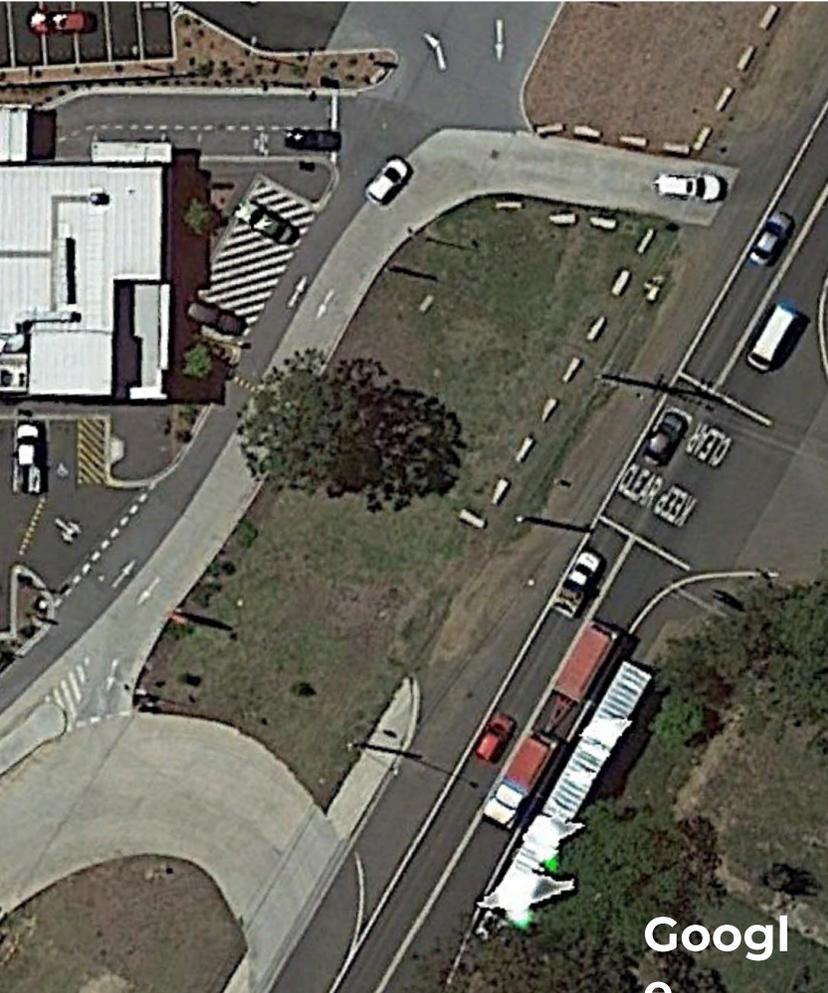
# Body Worn Video



# Sketches



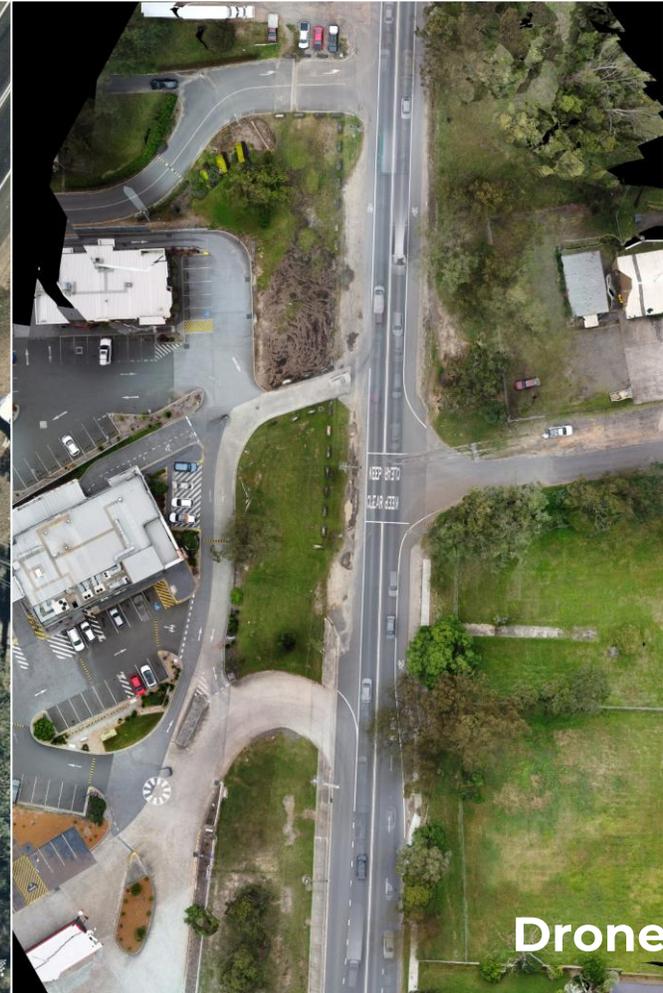
# Scene Mapping



Google



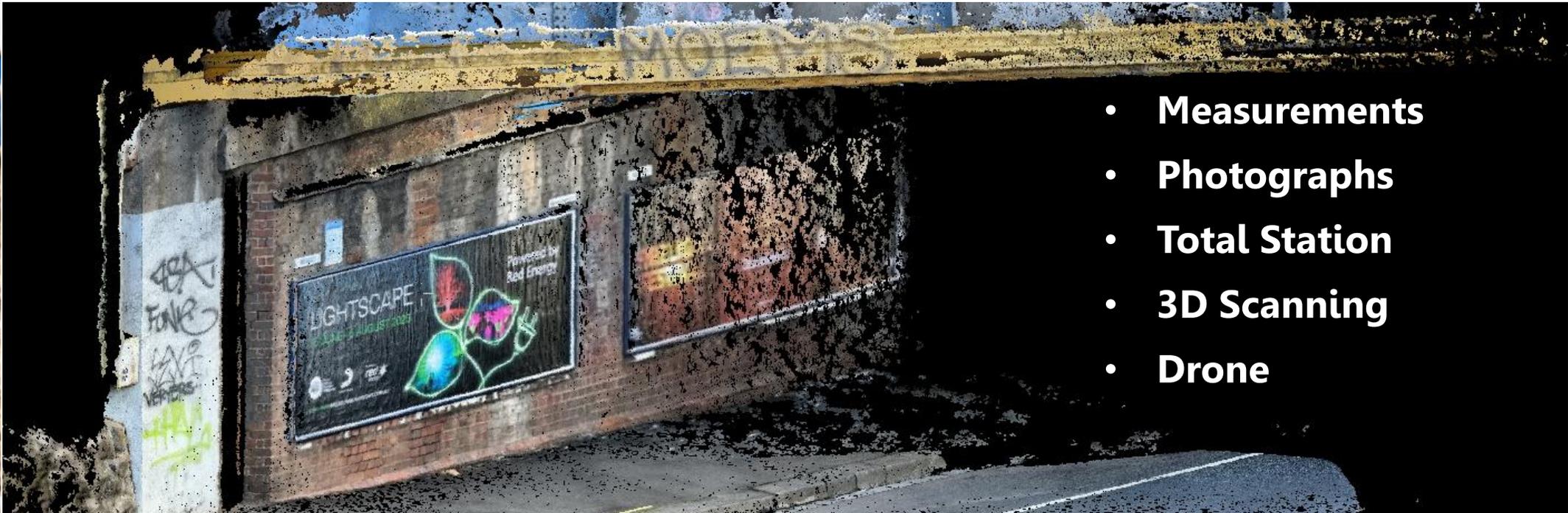
Nearmap



Drone



## Site Inspections



- **Measurements**
- **Photographs**
- **Total Station**
- **3D Scanning**
- **Drone**

