



Rail Accident Investigation Branch

Testing and reconstruction in support of investigating PTI events

Rail Accident Investigators Seminar

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PTI events

- As well as falling through the gap between train and platform, people can become trapped in the train's doors and dragged or fall onto the track and be struck by a departing or arriving train.
- Station CCTV usually available, conversely dispatch CCTV is frequently not available
- Event reconstruction can be used where cameras used for dispatch not always recorded.
- Reconstruction can provide information that may be otherwise missing from, or inconsistent across, witness accounts.
- Images taken from reconstructions can be used in place of sensitive images of the actual event.



Systematic approach



- Setting objectives
- Methodology
- Proposal/consultation
- Data collection
- Analysis
- Communication

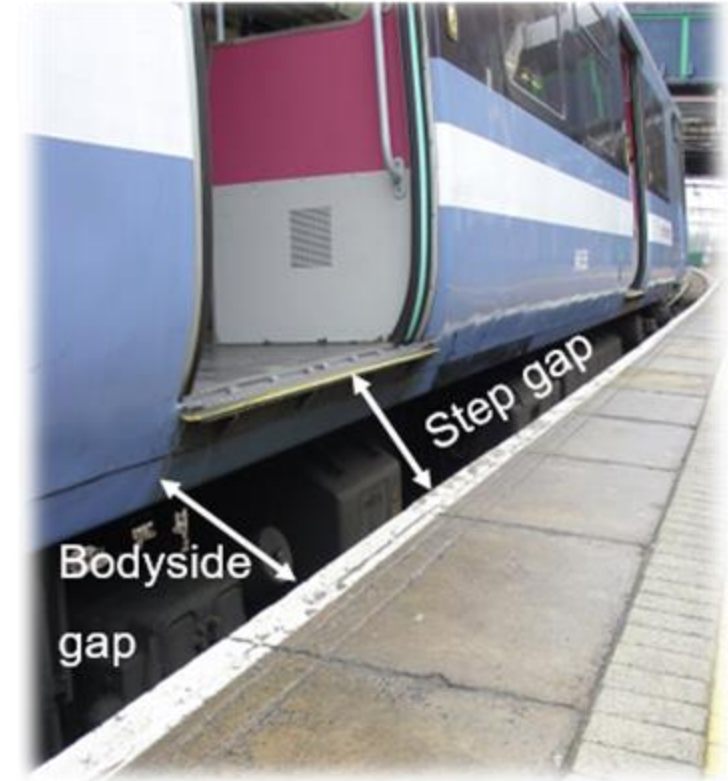
Setting objectives

- What are the reconstruction goals?
- What is the scope of the reconstruction, what cannot or does not need to be included?
- Is it assessing the effectiveness of a maintenance test (sensitive edge or interlock triggers) or recreating a specific accident scenario such as conspicuity on a dispatch monitor?
- Which interested parties should be included, who should be consulted on content and results?



Methodology

- Determine what resources will be required for both reconstruction and witnessing.
- Set goals to determine when testing/reconstruction tasks are complete.
- Set timescales and program tasks up to test day and for the reconstruction.
- Consider order of reconstruction tasks to avoid duplication, especially any tasks which may alter the state of evidence.
- What environmental conditions need to be met.
- What risks to competition might exist and how these could be mitigated by duplication, follow up tasks or substitution.



Proposal/preparation

- Share methodology with interested parties for peer review.
- Review challenges and incorporate changes/proposals where possible.
- Set timescales and allocate resources in anticipation of test day.
- Prepare testing documentation/data collection resources.
- Ensure all resources and stakeholders are in place and all are aware of the objectives and methodology.



