



RCIP: A new approach to road collision investigation

Rail Accident Investigation Seminar, 10 Nov 2021.

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RAIB & RAC Foundation



Contents


- Background
- RCIP
 - Work streams
 - Methods
- Key points
- Next steps
- Questions?



RCIP Background

- Road Collision Investigation Project
- Objective: To establish whether there is a business case for putting more resource into the investigation of road crashes, based on a comparison with other sectors (e.g Rail, Air, Marine)
- DFT funded, managed by RAC Foundation.
- Due to complete and report to Govt in April 2022.

www.racfoundation.org December 2017



Towards an Accident Investigation Branch for Roads?

Steve Gooding, Director, RAC Foundation

Mobility • Safety • Economy • Environment

Who's involved?



Department for
Transport &
National Highways
(Commissioners)



RAC Foundation
(Grant Recipient &
Project
Management)

RCIP Project
Steering board



Local police force
RCIP managers



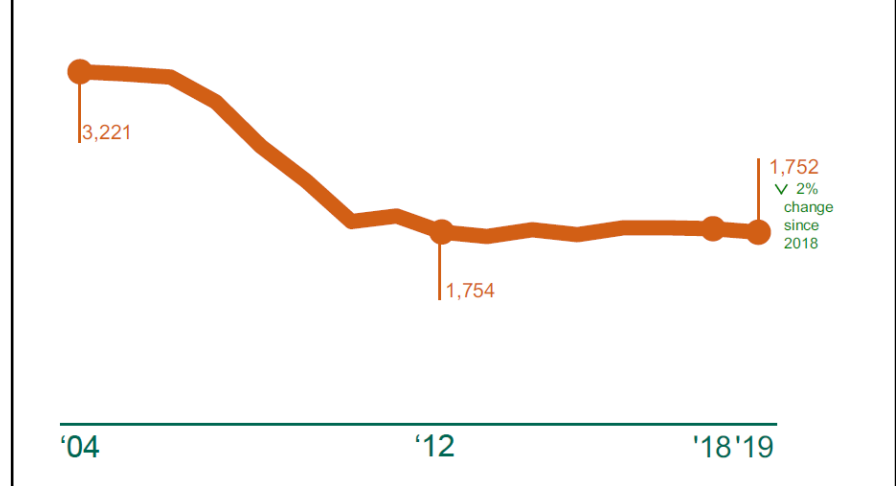
Local police force
RCIP analysts



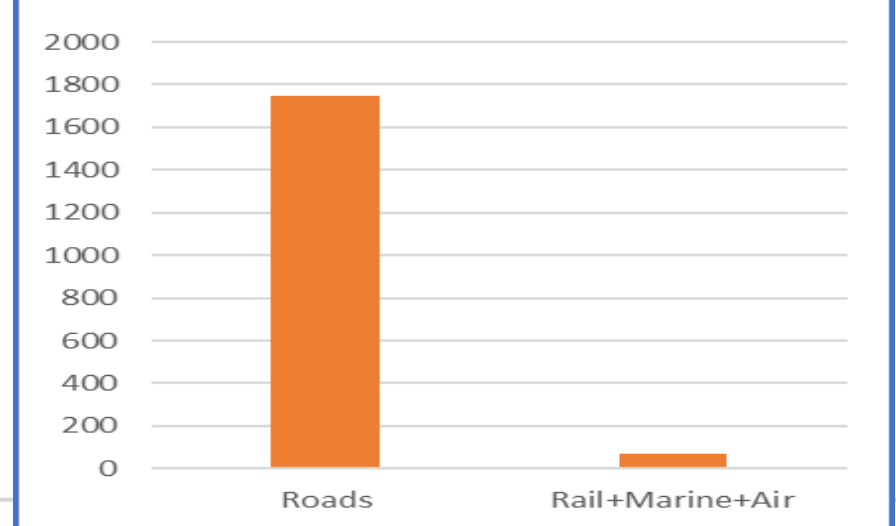
Is there a need?

