

Rail Accident Investigation in the UK

PWI Lunch and Learn

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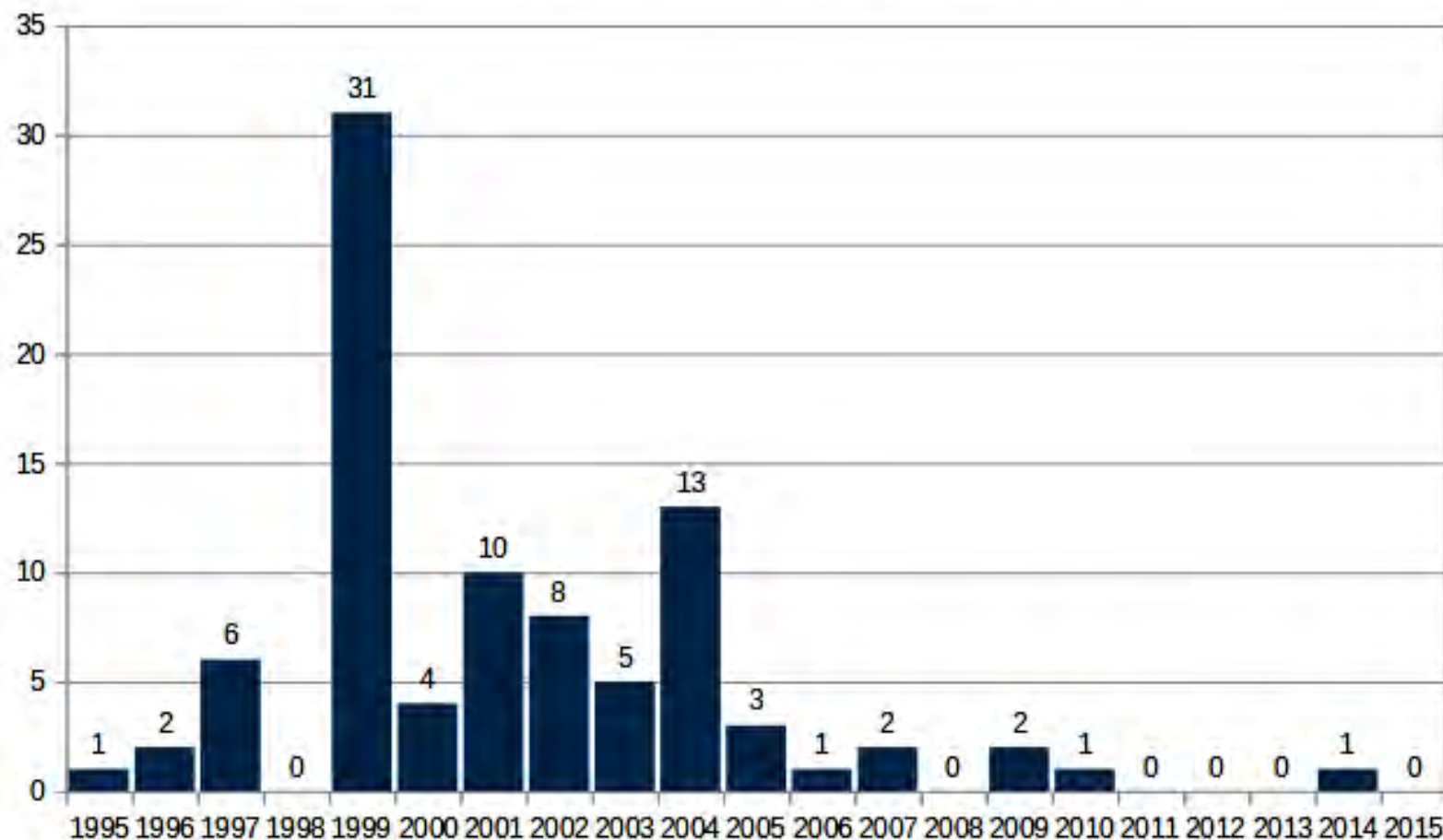
Wednesday, 26 January 2022

A difficult time for the railway industry...

- High profile accidents in

- Southall
- Ladbroke Grove
- Potters Bar
- Tebay
- Ufton Nervet
- Hatfield
- Great Heck
- Etc...

Deaths from accidents on UK railways & stations



Ladbroke Grove, Oct 1999 – Cause: SPAD
Outcome: head on collision (130 mph)
31 fatalities, > 500 injuries