# Scanning + Photogrammetry





# Vehicle Inspections

- Measurements
- Photographs
- Black Box Downloads
- Telematic Downloads



# 'Black box' data



## DTCs Present at Time of Event (Most Recent Event, TRG 3)

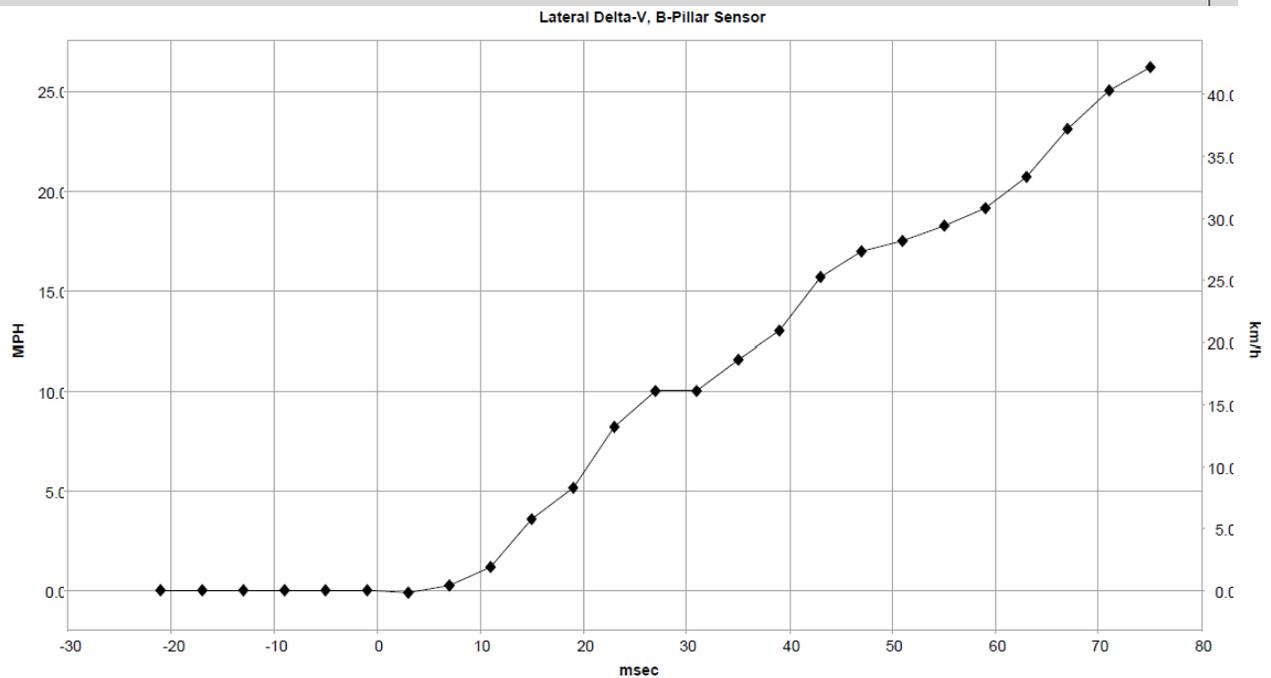
Recording Status, Diagnostic	Complete
Ignition Cycle Since DTC was Set (times)	0
Airbag Warning Lamp ON Time Since DTC was Set (min)	0
Diagnostic Trouble Codes	None

## Pre-Crash Data, 1 Sample (Most Recent Event, TRG 3)

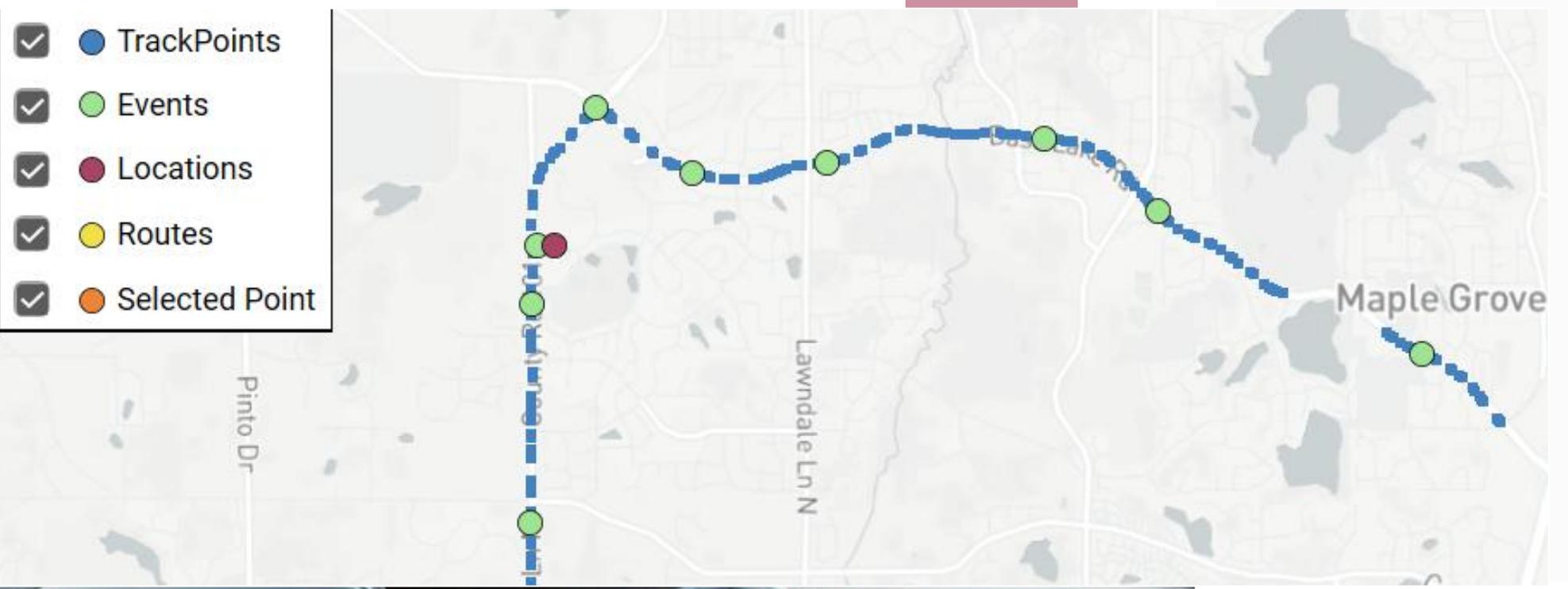
Recording Status, Pre-Crash/Occupant	Complete
Time from Pre-Crash to TRG (msec)	900
Buckle Switch, Driver	Buckled
Buckle Switch, Passenger	Buckled
Occupancy Status, Passenger	AM50
Seat Position, Driver	Rearward
Shift Position	Drive