- 153,158 casualties (fatal 1,752, serious 25,945, minor 125,461) in 2019.
- High cost of road collisions.
- New technologies (ADAS, EVs, AVs).
- No dedicated body to independently investigate road collisions and make recommendations.
- UK is behind the curve.

Chart 1: Fatalities in reported road accidents: GB, 2004-2019



Deaths 2019



RCIP work streams

In-depth investigations
37 Recent closed cases
Mainly fatal collisions

- Supporting studies**
- Methodology for RCIP
 - Road risk and countermeasures.
 - Police force area profiles.
 - Expert advice.
-
- International Review of road AIBs.
 - Legal powers, training, family liaison
 - Data availability analysis.
 - Cost of collisions.
 - Business case for a RCIB.

Aggregation
analysis

Safety
notices

RCIP Reports
Interim: July 2021
Final: Spring/summer 2022

RCIP investigations - overview

1. Evidence collection

- RCIP report template
- Police files
- Collision databases
- Area profiles
- Desktop research
- Road safety risk
- Expert advice



2. Analysis

- Active & latent factors
- Observations
- Confidence levels
- Further enquiries
- Accimaps



3. Recommendations

- Accimap format



4. RCIP report

- Not published.



5. Aggregation analysis

Evidence collection

- RCIP report template
- Police files.
- Databases.
- Police force area profiles.
- Desktop research.
- Road safety risk
- Expert advice



Road Collision Investigation Project

Case Study
(Area) (Number)