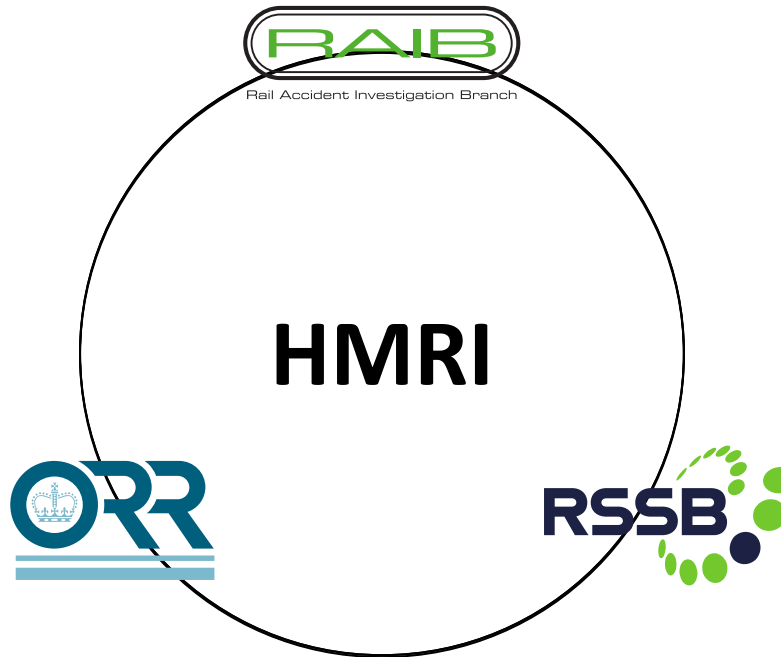


Lord Cullen's Report 2003 Railways and Transport Safety Act

Radical change in rail industry's
safety management

Accident Investigation
Safety Recommendations

Industry Regulator
Health and Safety
Performance
Economic



Standard Setting
Data Analysis
R&D

RAIB Purpose

- Investigation of accidents and incidents to **improve railway safety** and **inform the public**.
- Independent of all other parties.
- Does not establish blame or liability.



Geographical Coverage: All of Network Rail



Geographical Coverage – Trams and Metros



Geographical Coverage – Channel Tunnel and Heritage



What type of accidents are investigated?

The RAIB must, by law, investigate serious rail accidents which have an obvious impact on railway safety regulation or management, and involve a collision or derailment which result in, or could result in...

The death of at least one person

Serious injury to five or more people

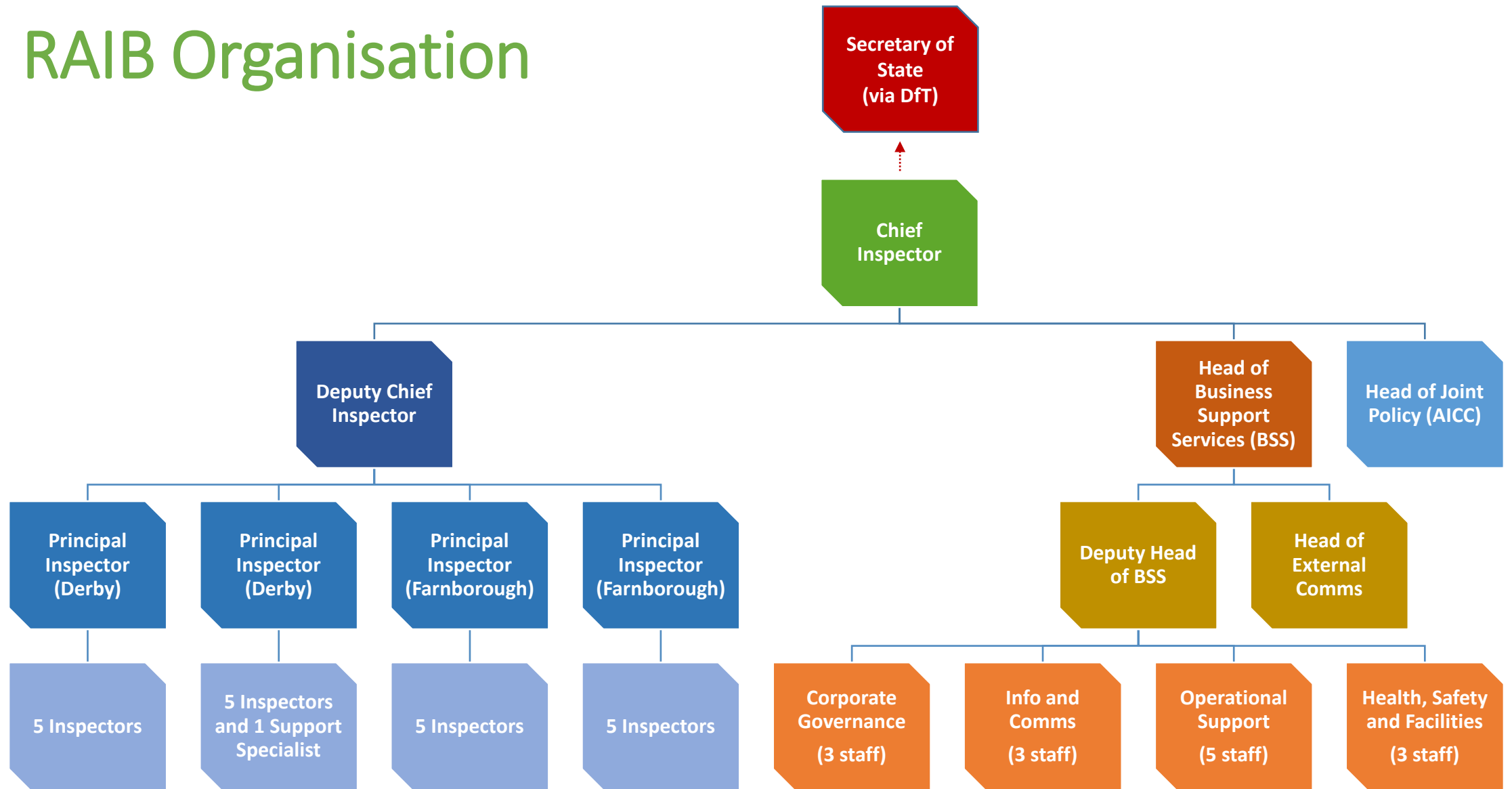
Extensive damage to rolling stock, infrastructure or the environment

Any other accident which, under slightly different circumstances, could have the same consequence

The RAIB will investigate other incidents at its discretion, based on:

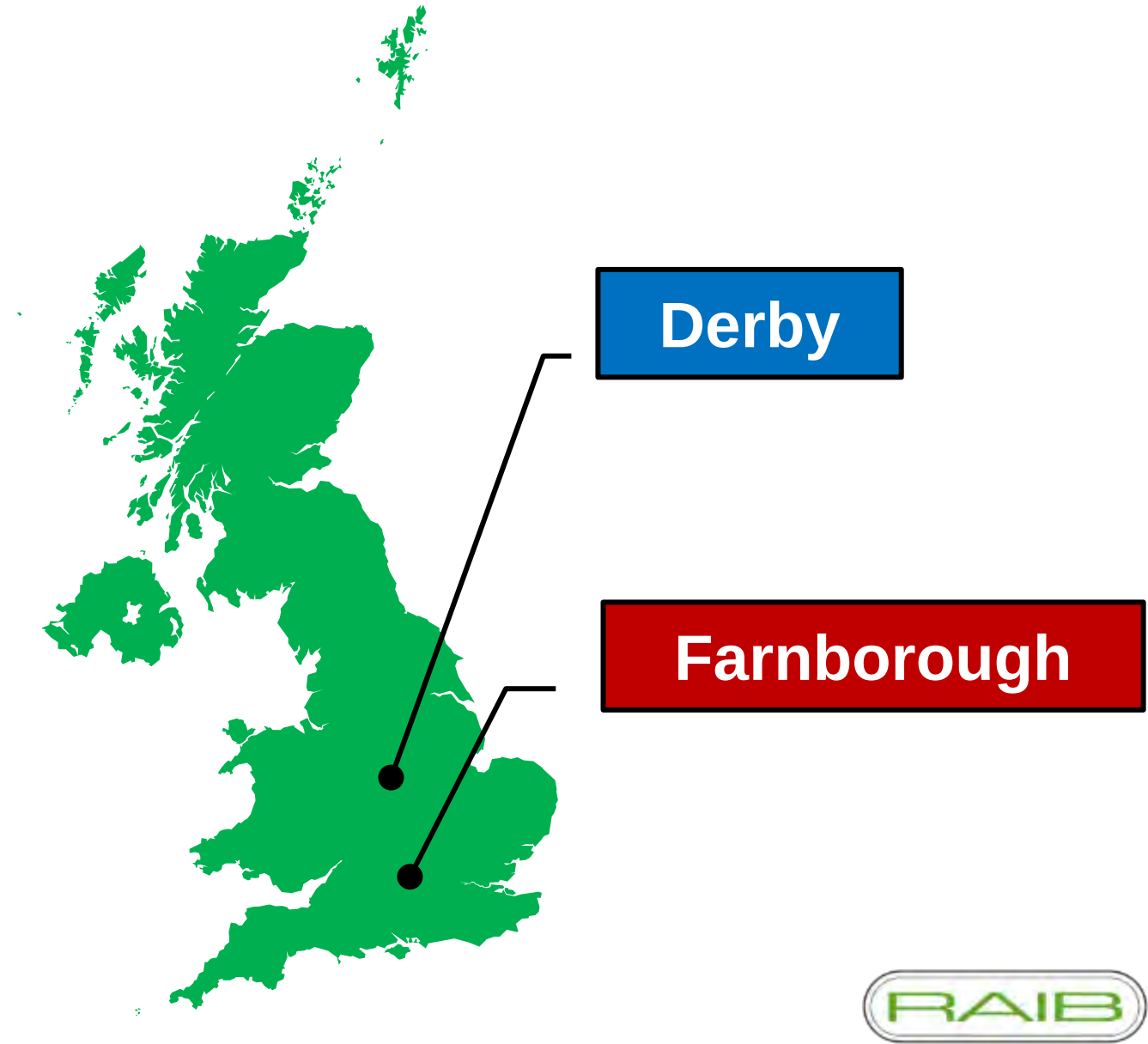
- How serious the incident is; and
- The likely safety lessons to be learned

RAIB Organisation



Where are we based?

- At least five staff on-call
 - 1 Duty Coordinator
 - 2+ Derby Inspectors
 - 2+ Farnborough Inspectors
- On-call 24/7, 365 days/year
- Travel by whatever means is appropriate.



RAIB Inspectors

- Most are ex-rail industry, but also from police, ORR, MoD and HSE.
- Wide range of underlying experience
 - Track
 - Signalling
 - Traction and Rolling Stock
 - Civil Engineering
 - Heritage
 - Human Factors
 - Investigation and Incident Management
- Extensively trained in investigation techniques
- Trained in evidence collection and analysis
- Trained to interview witnesses
- Family liaison
- An underpinning knowledge across the railway disciplines
- Know the right questions to ask!

RAIB Inspector's Powers

- Enter railway property
- Enter land adjoining the railway
- Enter any other land (if appropriate)
- Seize evidence
- Make records, take photos/videos
- Interview witnesses and compel them to answer
- Seize documents/records



Sources of Evidence (by no means exhaustive!)

- Post Mortem
- Medical/Injury Information
- Physical Evidence
- Level Crossing/Signalling data loggers
- Train OTDR (black box)
- Train FFCCTV
- Site photos (incl reconstruction of conditions)
- Site surveys (incl drone surveys)
- Track Measurements
- Witness accounts (drivers/crew/staff/public)
- Maintenance records
- Laboratory testing of equipment
- Brake tests
- Etc...



How do we decide what to do?