## Pre-Crash Data, -5 to 0 seconds (Most Recent Event, TRG 3)

Time (sec)	-4.9	-3.9	-2.9	-1.9	-0.9	0 (TRG)
Vehicle Speed (MPH [km/h])	39.8 [64]	39.8 [64]	39.8 [64]	39.8 [64]	39.8 [64]	39.8 [64]
Brake Switch	OFF	OFF	OFF	OFF	OFF	OFF
Accelerator Rate (V)	1.09	1.09	1.13	1.21	1.21	1.21
Engine RPM (RPM)	1,600	1,600	1,600	1,600	1,600	1,600



- ✓ ● TrackPoints
- ✓ ● Events
- ✓ ● Locations
- ✓ ● Routes
- ✓ ● Selected Point



●  
**Berla**  
 Infotainment data



# Ambulance / Fire Data



- First to arrive
- Deal with human component
- Report has detailed information about incident
- Each will have separate report:
  - Ambulance VIC
  - SES
  - FRV/MFB/CFA

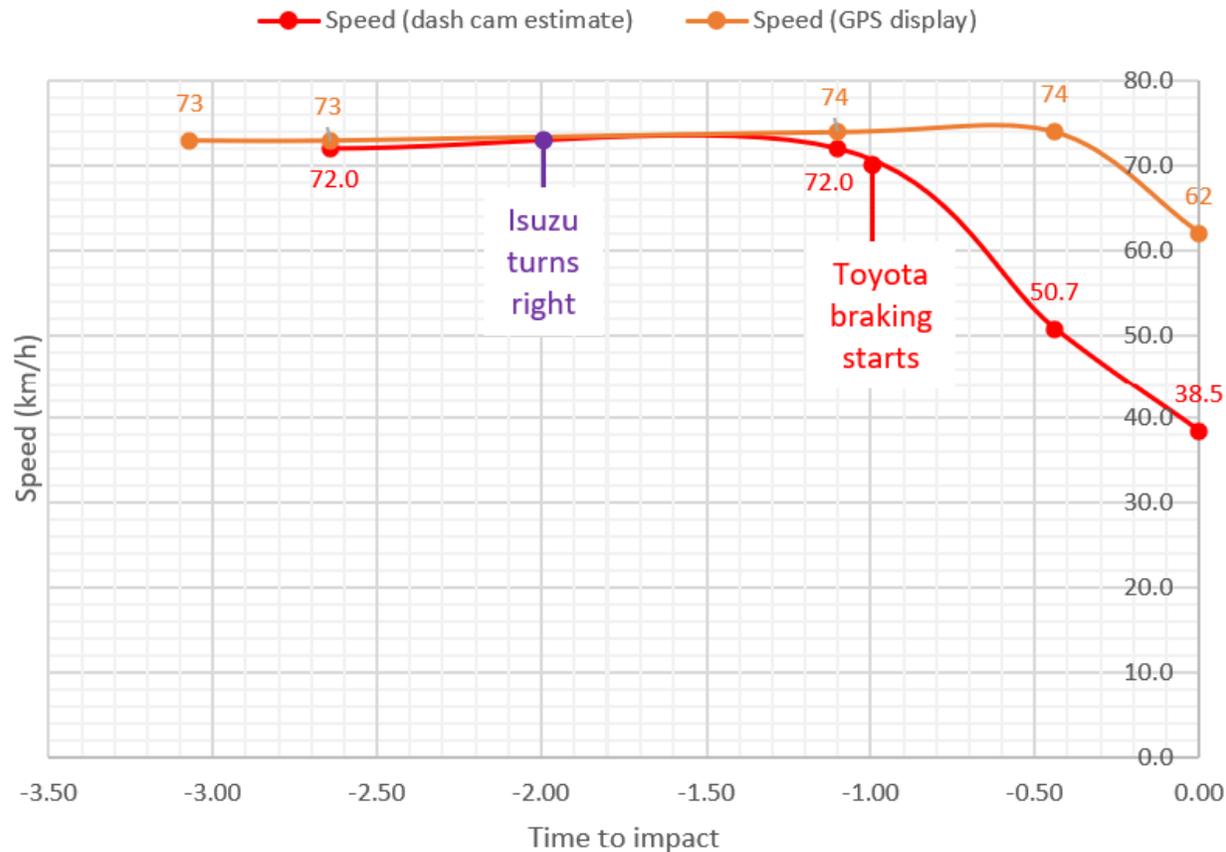
# Dash Cameras



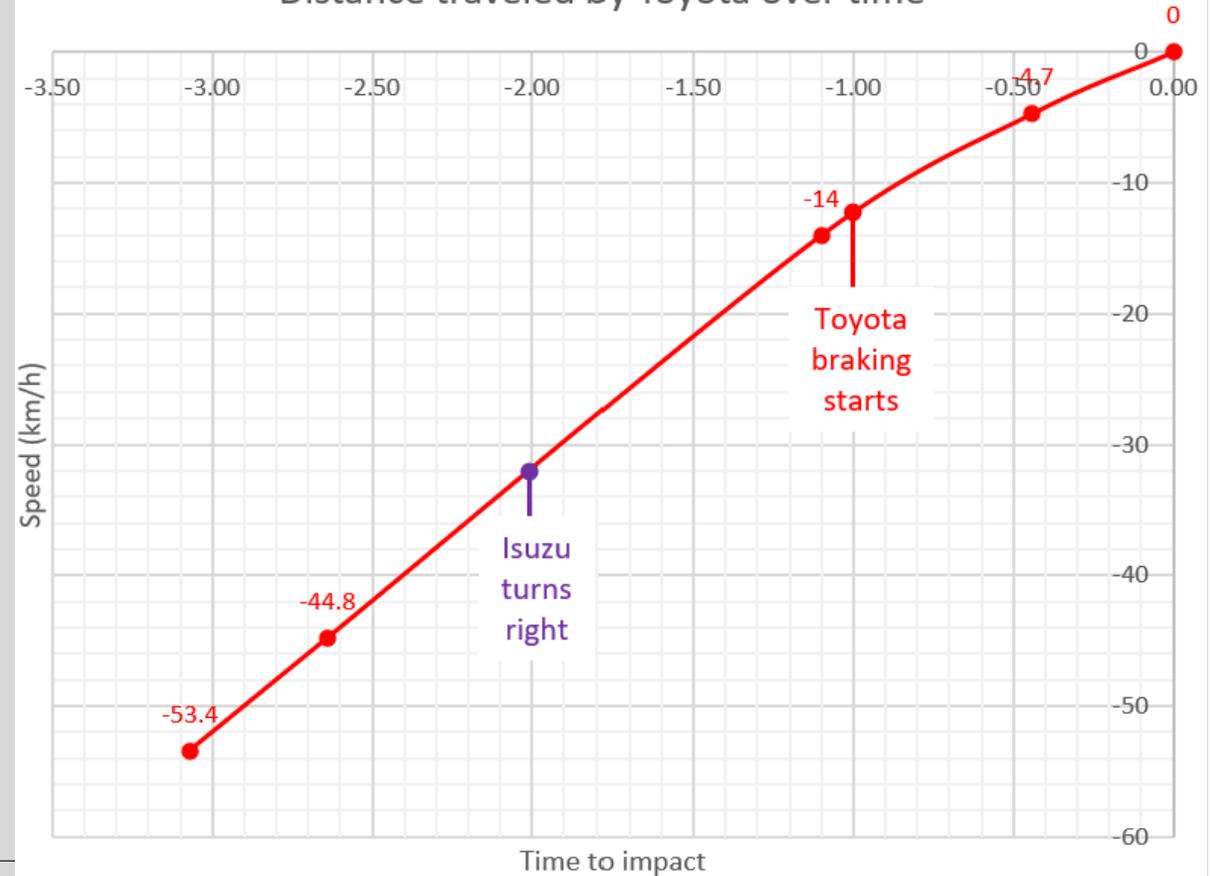
# Speed and Distance Over Time

Component	72 km/h (20 m/s)	50 km/h (13.9 m/s)	Difference
PRT phase (1 sec)	20m	14m	-6m
Braking phase	23m	11m	-11m
Total stopping distance	43m	25m	-17m
Available distance to impact	32m	32m	
Result	<b>-11m</b> <b>IMPACT</b>	<b>+7m</b> <b>NO IMPACT</b>	

