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Collecting Evidence: The Basics of Accident Reconstruction

What is an accident reconstruction?

The purpose of an accident reconstruction is to determine what actually happened in the moments leading up to, during and following an accident. An accident reconstruction prepared by an automotive engineer recreates a piece of history by showing vehicle locations each tenth of a second preceding, during and after impact as well as the direction of travel of the affected vehicles and their respective speeds. In order to re-create this moment in time, the engineer collects all the data pertaining to the vehicles involved in the accident: their conditions prior to and following the accident and evidence of damage to the exterior, mechanical components and interior compartment. After measuring skid or gouge marks, sight or visibility lines, road-surface conditions, points of impact and the vehicles' points of rest at the accident site, the engineer will turn to the statements of participants and witnesses to examine their versions of the event. All the disparate pieces of information, evidentiary and anecdotal, must be evaluated, weighed and factored into a series of mathematical calculations to detail the precise sequence of events.

The challenge for claims staff is often determining what files merit expert input and what files can be processed quickly with the evidence at hand. Take a look at the accident investigation organizer supplied below for the basic tools to start the analysis. Visit **www.prtassoc.com** and click the Tech Ref icon for additional analytical tools (requires a password).

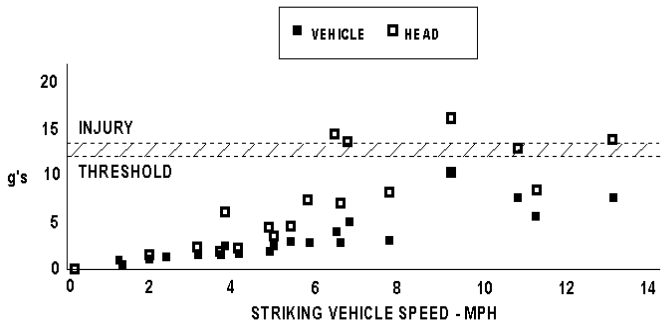
ACCIDENT INVESTIGATION ORGANIZER

Collect:

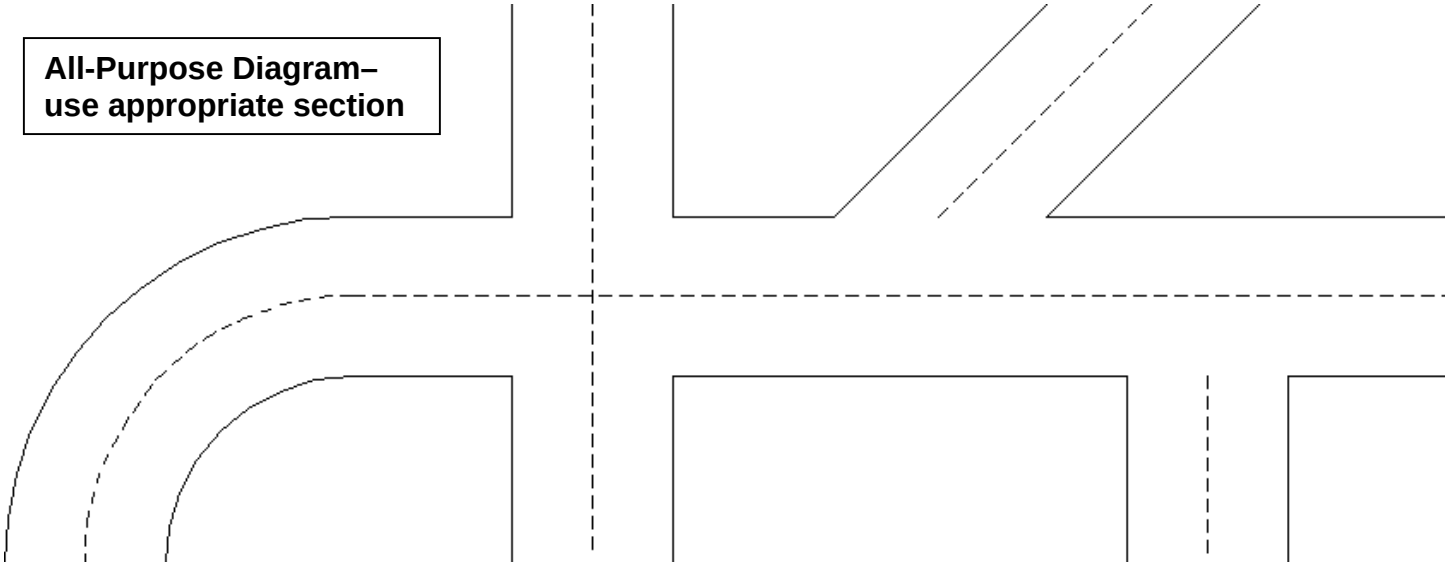
- Accident Date, Time, Location
- Police Report Number, Officer, Phone, Photos
- Coroner's Report Number, County of Death, Phone
- Fire Report Number, Fireman, Phone
- Photos of Scene, Vehicles
- Statements of Insured, Claimant, Witnesses
- Medical Bills
- Insured & Claimant Vehicles Yr/Make/Model
- License Plates, States
- Drivers' Licenses and Driving Records
- Appraisals
- Repair Orders

