



TRL THE FUTURE
OF TRANSPORT

TRL's response to a call for evidence on

Creating a Road Collision Investigation Branch (RCIB)

Submitted Decemer 2021



Department for Transport

Introduction

The DfT funds several in-depth collision investigation studies, data sets and digital systems, including the Road Accident In-Depth Study (RAIDS) programme, STATS19, and the Collision Reporting and Sharing System (CRASH).

These, coupled with information from Forensic Collision Investigation (FCI) reports and Prevention of Future Deaths (PFD) reports, have informed research into the causes of collisions. However, the DfT acknowledges that more can be done to further improve our understanding of collisions and which interventions are most effective in eliminating them.

In autumn 2018, the government-funded Road Collision Investigation Project (RCIP) was launched. It was designed to examine the causes of collisions and assess whether there is a business case for the creation of a Road Collision Investigation Branch (RCIB).

This paper is a summary of TRL's response to the 2021 call for suggestions about which powers an RCIB could possess, as well as how it might operate.

Overall, TRL supports the creation of a RCIB, to independently investigate road traffic collisions to improve road safety in GB

Future road safety improvements are contingent on effective road collision prevention strategies, which can only be formed based on an independent and robust evidence base. Building on existing road collision data sources, including the world-leading but localised information from the Road Accident In-Depth Studies (RAIDS) programme, a RCIB will fill the significant gap in knowledge created when the lessons from tragic collisions that are occurring today are not being fully learned and applied, resulting in preventable deaths and serious injuries on our roads.



Expanding the scope of RCIB

TRL recommends that an RCIB should have additional responsibilities beyond those proposed

- **To investigate collisions, including attending the scene** where this will provide valuable insight into their causes. Adding the word "investigating" is important because it reflects the core role and purpose of the RCIB. We recommend that a proportion of road collisions should be investigated at the discretion of the Chief Inspector of Road Collisions, with these being selected based on the potential for learning and future harm prevention.
- The typology and characteristics of collisions to be investigated by the RCIB will be informed by analysis of emerging trends and by 'gap analysis' techniques designed to prioritise areas for further investigation. Having the ability and requisite **powers to investigate the causes of a sample of collisions** (including those involving Automated Vehicles) will accelerate the dissemination of timely and effective safety learning.
- **To monitor the real-world operational safety performance data of Advanced Driving Assistance Systems (ADAS) and Automated Vehicles (AVs) as they become a reality on our roads.** This will capture data on near-miss events and help to identify the factors that may lead to similar events or potentially ones where the consequences would be far worse.
- **To access and use all the available intelligence** to inform the identification of the often complex causes of road collisions, including existing research studies (e.g. RAIDS, National Highways Fatals Research).



A global centre of excellence

TRL recommends the RCIB be established as a GB centre of excellence for the investigation of road collisions

As a centre of excellence for the investigation of road collisions, the RCIB would provide access to multi-disciplinary experts, capable of the forensic reconstruction of road collisions to determine their causes and the causes of the resulting injuries and deaths. This will include and not be limited to expertise in accessing and validating electronic data (including in-vehicle data, such as from Event Data Recorders, telecommunications, CCTV and infrastructure-based data), biomechanics (mechanisms of injury), human factors and behavioural science, road and vehicle design engineering, road and vehicle standards and regulations, enforcement, and driver training, testing, and standards.

This depth and breadth of knowledge will become increasingly important as GB's vehicle fleet changes with increasing Advanced Driver Assistance Systems (ADAS), electrification, automation and significant connectivity and data.

It is worth considering whether it would be appropriate and reasonable for the RCIB to assist the police/other authorities in the determination of the facts surrounding an unusual collision, for example involving an Automated Vehicle or next generation of Advanced Driver Assistance System. This would be where specialist knowledge and skills would be required to determine the sequence of events prior to the collision. Care would be required to ensure the independence of the RCIB investigation.

Having a central group of experts (RCIB) with clear terms of reference would ensure the continual improvement of road collision investigations and the associated data in the UK, accelerating the potential learning and subsequent prevention measures to be applied.

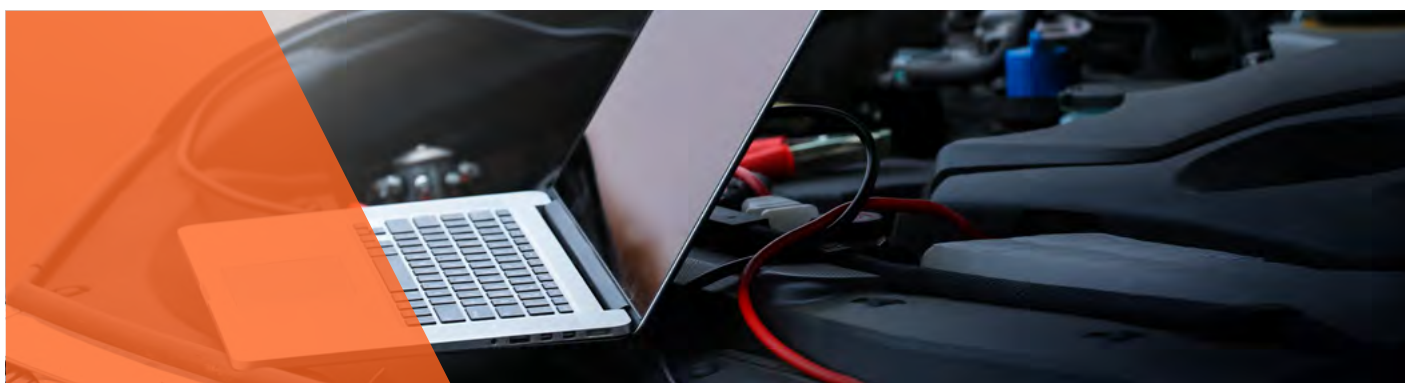
TRL also believe that the RCIB should be the centre for the interpretation of the data on road collision investigations and research for GB, and that it should promote international harmonisation with regard to setting the appropriate standards.