Speed of Toyota over time



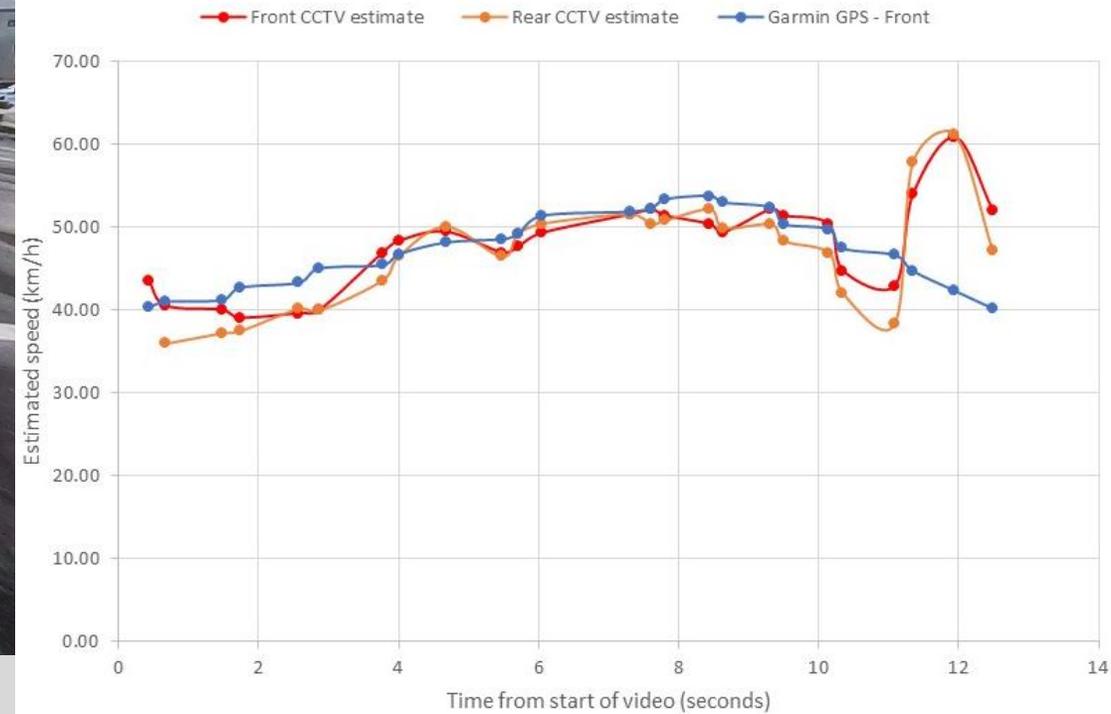
Distance traveled by Toyota over time

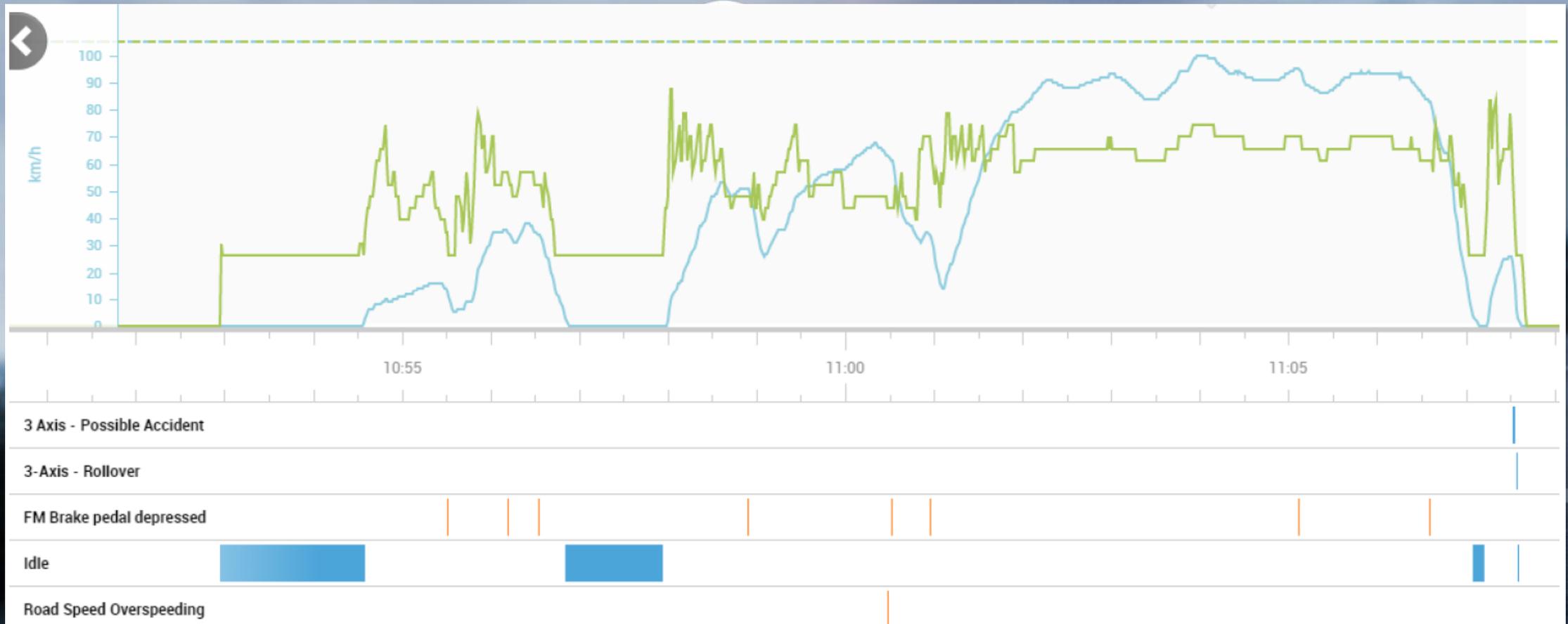


# Motorcycle Crash



Motorcycle speed over time





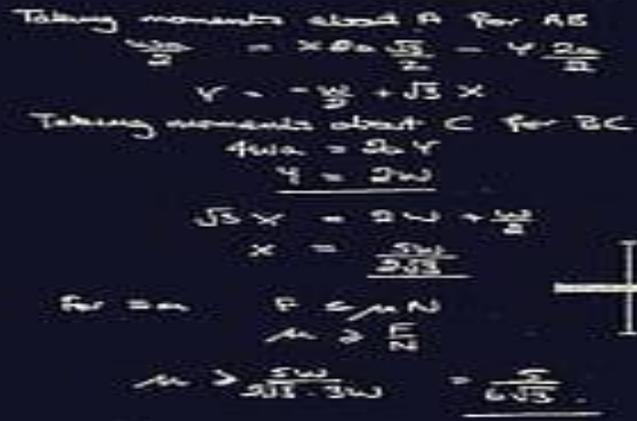
# GPS / Telematic Data

- Vehicle Position | Speed | Overspeed | Idling | Braking | Cornering

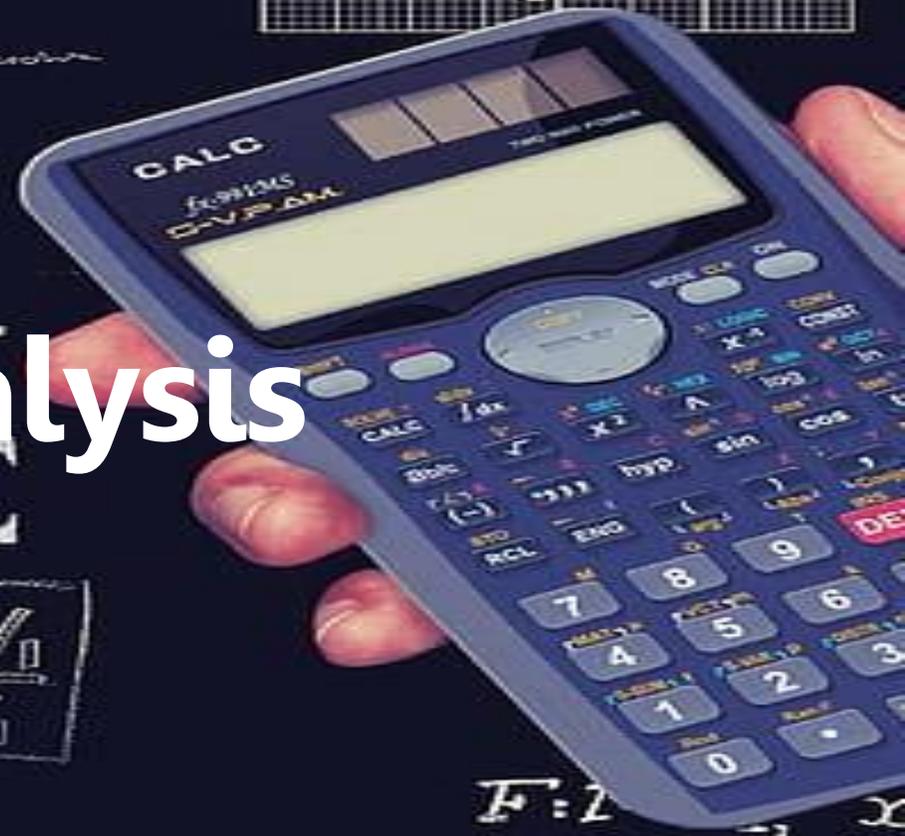
$\frac{1}{2} \times \frac{1}{2} \times \cos \theta$   
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 This moment is  
 to the right.  
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 at base at y = y-axis  