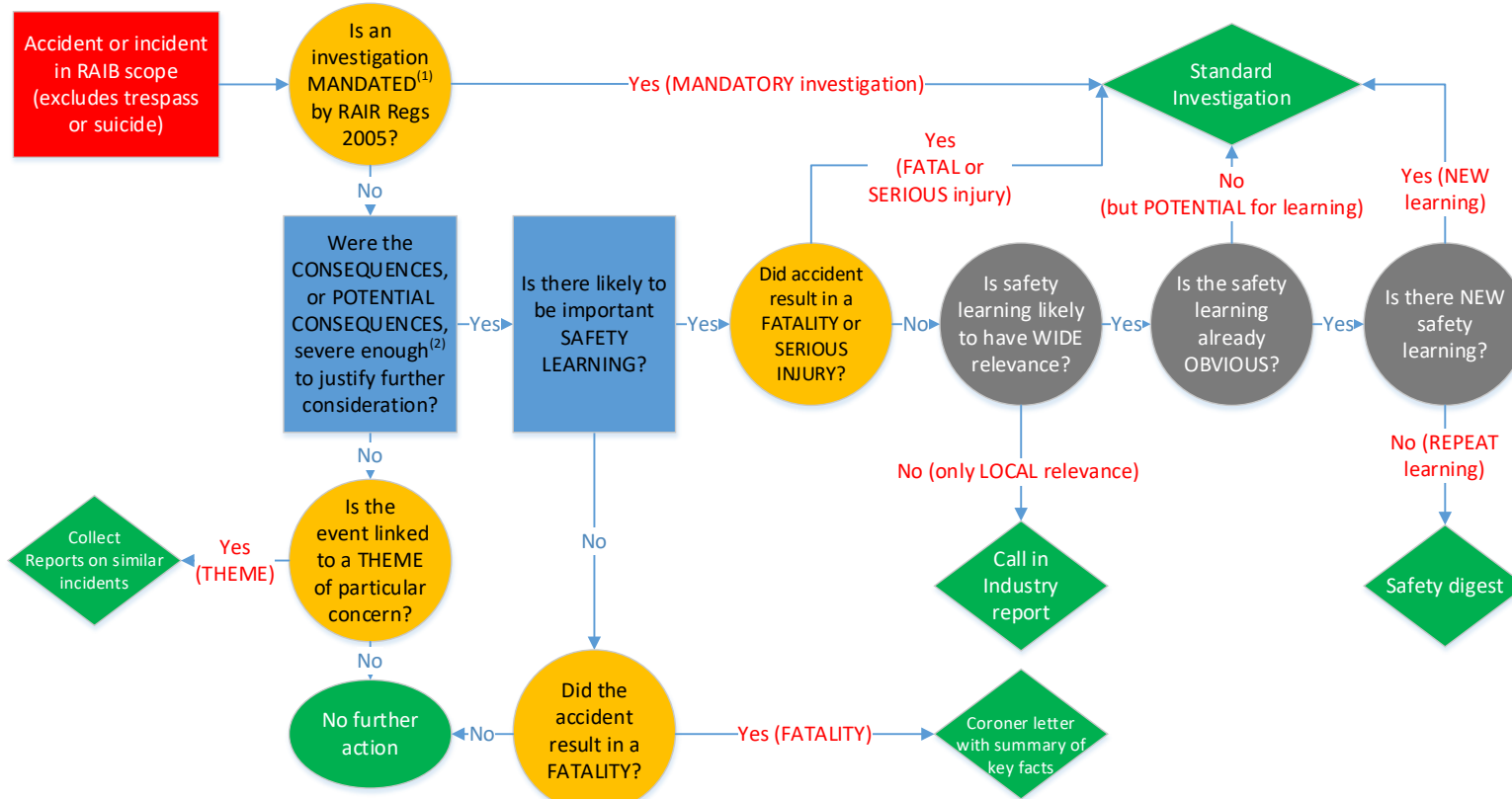


Selecting Investigations

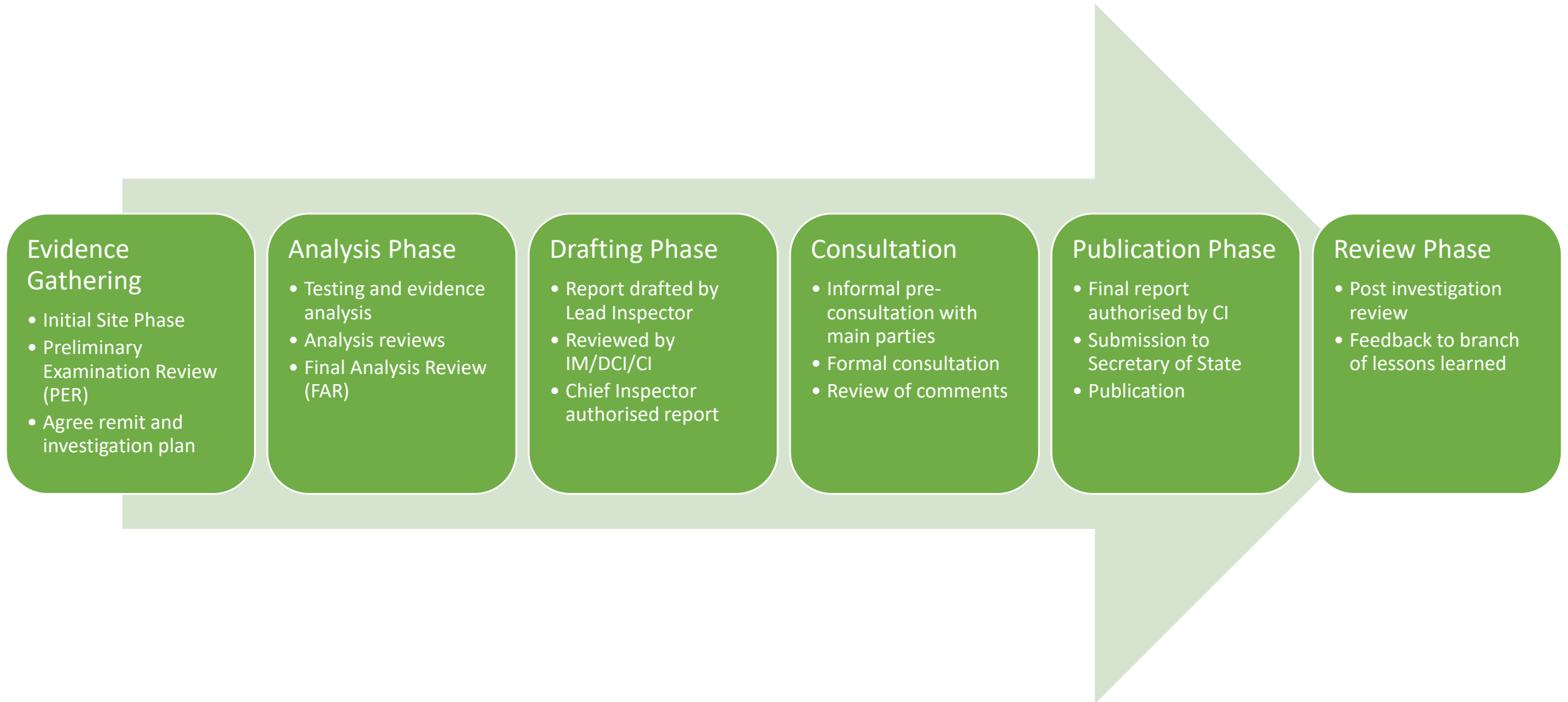
(August 2017)