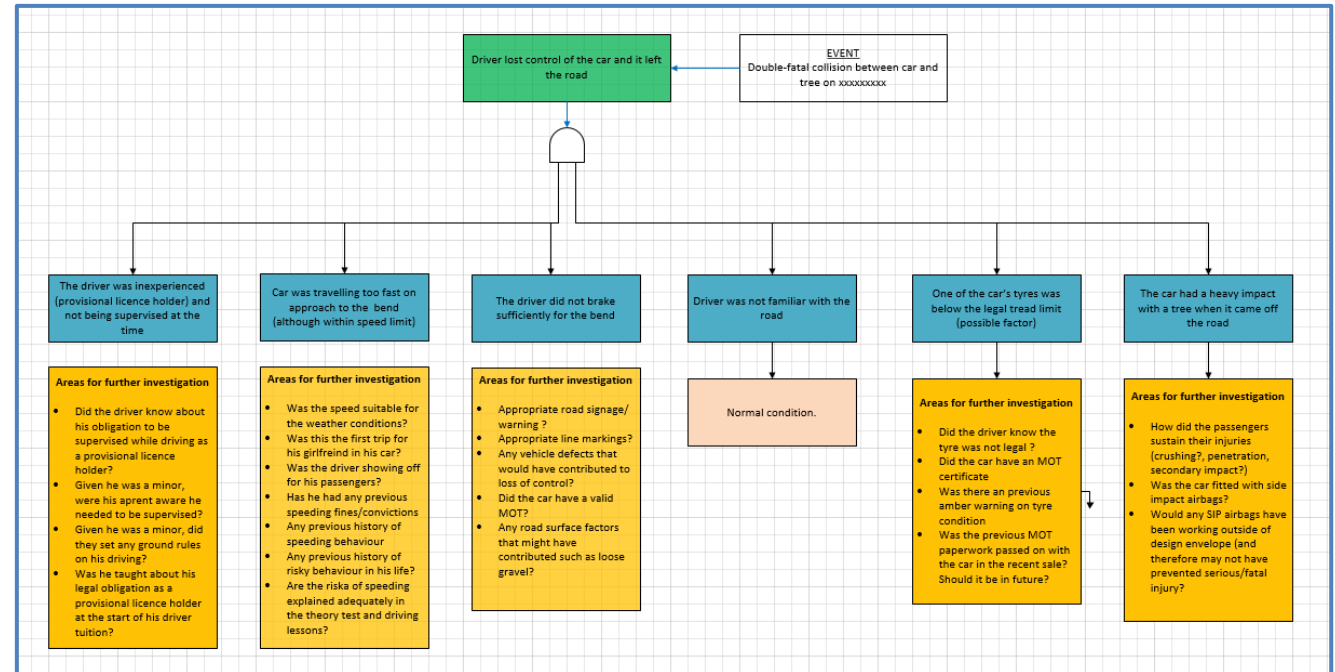
Version

Contents

1. Introduction.....	3
2. Summary of Incident	4
3. Scene maps, diagrams or photographs	5
4. Sequence of events	6
5. Consideration of factors.....	7
5.1 Road: Layout, Design & Condition.....	7
5.1.1 Road Surface.....	7
5.1.2 Road Markings.....	7
5.1.3 Street Furniture & Signage	7
5.1.4 Collision History.....	8
5.1.5 Star/Risk ratings.....	8
5.2 Environmental Factors	9
5.2.1 Vegetation	9
5.2.2 Wildlife	9
5.2.3 Weather.....	9
5.2.4 Road Contaminants	9
5.3 Vehicles	11
5.3.1 Use of vehicle	11
5.3.2 Maintenance & roadworthiness.....	11
5.3.3 Safety Equipment	11
5.3.4 Telematics	12
5.3.5 Regulations.....	12
5.4 Drivers	13
5.4.1 Driver/Rider History	13
5.4.2 Driver Medical	13
5.4.3 Driver Distraction	14
5.4.4 Driver Impairment.....	14
5.4.5 Driver Speed	14
5.4.6 Driver Seat Belt.....	14
5.4.7 Driver Dangerous or Careless Driving.....	15
5.4.8 Driver Fatigue	15
5.5 Rider PPE (if applicable).....	16
5.5.1 Helmet.....	16
5.5.2 Clothing	16
5.5.3 Gloves.....	16

Analysis (1)

- Causal analysis
- Active & latent factors
- Observations
- Confidence levels
- Further enquiries

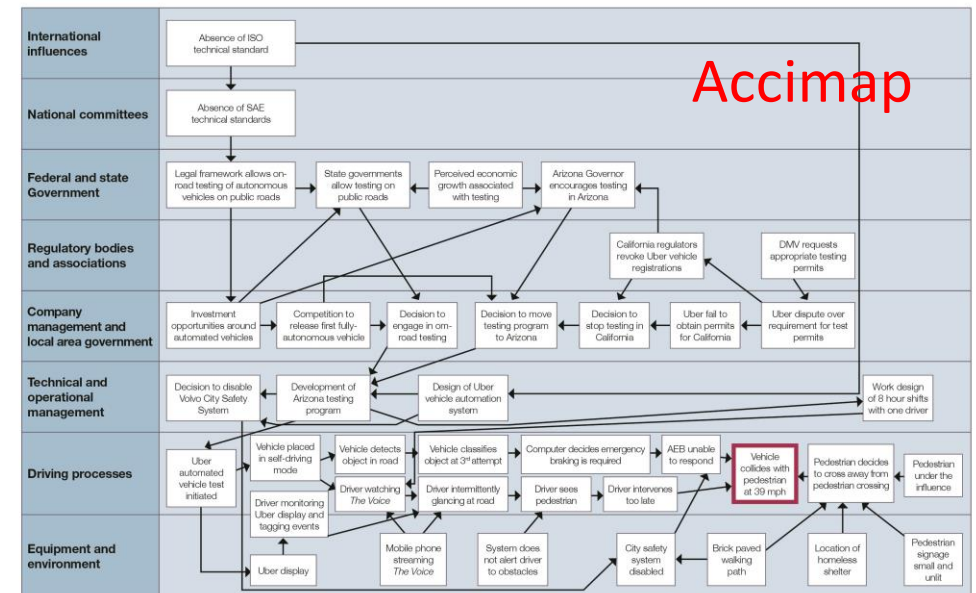


Analysis (2)

- Actor maps and Accimaps.
- Further evidence beyond police information from research, RCIP studies, expert advice.
- Strength of the evidence diminishes at higher levels.
- Power of aggregation
- Still needs systematic causal analysis to get lower levels of Accimap right.



