The independent investigation of transport accidents

RAIB’s perspective

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Introduction

I will cover:

- who the Rail Accident Investigation Branch (RAIB) are
- and what we do
- the importance of independent accident investigation.
- common characteristics of investigations by the UK’s Accident Investigation Branches (AIBs)
- would such a model work in other areas of transport safety?
Why was the RAIB established?

- The public inquiry into the 1999 Ladbroke Grove accident recommended that an independent organisation should be established to investigate rail accidents:
  - This should be independent of government, safety regulators, police and all industry parties.
- UK legislation:
  - Railways (Accident Investigation and Reporting) Regulations 2005.
We independently investigate railway accidents to improve railway safety, and to inform the industry and public.

Part of the DfT for administrative purposes, but we act independently for investigations. This functional independence is critical to our role.

We investigate in line with our statutory duties and powers.

We publish reports detailing our findings.

We make recommendations to relevant end implementers.
RAIB’s scope - Mainline, metros, trams, channel tunnel and heritage rail
The site phase is the tip of the iceberg – the issues that lie beneath take much more time.

In pure safety terms, you can learn as much from smaller incidents and near misses as a major one – harder to get people to take remedial action though!

Many of the accidents investigated by the RAIB were not predicted as credible by any formal techniques applied by designers, maintainers or operators.

Most investigations reveal how combinations of factors combined to create a dangerous event – including human factors.
Independent Accident Investigation: insights (2)

- Investigations highlight the vulnerability of existing risk mitigation measures and assist the design of new measures.
- Investigations provide valuable intelligence to those with the responsibility for safety.
- Investigations demonstrate to those affected and wider society that action is being taken and lessons will be learnt.
Summary of Accident:

- Level crossing with half barriers and road traffic signals (wig-wags) between Gainsborough & Doncaster.
- 12:31 hrs – sunny day.
- Lincoln – Doncaster train (cl.153) collided with Volvo car.
- Car driver injured, car passenger (4-year old child) killed.
View of road approach 45m from wig wag signals (2 secs at 49 mph)

Photograph taken at the same time on the following day, under near-identical conditions.

Witnesses on site when photo taken agreed that the flashing red lights were near invisible (and the lowered barrier difficult to discern).
Recommendations

- Replacement of all 36 W filament lamps with LED units.
- Processes for identifying level crossings with a significant risk due to sunlight obscuring lights.
- Development of a brighter LED unit.
- Improved maintenance of wig-wags.
History and characteristics of UK accident investigation

The Rail Accident Investigation Branch (RAIB) is one of three AIBs covering Air, Marine and Rail Accidents

The model for independent no-blame investigation by experts can be traced back to article 26 of the Chicago Convention on International Civil Aviation, 1944 (with a specific Annex for aircraft accident investigation adopted in 1951)
Characteristics of all AIB investigations (1)

1. Independence from industry, also prosecution and law enforcement bodies

2. The purpose of any investigation is limited to the improvement of safety – no blame is attributed, issues of liability are never considered

3. Investigations are undertaken by specialists (with inputs from industry and external experts)

4. Industry is obliged to notify certain types of accidents and incidents to the relevant AIB, and to provide certain types of safety data

5. AIBs have powers of entry and the right to seize evidence
6. AIBs have the right to carry out interviews of those who may be able to provide evidence – those interviewed must answer questions put to them (it is an offence to refuse to answer a question or to mislead an AIB inspector)

7. Witnesses are protected from ‘self-incrimination’ – statements made to AIBs are not shared with other agencies (except by order of a high court)

8. Collaboration, and consultation, with industry and external experts

9. Those involved in accidents are kept informed of progress and key issues
10. Although AIBs play no part in the prosecution process, they will **share most technical evidence** with others that have a duty to investigate (unless this is legally prohibited)

11. If requested by a coroner AIBs will **give evidence at an inquest**

12. The outcome of all AIB investigations are published in the form of a **report**

13. Where appropriate AIBs will make **recommendations** to improve safety by:
   - reducing the likelihood of a recurrence;
   - reducing the severity of an accident should it occur;
   - improving the emergency response; or
   - addressing any other safety issues.
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Could such a model work for highways?

- Top-level principles of independent, no-blame and specialist investigation are applicable to any mode.
- This approach can be applied to the analysis of individual accidents or larger data sets drawn from numerous investigations.
- A supporting safety system across the industry is needed – to turn learning and recommendations into action (eg RAIB/ORR/RSSB).
Infrastructure and regulation

- Many infrastructure owners, manufacturers, maintainers, and regulators.
- Numerous different parties (e.g., private motorists, highways authorities, commercial organisations).
- Many rules - that are not necessarily easy to change e.g., TSRGD, DMRB, Highway code.
- The sheer number of road accidents = massive data sets.
People and vehicles

- Diverse users of the highway - including vulnerable users - cyclists and pedestrians.
- Many amateur drivers – with no CPD or ongoing assessment.
- Newer and faster-changing “rolling stock” and rapid changes in technology.
- Culture: many road accident investigations (but not all) address questions of blame and liability.
Application of the model to road collision investigation

Base assumptions:

- Proportionality
- Sampling those cases where the potential for safety learning is highest.
- To be of value, investigations must be:
  - Independent.
  - Supported by suitable legal powers
  - Conducted by specialists/trained investigators.
  - No blame.
Thank you

Thank you for your attention.