⁽¹⁾ An investigation is mandated for a 'serious accident', namely an accident involving a derailment or collision of rolling stock which has an obvious impact on railway safety regulation or management of safety and includes such an accident that results in -
a) the death of at least one person;
b) serious injuries to five or more persons; or
c) extensive damage (assessed to be greater than €2m) to rolling stock, the infrastructure or the environment

⁽²⁾ Accidents with the following consequences, or potential consequences are to be considered:
a) moving train accident with fatality, serious injury, multiple minor injuries or significant damage;
b) potentially high risk train accidents, ie derailment on a running line, collision causing significant damage, significant distance runaway, discharge from a dangerous goods train; or
c) other high risk event, eg very serious SPAD, high risk WSF or catastrophic train failure



From site to report...



Output - Recommendations

- Produce recommendations to the industry
 - Responsibility for follow-up lies with the ORR.
 - The party who the recommendation is addressed to has a duty to implement, or provide justification if not.
 - We can raise concerns if we don't feel that something has been closed out as intended.



Current Investigations

26 11 2021	Collision with a tree and derailment at Balderton	Safety digest
24 11 2021	Collision between a tram and a pedestrian at Fleetwood Road	Investigating
31 10 2021	Collision between passenger trains at Salisbury Tunnel Junction	Investigating
21 10 2021	Collision between train and engineering trolley at Challow	Investigating
12 10 2021	Buffer stop collision at Enfield Town	Investigating
01 09 2021	Collision between a tram and a child cyclist near to Audenshaw tram stop	Investigating
19 08 2021	Collision and derailment of a freight train at Kisby user worked level crossing	Investigating
16 05 2021	Runaway of a mobile elevated work platform from Belle Isle junction	Investigating
05 05 2021	Signal passed at danger and near miss at Sileby Junction	Investigating
02 05 2021	Collision between RRVs at Ramsden Bellhouse	Investigating
10 04 2021	Derailment at Dalwhinnie	Investigating
13 03 2021	Buffer stop collision at Kirkby station	Investigating
06 03 2021	Track damage between Pencoed and Llanharan	Investigating
09 02 2021	Track worker struck by a train near Surbiton	Investigating
21 01 2021	Near miss at Coltishall user worked level crossing	Investigating
12 08 2020	Passenger train derailment near Carmont, Aberdeenshire - Interim report published 19/04/21	Consulting

