

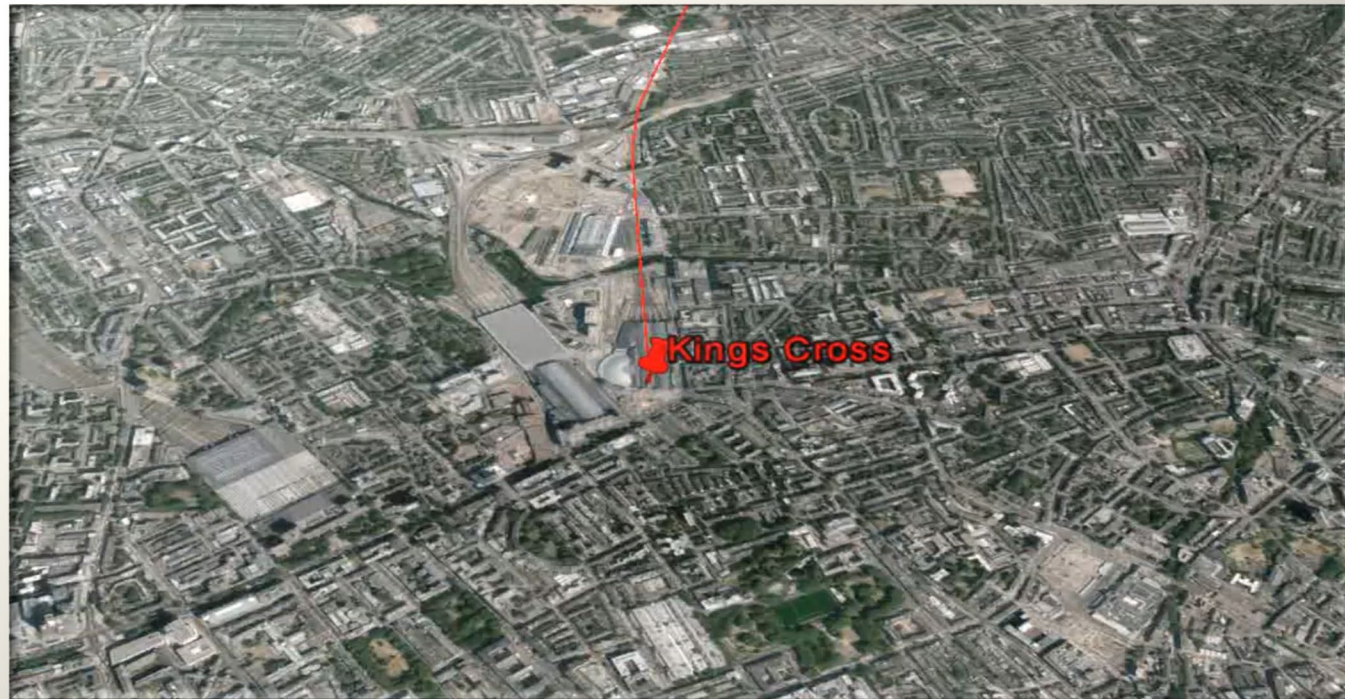
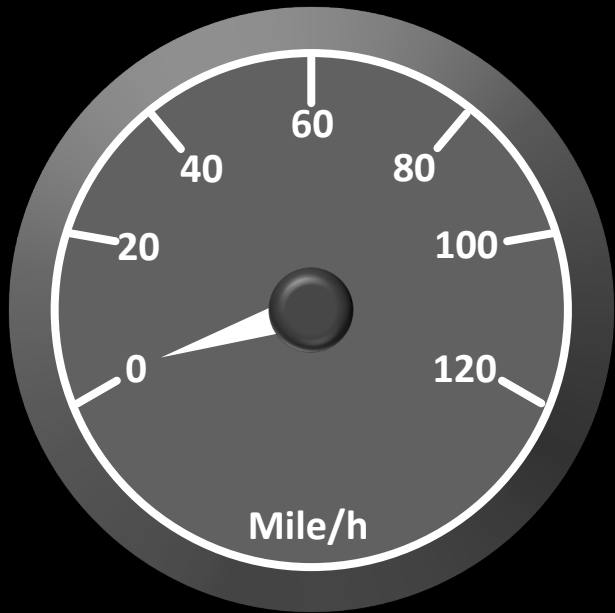
Greg Morse
Operational Feedback Lead, RSSB



Travelling by rail hasn't been easy recently – for any of us.
But now all Britain's rail companies are pulling together –
doing whatever it takes to return you to a national rail network you
can depend on.