 about base.  
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 is Cent of mass at  $\frac{1}{2}$  from base  
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 at plane base  
 $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$   
 mass  $\frac{1}{2}$  from vertex  
 tangent to hemisphere at  $\frac{1}{2}$   
 at plane base  
 couple of magnitude  $\frac{1}{2} \times \frac{1}{2} \times \sin \theta$



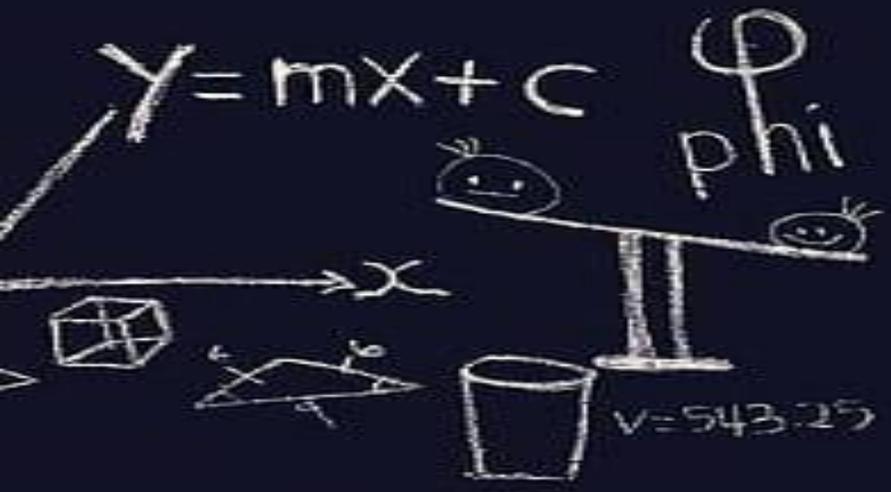
For unit for water system  
 $12+12' = 60'$   
 By symmetry  $x = 12'$   
 $12 = 2W$   
 As before  $F = F'$