Carmont
12 August
2020



Train derails after hitting a landslip

First and second carriage overturn

Fourth carriage remains attached to rear power car

Power car and third carriage fall down embankment

BBC

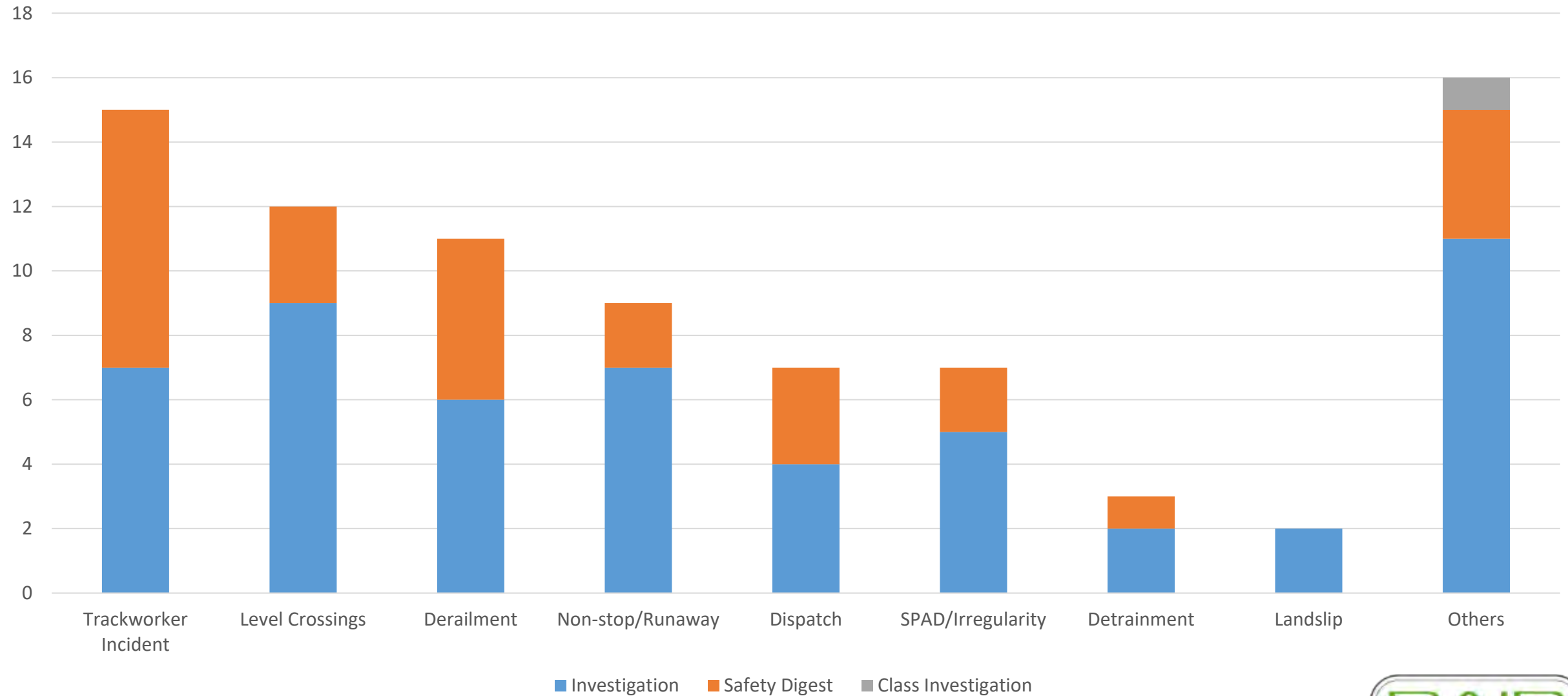


Morlais junction, Llangennech

26 August 2020



Recent Themes (Published reports 2018 – 2021)



Trackworker incidents and accidents

(Published since Jan 2017 and including ongoing investigations)

Llandegai Tunnel

Ynys Hir

Camden

Rowlands Castle

Sundon

Shawford

Surbiton

Peterborough

Dutton Viaduct

Roade

South Hampstead

Clapham (Yorkshire)

Kirtlebridge

Dundee

Wimbledon

Margam

Clapham Jn

Great Chesterford

Gatwick Airport

Pelaw (T&W Metro)