Wednesday 17th October 2000

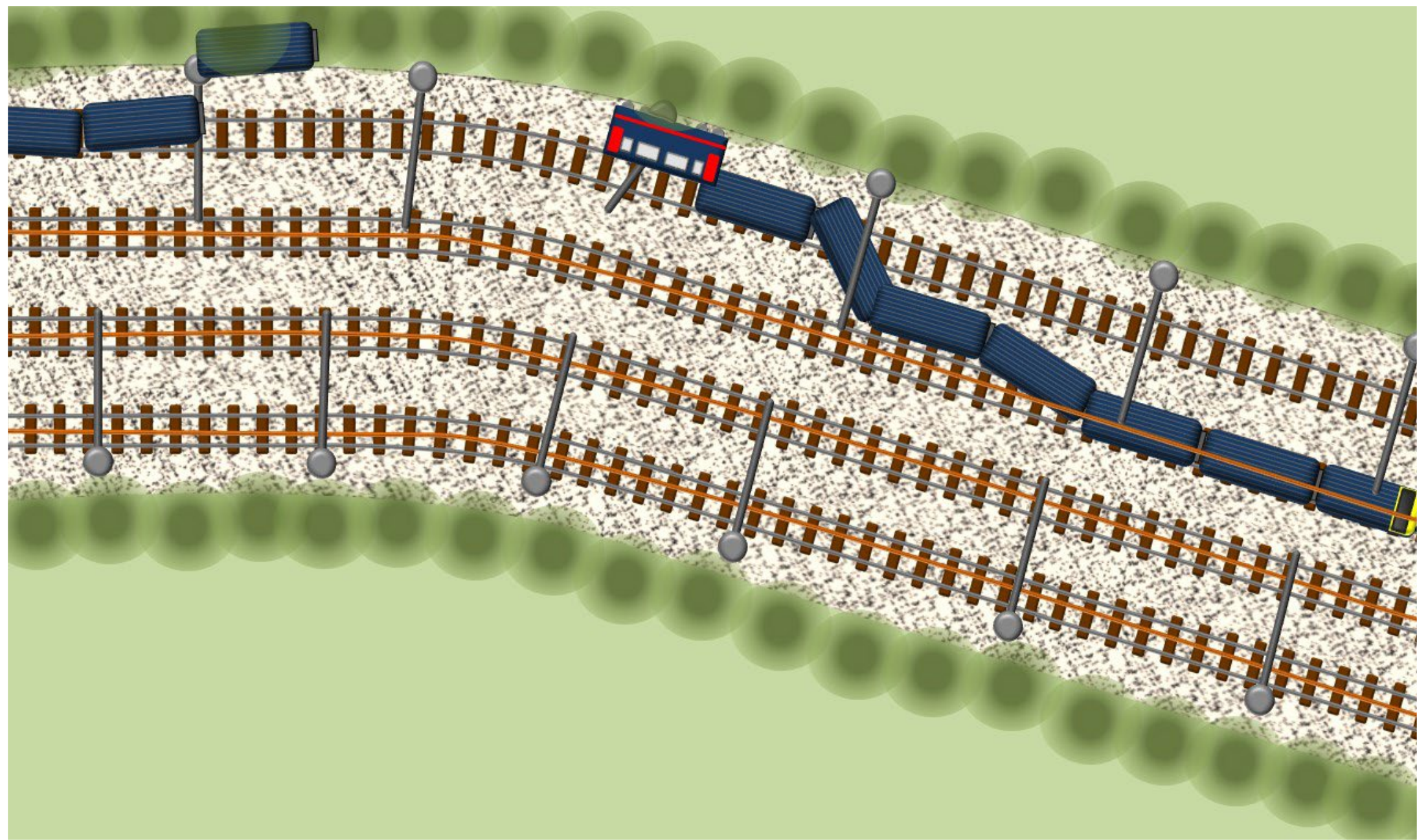




Four fatalities

70 injured

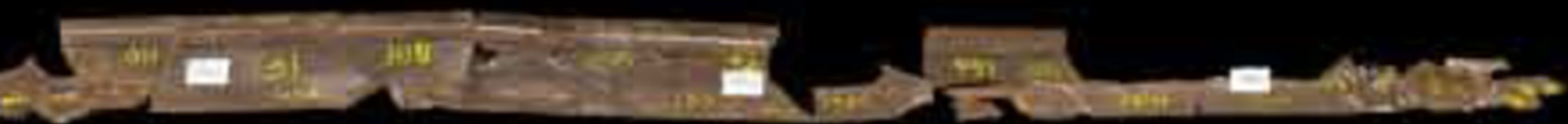
Four seriously injured, including two members of staff