And . . .	*for soft tissue claims*
Seat Types	Bench, bucket, high-back, low-back?
Headrest Position	Down, up, integral, none?
Seat Condition	Firm, loose, broken?
Injured Party	Height, weight, age, sex, pre-existing injuries?
Direction of Gaze	Over shoulder or straight ahead?
Restraint	Lap belt only, shoulder harness, airbag, none?
Photographs	Seats, position of injured party sitting in vehicle. Exterior views under bumpers, damage close-ups.

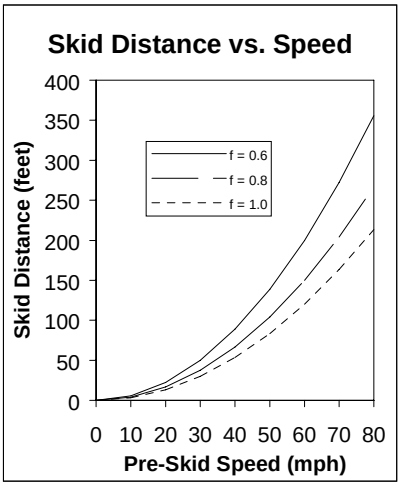
Acceleration of Rear-Ended Vehicles

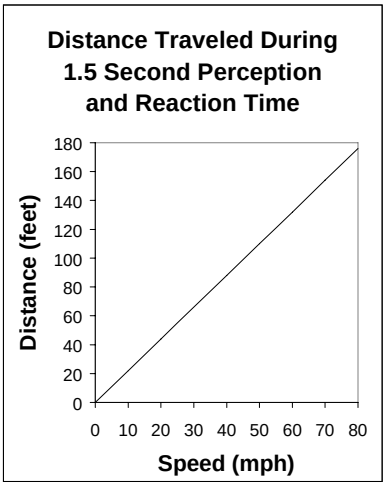


All-Purpose Diagram–
use appropriate section



COEFFICIENTS OF FRICTION OF VARIOUS ROADWAY SURFACES								
DESCRIPTION OF ROAD SURFACE	DRY				WET			
	< 30 mph		> 30 mph		< 30 mph		> 30 mph	
	From	To	From	To	From	To	From	To
PORTLAND CEMENT								
New, Sharp	0.80	1.20	0.70	1.00	0.50	0.80	0.40	0.75
Traveled	0.60	0.80	0.60	0.75	0.45	0.70	0.45	0.65
Traffic Polished	0.55	0.75	0.50	0.65	0.45	0.65	0.45	0.60
ASPHALT or TAR								
New, Sharp	0.80	1.20	0.65	1.00	0.50	0.80	0.45	0.75
Traveled	0.60	0.80	0.55	0.70	0.45	0.70	0.40	0.65
Traffic Polished	0.55	0.75	0.45	0.65	0.45	0.65	0.40	0.60
Excess Tar	0.50	0.60	0.35	0.60	0.30	0.60	0.25	0.55
GRAVEL								
Packed, Oiled	0.55	0.85	0.50	0.80	0.40	0.80	0.40	0.60
Loose	0.40	0.70	0.40	0.70	0.45	0.75	0.45	0.75
CINDERS								
Packed	0.50	0.70	0.50	0.70	0.65	0.75	0.65	0.75
ROCK								
Crushed	0.55	0.75	0.55	0.75	0.55	0.75	0.55	0.75
ICE								
Smooth	0.10	0.25	0.07	0.20	0.05	0.10	0.05	0.10
SNOW								
Packed	0.30	0.55	0.35	0.55	0.30	0.60	0.30	0.60
Loose	0.10	0.25	0.10	0.20	0.30	0.60	0.30	0.60
METAL GRID								
Open	0.70	0.90	0.55	0.75	0.25	0.45	0.20	0.35