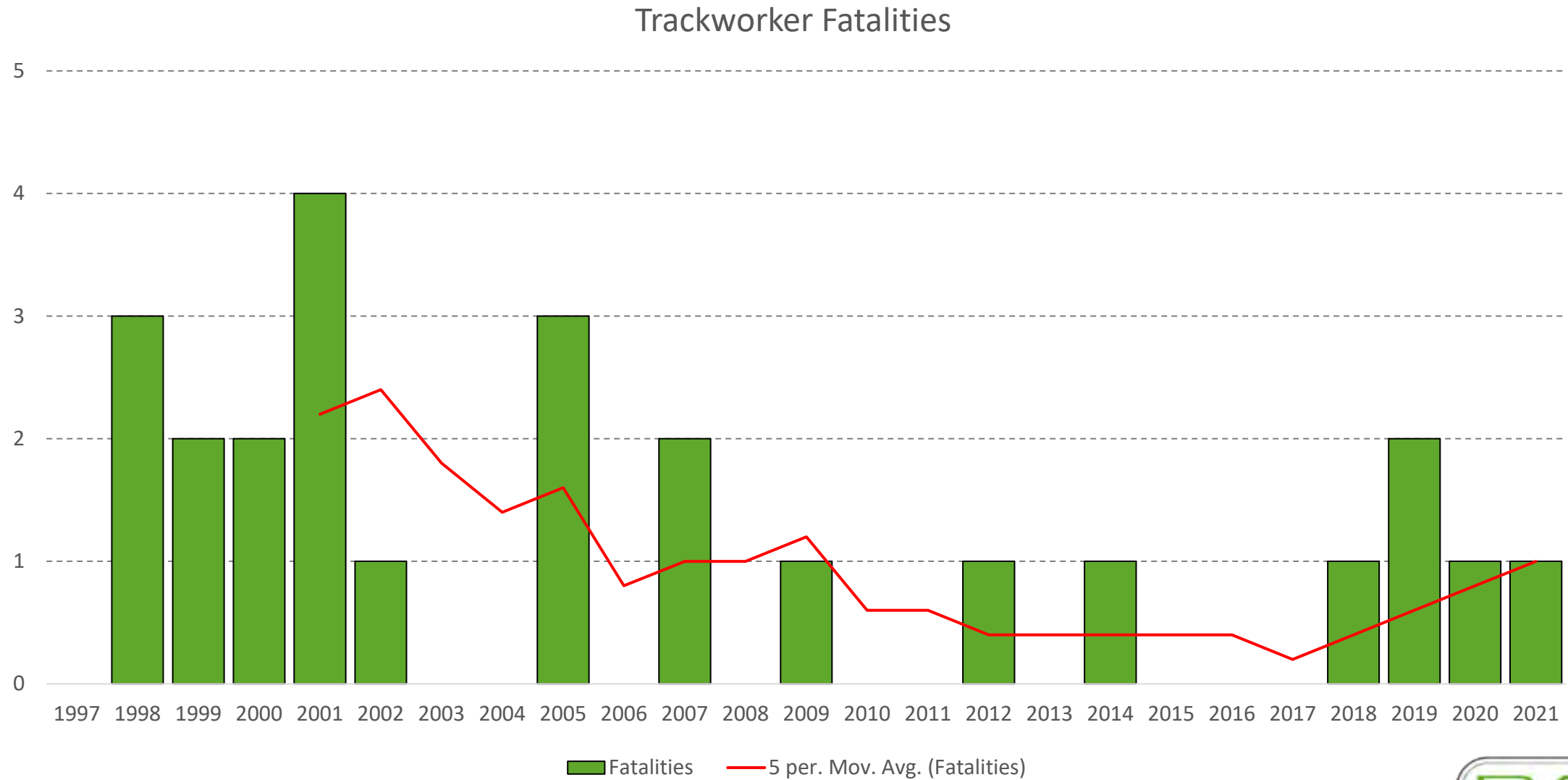
Ascot

Stoats Nest (#2)

Egmanton

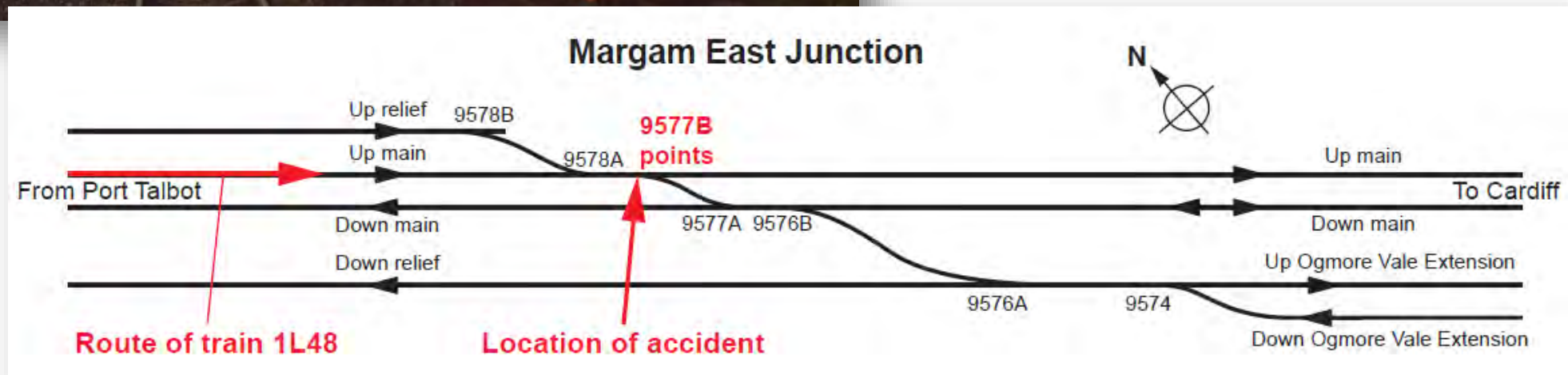
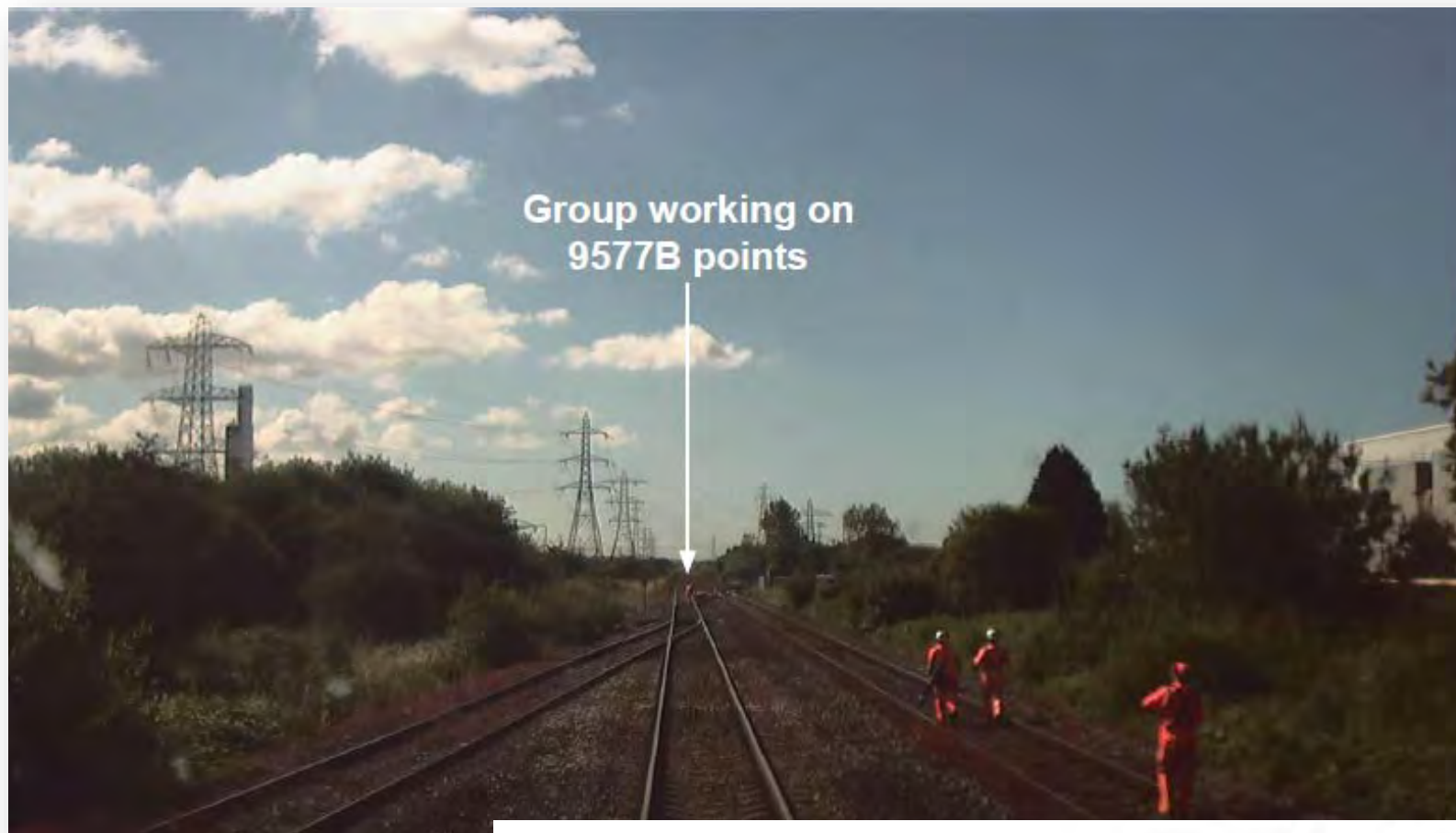
Surbiton