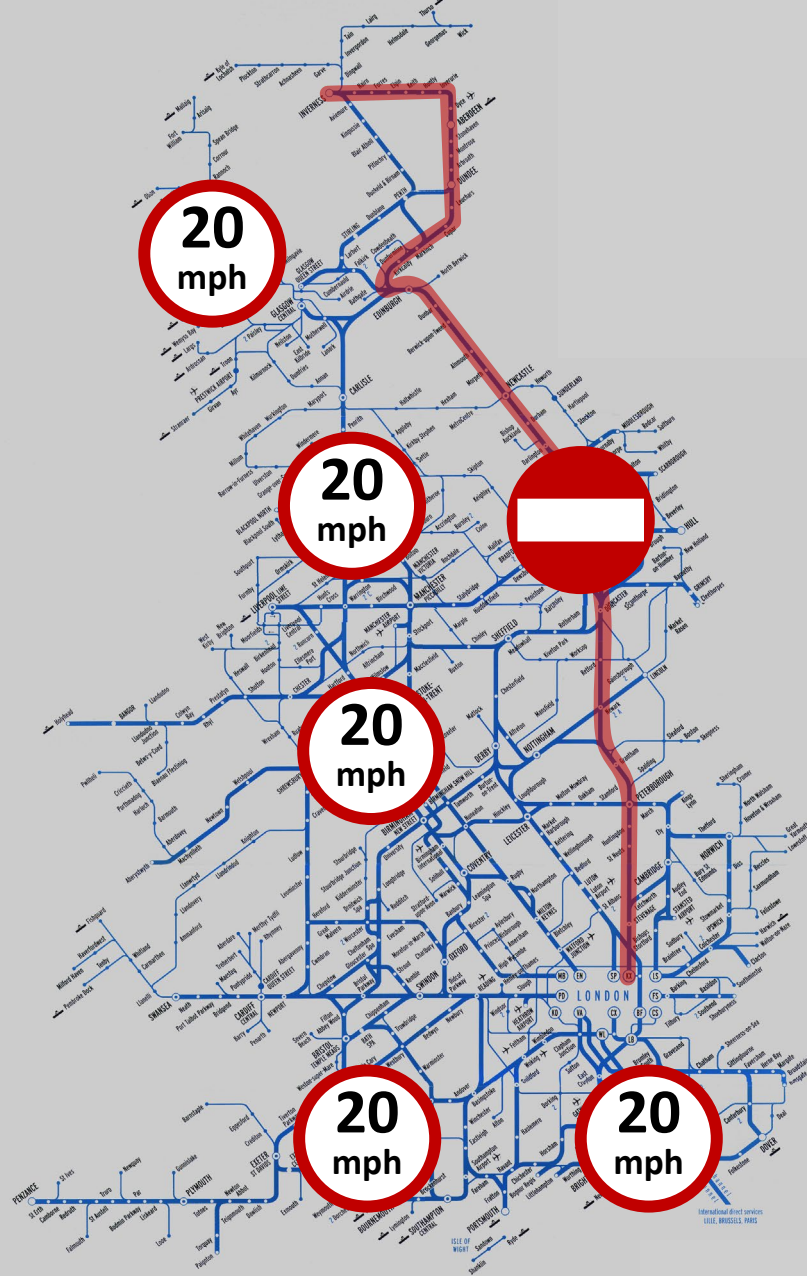


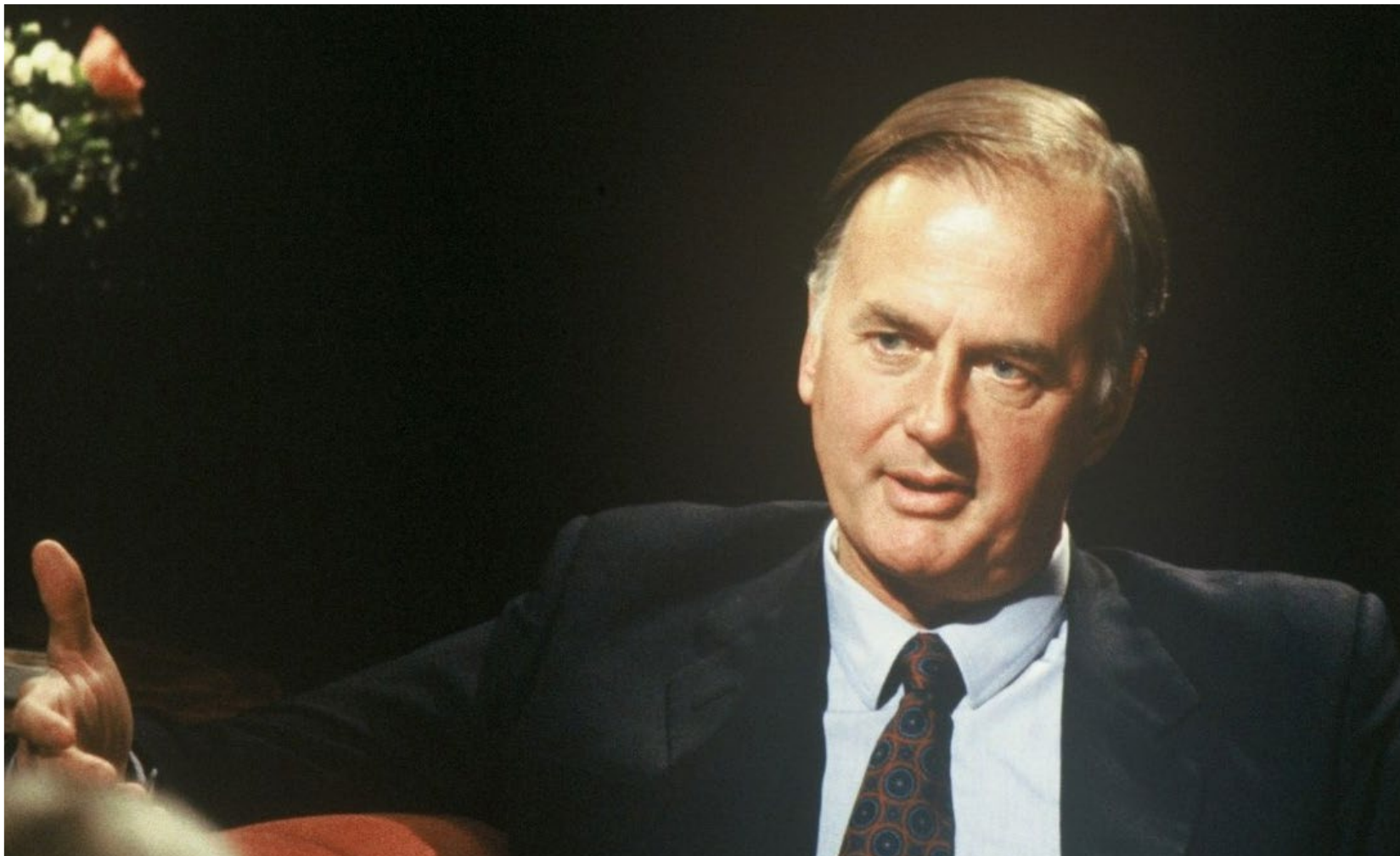