Greater investigative powers

TRL recommends that a RCIB has two additional investigative powers above and beyond those of existing accident investigation branches (AIBs)

1.
The power to interview individuals and/or organisations and collect confidential information, and the power to capture electronic data (including from, but not limited to, in-vehicle or from the OEM or Tier 1 supplier, or from a road authority e.g. CCTV). This data is often key to understanding the causes of collisions.
2.
The power to require manufacturers to co-operate in the provision of safety-relevant in-vehicle data and/or infrastructure/ITS data following a collision or other safety-critical event. Without this power it will be more difficult to ascertain whether vehicle systems and infrastructure behaved as intended, and if they did or did not, how they can be improved. This is an increasingly important issue as we recognise that drivers, road users, vehicles and the road and infrastructure are all part of one system. Therefore, effective safety improvement recommendations will be likely to follow safe-systems theory.

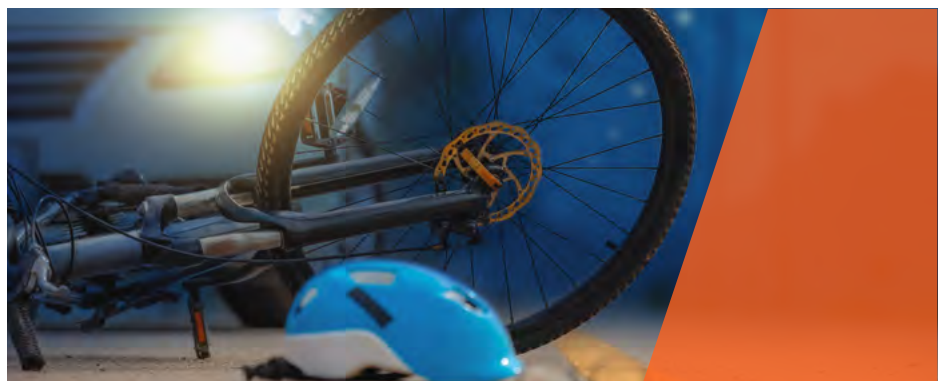


The value of individual incident investigations

TRL objects to the proposal for an RCIB to focus primarily on thematic investigations drawing on evidence across multiple cases, rather than on individual incidents

This is because there are significant gaps in our knowledge regarding the causes of collisions and effectiveness of prevention strategies. This means that **all collisions are potentially of significant public interest.**

TRL recommends that the future Chief Road Collision Investigator must develop a prioritisation scheme for selecting which collisions to investigate, based on a combination of return on investment for given investigations versus potential learning and outcomes.



Additional suggestions in pursuit of Vision Zero

TRL proposes modelling the RCIB based on the KPI of benefit to cost ratio.

To model the RCIB based on the KPI of benefit to cost ratio. TRL has calculated conservative estimates for the casualty benefits that could be expected over a five-year period from launching an operational RCIB. There is a time lag between the investigation and analysis of collisions and the subsequent recommendations being implemented. The assumptions regarding annual reductions in KSI are therefore 0% in year 1, 0.5% in year 2, 2% in year 3, 3.5% in year 4 and 5% in year 5. A range of predicted annual KSI casualties were used.

The outcome of this exercise predicts, over a five-year period, a reduction of fatalities of between 170 to 189, and serious casualties of between 2,440 to 2,706. The monetary value of the KSI prevention would be between £857 million and £952 million over 5 years.

TRL is willing to share our analysis for review and scrutiny. Further, as we plan for a trajectory that takes us towards zero fatal and serious road casualties as soon as practicable, a RCIB will be essential to ensure this is an achievable aim. The consequence of

this is that the effectiveness of an RCIB with respect to casualty reduction will improve over the medium term (5–15 years) and depending on the cost of the countermeasures, it is likely that the benefit to cost ratio will remain highly positive. Assuming casualties are reduced over this period, the base level of casualties on our roads from 2037 will be significantly lower than today and it is more difficult to predict the cost benefits over the longer-term (2037–2050).

TRL promotes continued investment in world-leading in-depth accident analysis



To continue to build on the best in-depth independent road collision investigation experience, for example the Department for Transport funds the UK's Road Accident In-depth Studies (RAIDS). This world leading research programme identifies collision scenarios, including contributory factors relating to road users, the vehicle and road, which lead to collisions of varying severities. Further it identifies how people are injured in road traffic collisions, the injuries they sustain, and how these correlate to vehicle characteristics and highway design features. It establishes the extent to which a range of safety related measures have reduced the risk of injury to

road users involved in collisions, and it identifies measures to reduce further the risk of collisions and injuries (in terms of vehicle design and safety, the road environment and traffic management and human factors).

RAIDS must be a key part of the data, along with STATS19 (Crash), police forensic reports and other data, that is used by the RCIB to both prioritise collisions to investigate and to help develop the required recommendations and strategic, often system-based interventions, to drive down road casualties.

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