Recent Years



Margam

[RAIB Report 11/2020](#)



Passenger Train Interface



Waterloo



Eden Park

Buffer Stop Collisions



Kirkby (Merseyrail)

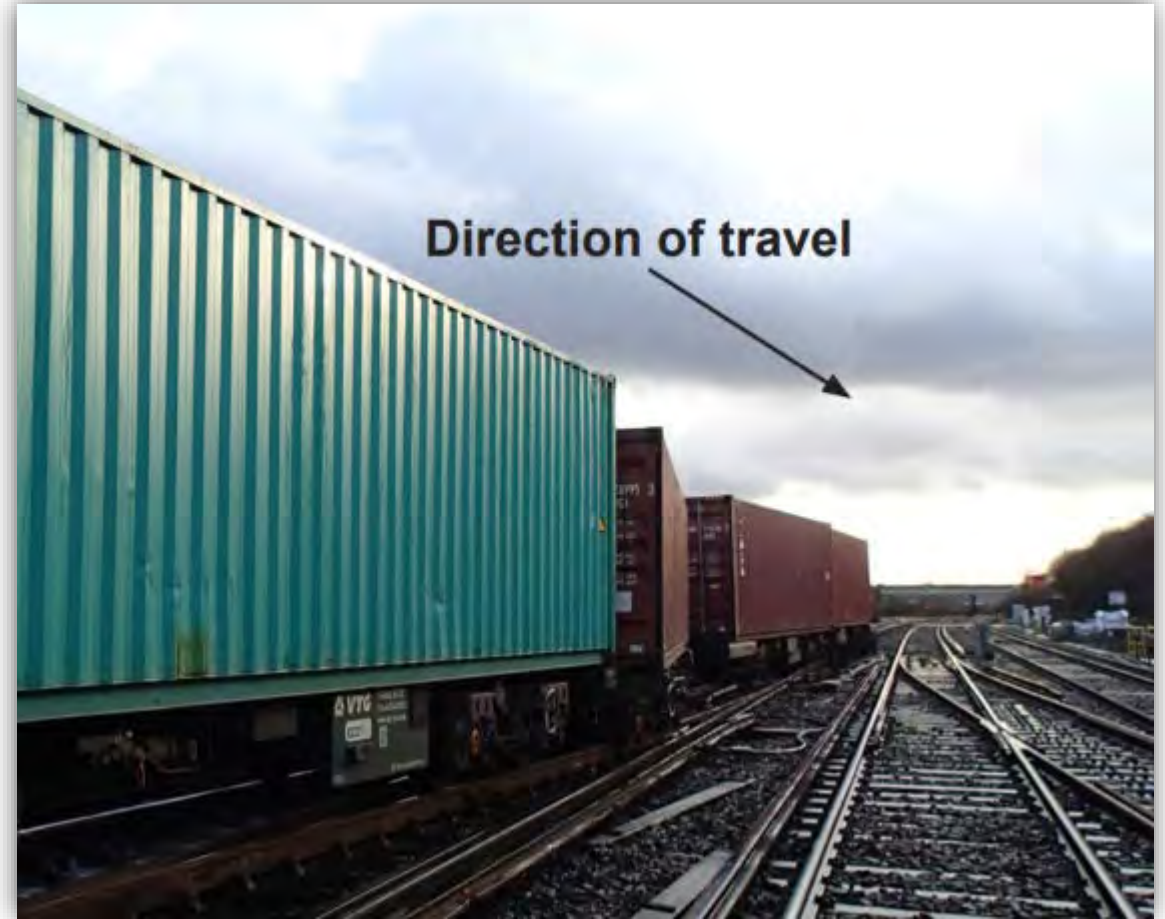


Enfield Town

Freight Train Derailments



Sheffield



Eastleigh

Level Crossings



Watford Landslip, Derailment and Collision





- Any questions?
- More information on all these incidents is available at raib.gov.uk, where you can also sign up for email updates and view all reports
- **jonathan.graham@raib.gov.uk**