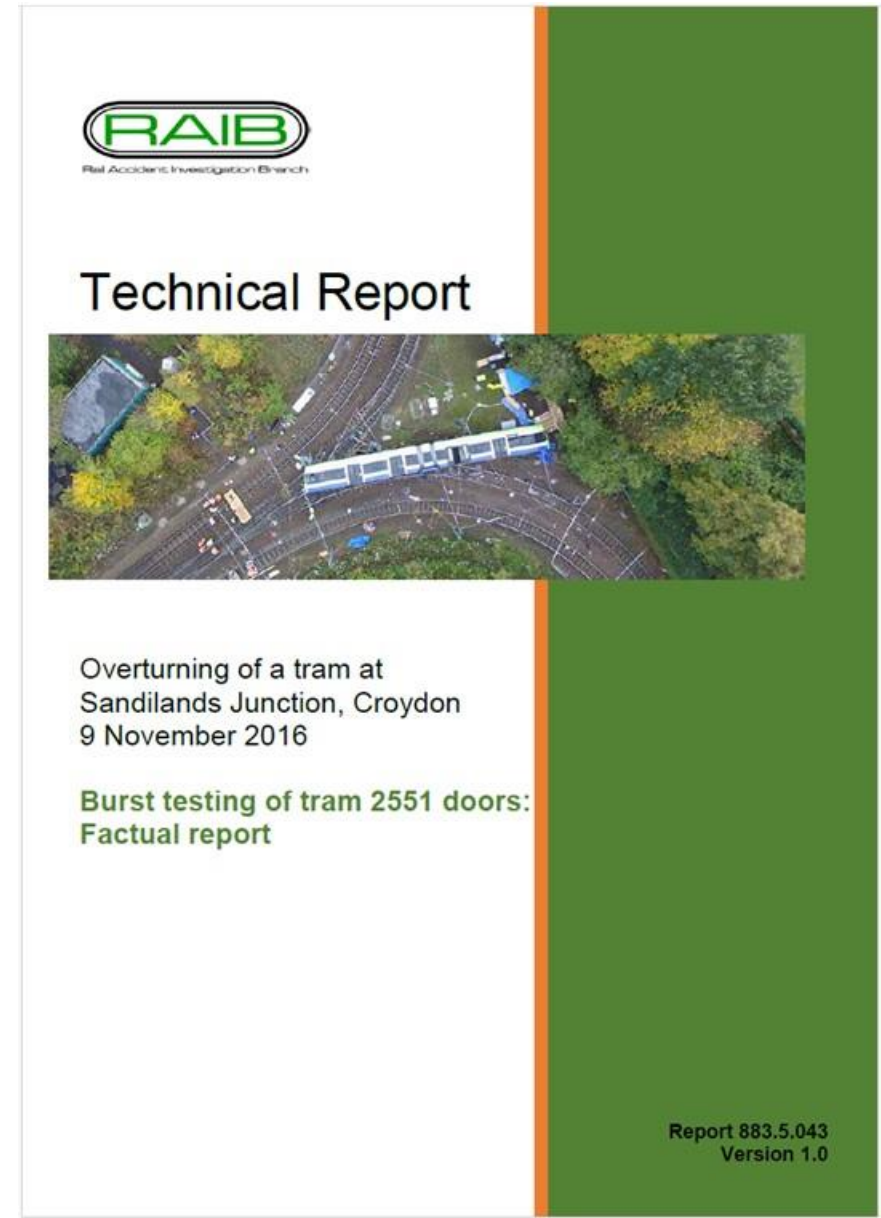
Data collection/analysis



- Allocate resources, everyone should know what will happen and when.
- All present should understand what is expected of them.
- Consider placement of observers for both safety and best evidence capture (avoid pictures with roaming observers in frame!).
- Correlate results against checklist of objectives to ensure completeness of tasks.
- Canvas attendees for any new testing/reconstruction tasks which may have arisen.
- Ensure all interested parties present concur testing is complete.

Communication

- Share results as determined by methodology, include any testing results.
- Document process undertaken, issues encountered, and changes made during the testing to stakeholders.
- Review lessons learnt from the testing and reconstruction for future use.



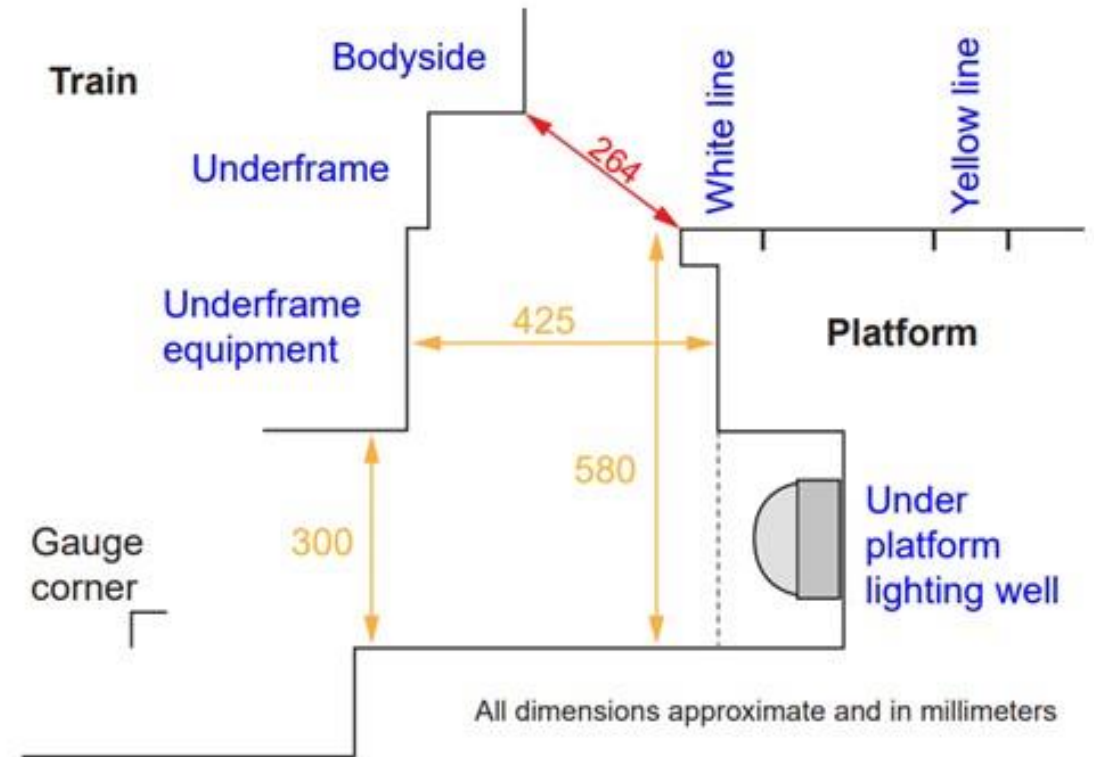
Case Study - Fatal accident at Waterloo LUL platform