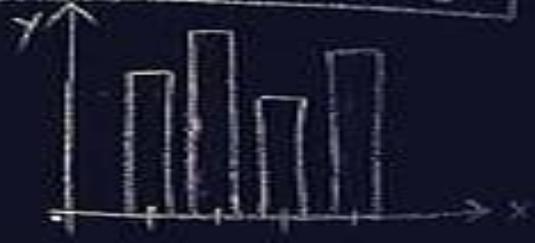
Consider to resolve  
 for BC



# Analysis



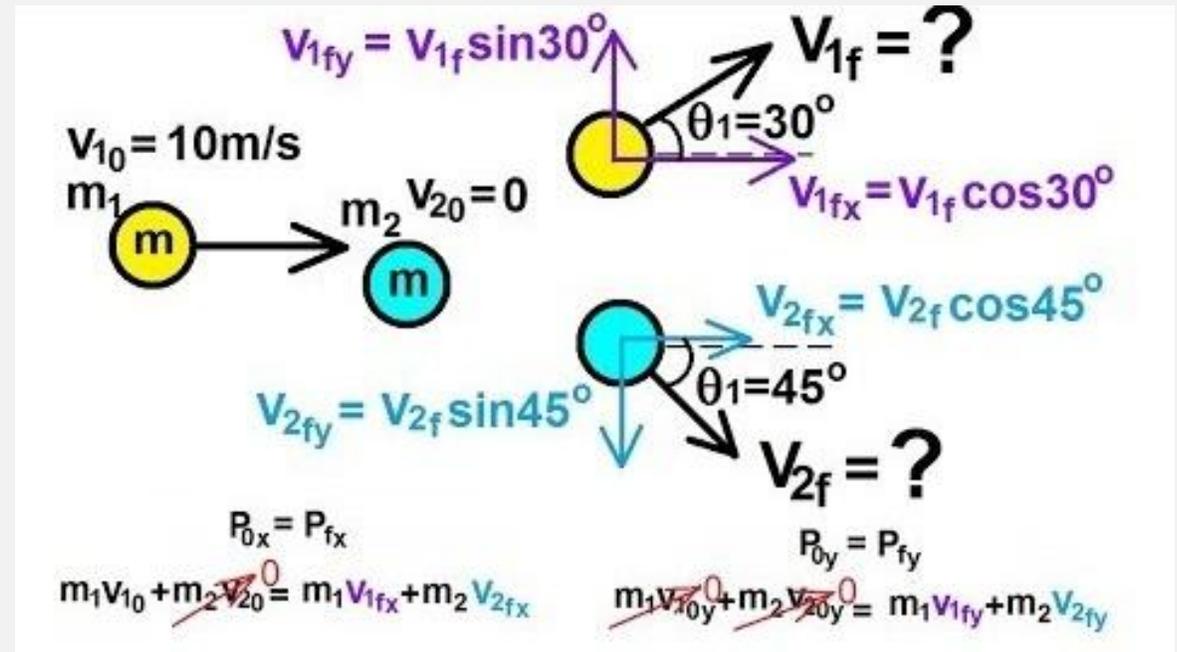
$$\frac{x - x_1}{x_2 - x_1} = \frac{y - y_1}{y_2 - y_1}$$



$F = 1$   
 $\int_c^b f(x) dx =$

# Points of Rest

- If we know where something came to rest, we can assess how it got there.



- Analyze and document evidence on a map.
- Request photos taken by any media outlets which document rest positions.