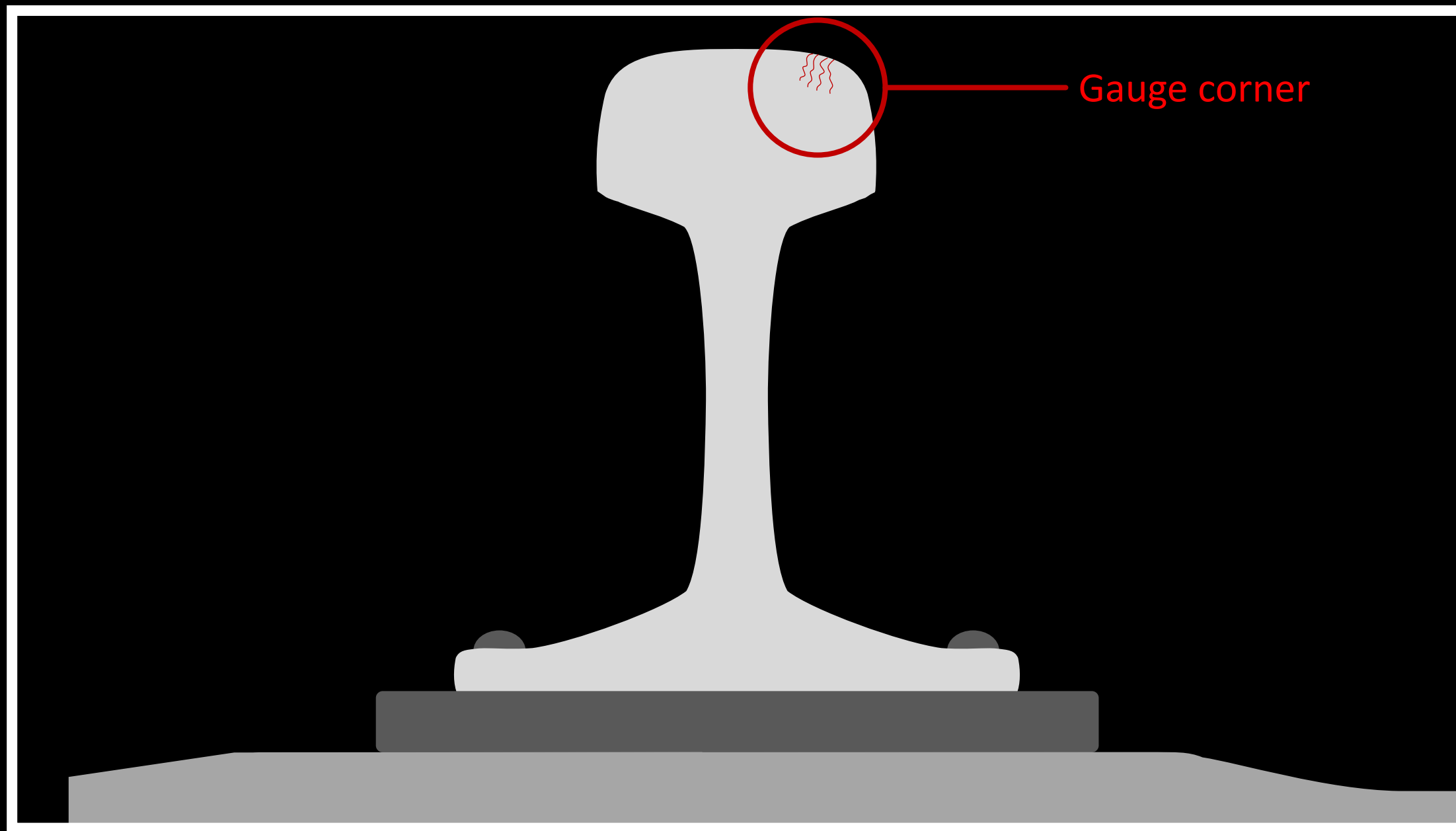