Source: Author's own



Source: Author's own

Recommendations - AcciMap based format

- Recommendations to close out each active & latent factor, & observation.
- May have multiple recommendations at different system levels to close out a factor/observation.
- Approach pushes investigation towards considering higher system levels.
- Majority of RCIP recommendations fall at level 3 (Central Govt).

System level	Relevant active/latent factor or observation	Recommendation Number	Recommendation intent	Action
1. International influences				
2. National committees				
3. Central Govt.				
4. Regulatory bodies & Associations				
5. Local Govt & company management				
6. Technical & operational management				
7. Driving processes				
8. Equipment & environment				

Aggregation

- 37 in-depth RCIP investigation reports.
- Currently being reviewed and aggregated by Prof. Neville Stanton using the AcciMaps.
- Methodology based on approach in the “The big picture on accident causation...”
- Objective is to establish key recommendations arising from the project and will feed into the final RCIP report.



The big picture on accident causation: A review, synthesis and meta-analysis of AcciMap studies

Paul M. Salmon ^{a, d, e}, Adam Hulme ^a, Guy H. Walker ^{b, d}, Patrick Waterson ^c, Elise Berber ^a, Neville A. Stanton ^{a, d}

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<https://doi.org/10.1016/j.ssci.2020.104650>

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Highlights

- AcciMap is arguably the most popular accident analysis method.
- We reviewed and synthesised 23 published AcciMap studies.
- We identified 5587 contributory factors spanning 79 contributory factor types.
- We found a set of contributory factors that often play a role in major accidents.
- Further applications of our contributory factor classification scheme are encouraged.

Key points

1. RCIP investigations have yielded a lot of new safety learning in a short time and with a small team, which suggests there is great potential for a road AIB (with adequate powers) to identify significant safety improvements in the future.
2. Accimap approach suits road collision investigations. Needs to start with a systematic causal analysis to provide a solid foundation and structure.
3. Causal links at higher system levels are always difficult to evidence, but aggregation across multiple investigations (e.g thematic investigations) could address that problem and provide sufficient weight to recommendations.

Next steps

- The next major step is already happening.
- On 28 Oct, DfT announced consultation on the creation of a Road Collision Investigation Branch (RCIB).
- Consultation closes 9 December 2021.
- Final Govt. decision on creation of a RCIB to follow.
- Final RCIP report Spring/Summer 2022.

News story

Government launches consultation on Road Collision Investigation Branch

Consultation proposing creation of a Road Collision Investigation Branch (RCIB) to thematically investigate road accidents released.

From: [Department for Transport](#) and [Baroness Vere of Norbiton](#)

Published 28 October 2021



A new investigation branch dedicated to learning lessons from road traffic collisions, including those involving self-driving vehicles, could be established under plans being unveiled by the government today (28 October 2021).

The Department for Transport (DfT) has launched a [consultation on proposals to set up a Road Collision Investigation Branch \(RCIB\)](#), which would operate much like the similar independent bodies that already exist for air, maritime and rail accidents.

An RCIB would carry out thematic investigations and probe specific incidents of concern to establish the causes of collisions and make independent safety recommendations to help further improve road safety across the country.

THANK YOU

- More information about RCIP:
<https://www.racfoundation.org/collaborations/road-collision-investigation-project>

Questions ?

Road Collision Investigation Project (RCIP)



About this project

In June 2018, the RAC Foundation received almost half a million pounds of government funding to [pilot new ways of investigating road crashes](#).

The £480,000, plus match funding from [National Highways](#), is being used to develop and trial, in a number of police force areas, a different approach to identifying and understanding common themes and patterns that result in death and injury on the public highway. The insight could then help shape future policy making.

The priority of police forces is to investigate crashes with the intention of identifying criminal culpability and bringing individuals to account. This project seeks to establish whether there is a business case for putting more resource into the investigation of road crashes adopting the approaches used to collision investigation in other modes (Rail Air & Sea) and safety



Crash investigation funding Q and A



Models and methods for collision analysis - Neville Stanton - March 2019



RAC Foundation RCIP Feasibility Study - TRL - July 2019



International Review of Road Collision Investigation Approaches - December 2020