California Expert Witness Guide published by the CEB (Continuing Education of the Bar) recommends early retention of experts for the following reasons.

§7.5 Advantages of Early Retention of Experts (pages 145-147)

1. **Evaluating claims and defenses—**Give defense counsel ammunition for a motion for summary judgment or a lower settlement figure.
2. **Selecting theory of liability or defense—**Formulate a defense in accord with the scientific principles as well as the requisite legal elements.
3. **Educating the lawyer—**Help counsel quickly acquire a highly selective education on a technical subject.
4. **Conveying information about other similar cases—**Advise counsel of past or pending cases involving the same issues.
5. **Suggesting other experts—**Suggest other experts who may be helpful in related areas of expertise.
6. **Identifying other experts—**Know the "competition" working for the opposition.
7. **Examining tangible evidence and physical locations—**Examine the real evidence connected with the case.
8. **Identifying potential defendants or cross-defendants—**Determine if all potentially blameworthy defendants are named, so if necessary, counsel can amend the complaint.
9. **Preparing discovery requests—**Assist in drafting interrogatories, document production requests, and requests for admissions to pinpoint areas of inquiry and help counsel determine what is relevant to the case.
10. **Preparing witnesses—**Assist in preparing witnesses by predicting likely areas of inquiry and anticipating sensitive areas. (Experts can be deadly in helping depose the opposition's expert.)
11. **Responding to discovery requests—**Assist in responding to interrogatories and other discovery requests.

A thorough and honest accident reconstruction is a very cost-effective tool providing a rational and factual understanding of an accident in order to:

Deny A Claim—If the employee, product or insured was not at fault, then the truth is the best weapon in defending spurious claims or lawsuits.

Pay A Claim—If the insured was at fault, paying a claim is far less expensive than costly legal fees and bad faith awards.

Negotiate—If there is some liability, but not as much as the claimant's attorney would like to think, use the strength of the facts to negotiate the best-possible settlement.

Avoid Litigation—Or, if possible, win if you must litigate.

The money you spend to document the facts supporting your decision is

ALWAYS LESS THAN THE COST OF LITIGATION.

Indicators Suggesting Accident Reconstruction
If . . .
⇒ there is a serious bodily injury or wrongful death.
⇒ a claim has been filed for a significant amount of money.
⇒ the police report doesn't fairly address all of the accident factors.
⇒ there is a high potential for litigation.
⇒ you suspect there is a vehicular mechanical failure or a roadway defect.
⇒ you suspect there is possible fraud or arson.
⇒ subrogation would recoup a significant amount of money.
⇒ there is a potential for bad faith exposure.

Other Common Issues:

Accident Reconstruction: Are there issues concerning vehicle speed, visibility or mechanical failures?

Brakes: Was the vehicle recently serviced? Is there a history of brake trouble?

Tires: Was it a blowout or a tread/belt separation? Was the tire damaged before or after the collision?

Heavy Equipment: Were the proper operating procedures followed?

Fuels and Oils: Is there an allegation of contamination?

Airbags/Seatbelts: Were restraints used? Are there injuries allegedly caused by the restraints?

Highway Design: Was a nearby construction zone an issue? Was there proper signage?

Fire/Arson: Are there indications of an electrical versus fuel-fed fire?

Metallurgical Analysis: Was the failure due to fatigue, or was it caused by an impact?