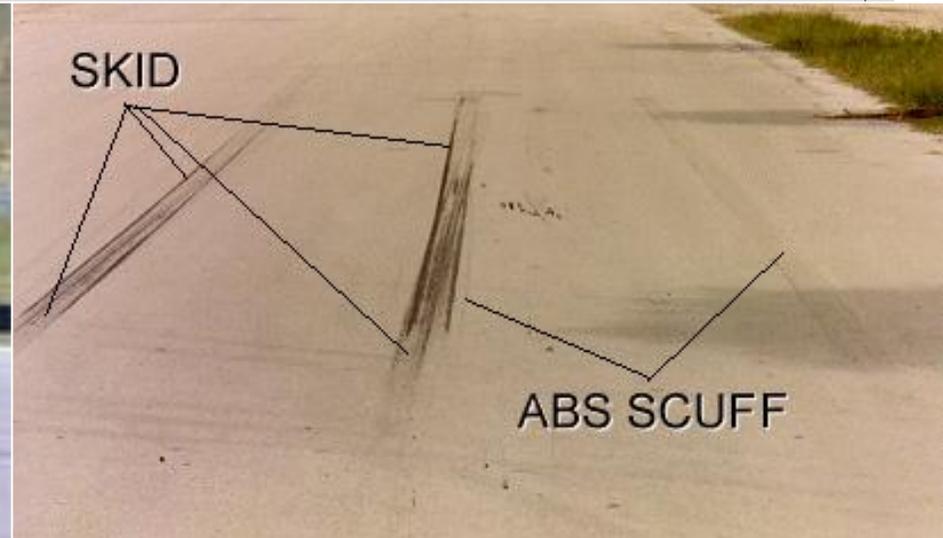
# Skid Marks



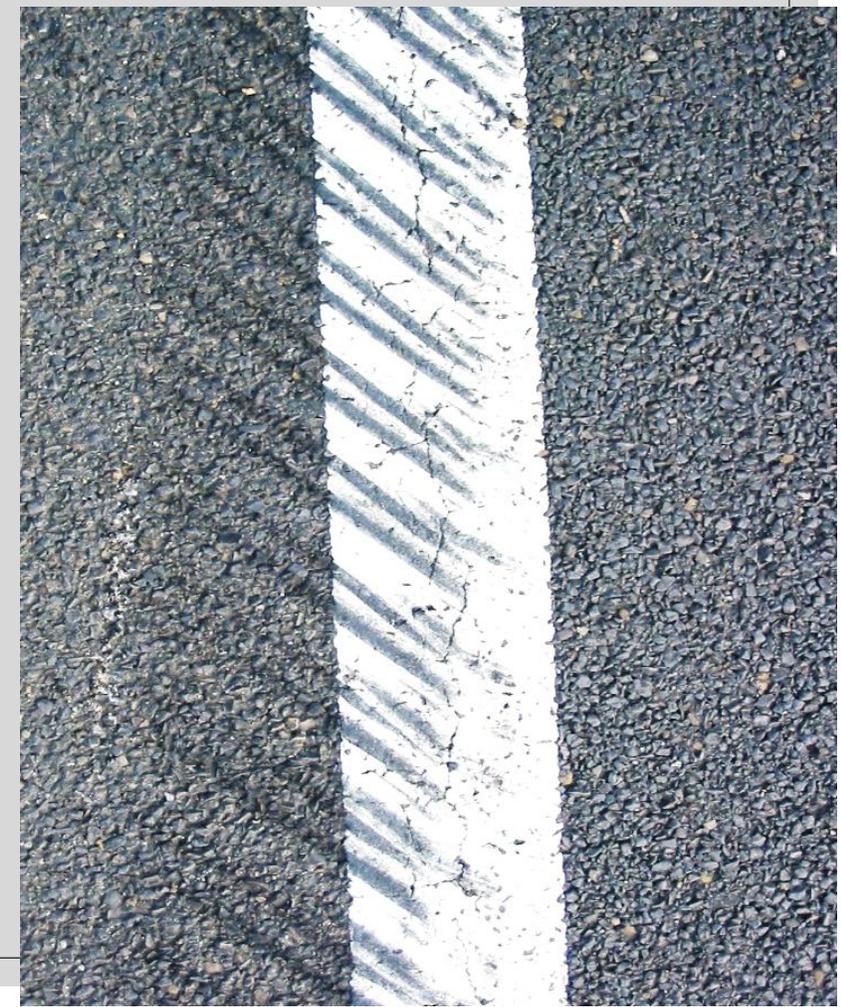
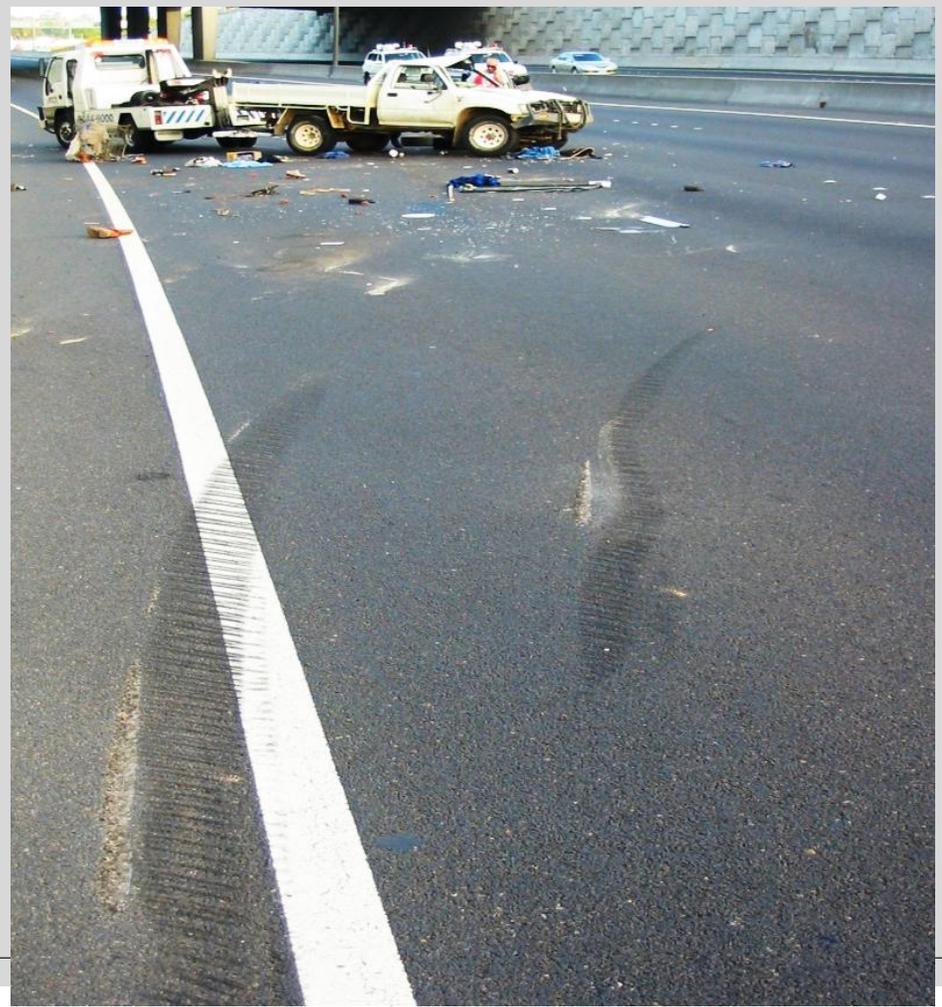
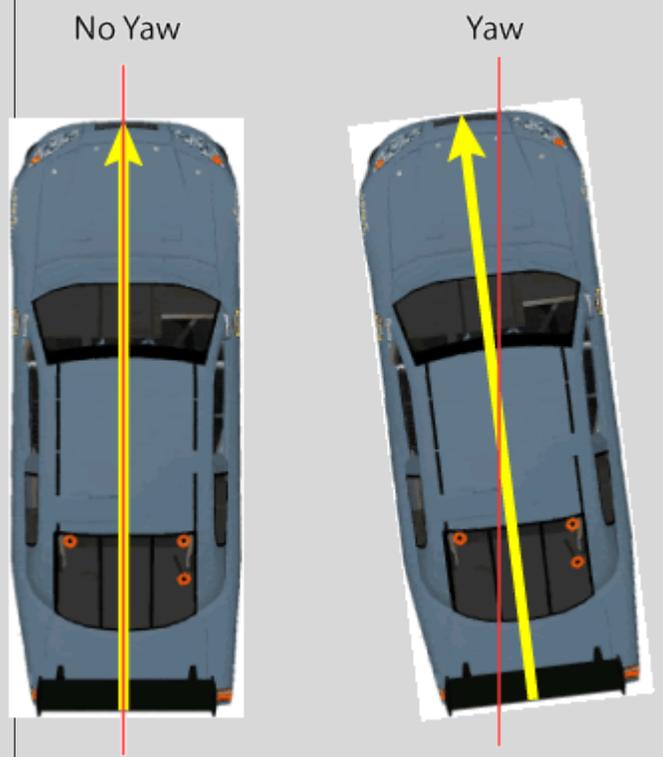
# ABS Marks