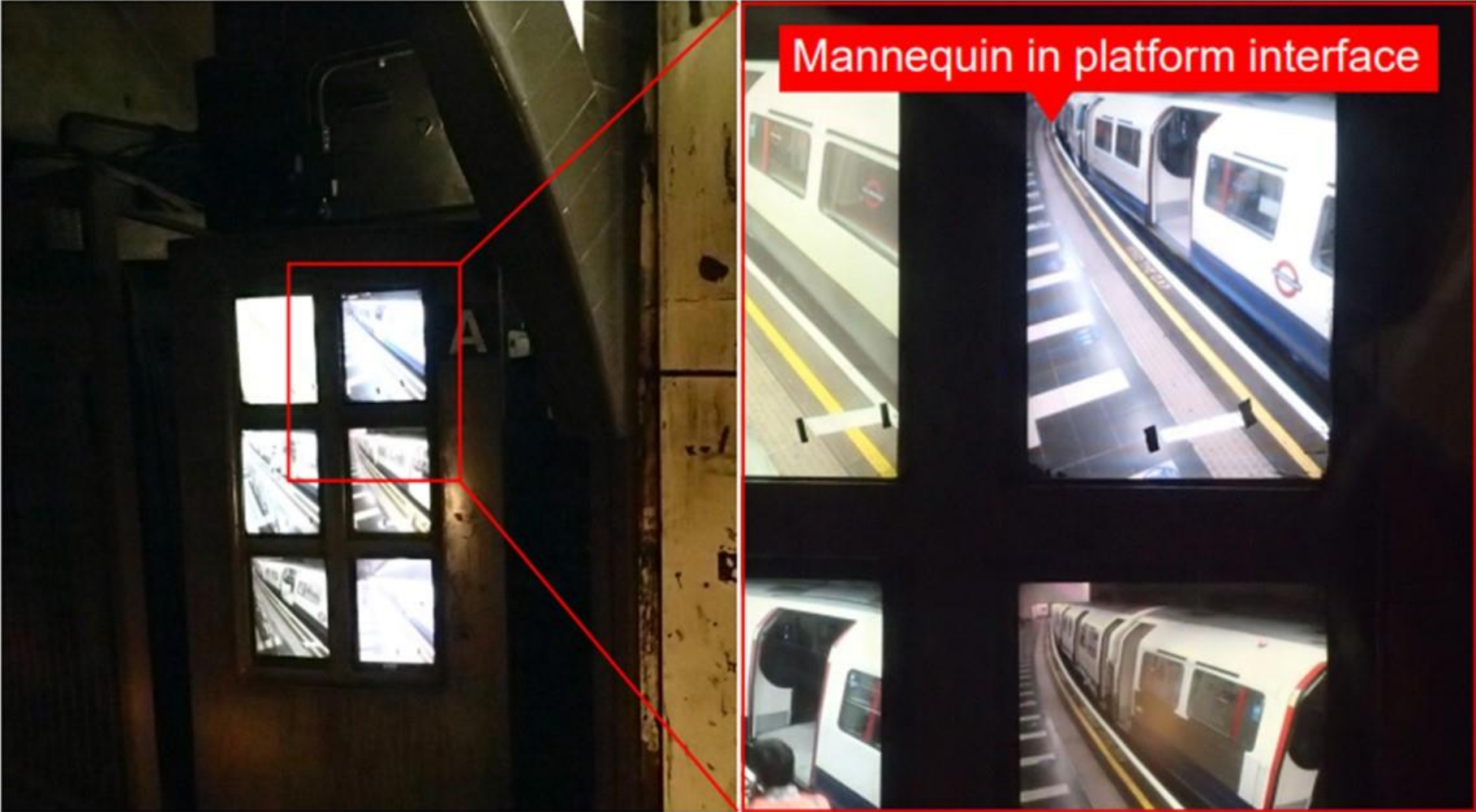
- Passenger fell into gap between platform and stationary train.
- Fallen passenger was not seen by other members of public or by train operator during dispatch process.
- Dispatch CCTV not recorded. Good coverage by station CCTV.
- Reconstruction undertaken to ascertain how visible fallen passenger was to train operator.

Objectives

- Photographic record of accident from TO perspective.
- Measure distances from TO to dispatch monitors.
- Measure platform/train interface.
- Measure sound levels in platform area.
- Determine sight lines from accident location to other doorways



Results



Results



Challenges

- Limited time for reconstruction during non-running period.
- Time required to bring train into platform and discharge/recharge traction current.
- Safety risk working in PTI gap.
- Number of attendees in relatively small platform area resulted in 'background roaming'.
- Station clock visible in report images.
- 'Mis-representive' colour of manakin.



Thank you