Full braking at 100 km/h

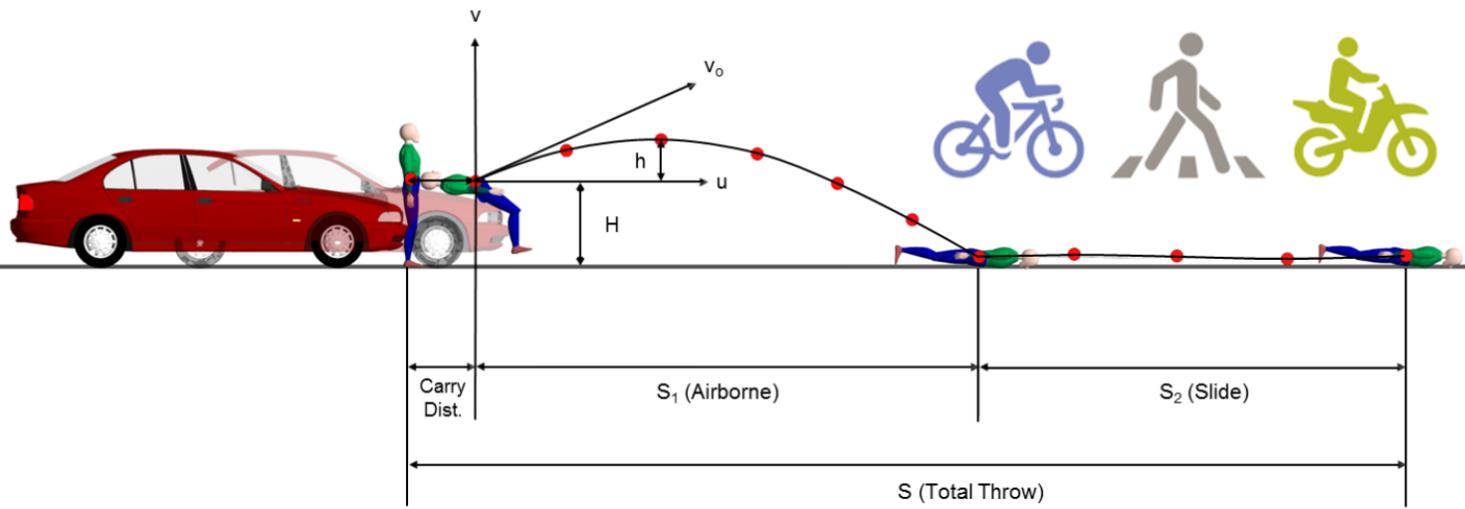


# Yaw Marks (Sideslip, Drift)





Point of Impact



# Projectile physics



# Scene Evidence Tells A Story



## Useful Texts

- J. Stannard Baker and Lynn B Fricke *Traffic Crash Investigation* (Northwestern University for Public Safety 11<sup>th</sup> ed 2014)
- Lynn B. Fricke *Traffic Crash Reconstruction* (Northwestern University for Public Safety 2<sup>nd</sup> ed 2010)
- *Forensic collision investigation; A primer for courts* (The Royal Society of Edinburgh January 2022)
- Saule Nogayeva et al. *The forensic investigation of vehicle-pedestrian collision: A review* (Science and Justice <https://doi.org/10.1016/j.scijus.2020.10.006> November 2020)
- *Best Practice Manual for Road Accident Reconstruction* (European Network of Forensic Science Institutes November 2015)
- *Crash Reconstruction Basics for Prosecutors* (American Prosecutors Research Institute March 2023)
- Lastly, and very much least, *Annexure B, Foundations of Collision Reconstruction* (Victoria Police Forensic Services Centre)

## Suggestions for preparing your case

- If possible, engage an expert as soon as you are instructed.
- Be aware that your letter of instruction to the expert is a very important document. Be very careful about what you say about the circumstances of the collision as you understand them to be. Your letter of instruction to the expert can find its way into evidence.
- Waiting until the HUB is received may be too late.
- Waiting may mean that crucial evidence is lost. Skid marks, gouges, debris can all disappear in time.
- Visit the scene yourself as soon as possible. Take notes. Take photos.
- The expert will visit the scene, but a view is invaluable.
- Find out the location of the wreck. The expert may be able to download data from the Event Data Recorder (EDR)

## When the HUB is received

- Read it. Thoroughly. Your view should help you understand the topography and the location of witnesses (if any).
- 2 critical reports
  - The collision reconstruction report
  - The mechanical inspection report
- Examine closely the qualifications and/or experience of the authors. Both must be set out clearly.
- Look for peer review of the report.
- *Annexure B asserts that collision reconstruction...requires the use of scientific methodology from multiple disciplines including engineering, physics, vehicle dynamics, mathematics, photogrammetry and computer applications to determine how and why a collision occurred. All that in a member of VicPol.*

## When the HUB is received

- There are numerous methodologies that may be applied to a reconstruction. Look for identification of the methodology and the reasons why it was chosen and others not used. Other methodologies may assist your client. Your expert will help you with this.
- There are numerous reconstruction, simulation and photogrammetry software programs available. Look for identification of the software used and the reasons why it was chosen and others not used. Other software programs may assist your client. Again, your expert will help you with this.
- Was the EDR secured and downloaded? If so, was any data obtained used in the reconstruction.
- Look for any indication of validation and error rates in any analysis.
- Look for any assumptions.
- You will probably look in vain for reference to controversies as required by the Practice Note.

## When the HUB is received

- Look for:
  - Evidence that the collision scene was secured and all items remained undisturbed until the arrival of the investigator
  - Evidence that the author attended the scene and 'walked the scene' looking for road defects or evidence that the road may have caused or contributed to the collision. Potentially exculpatory evidence.
  - Detailed recitation of items collected from the scene.
  - Detailed description of the scene.
  - Photos. Lots of photos
  - Diagrams of skid marks, scuff marks, positions of vehicles, people, animals etc
  - Evidence that the author has compared and evaluated together all pieces of physical evidence.
  - Was surface friction testing carried out or was a database of surface friction results used?
- The mechanical inspection report is usually prepared by a qualified motor mechanic. Usually not much room for challenging their expertise.
- In the mechanical inspection report look for:
  - Brake and/or steering fault.
  - Tyre deflation.
  - State of headlights
  - The removal of the EDR

## What to ask for

### **What to ask for (over and above the usually requested items):**

- Notes of all persons who attended the scene in any capacity.
- All BWC footage.
- All witness statements specifying precisely where they were located at the time of the collision
- Identification of all equipment used for analysis including, where applicable, calibration certification.
- Identification of all software used in the investigation.
- Identification of all reference materials consulted.
- Details of all tests conducted at the scene.
- Copies of all photos and videos taken at the scene and elsewhere, e.g. vehicle examination.
- Copies of all CCTV footage obtained.
- Copies of all dashcam footage obtained.

## Committals

- Be aware of the changes brought by the *Justice Legislation (Committals) Act 2025* for persons charged after 28 December 2025.
- Is a committal even possible? If the collision occurred in circumstances that relate wholly or partly to a charge for a sexual offence, family violence, stalking or homicide no committal is possible. (s123)
- If a committal is available, the Form 32 needs to be very carefully drafted.
- S119 requires the accused to identify for each witness
  - Each issue for which leave to cross-examine is sought
  - The reason why, in the interests of justice, the witness should be cross-examined on that issue
  - Why the accused is of the view that the reasons are substantial reasons.
- When drafting your Form 32 have regard to s124(4) as amended.

## Questions

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