Alastair Morton

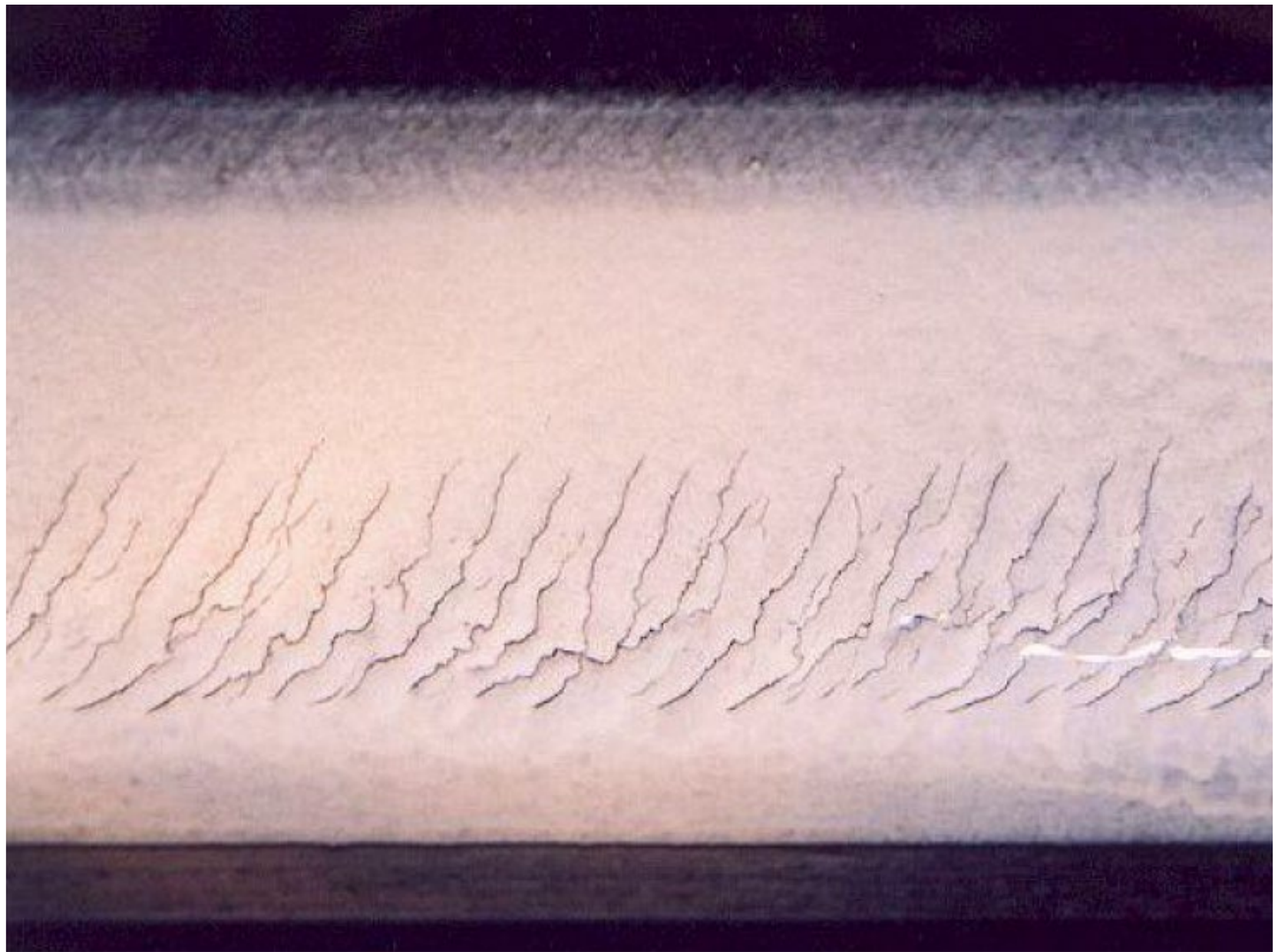
Chairman of the Strategic Rail Authority





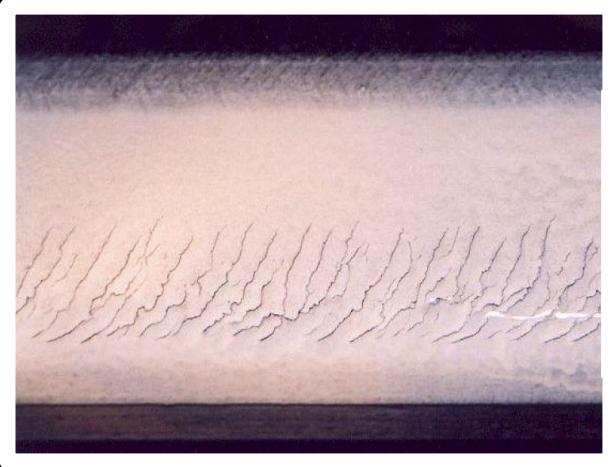




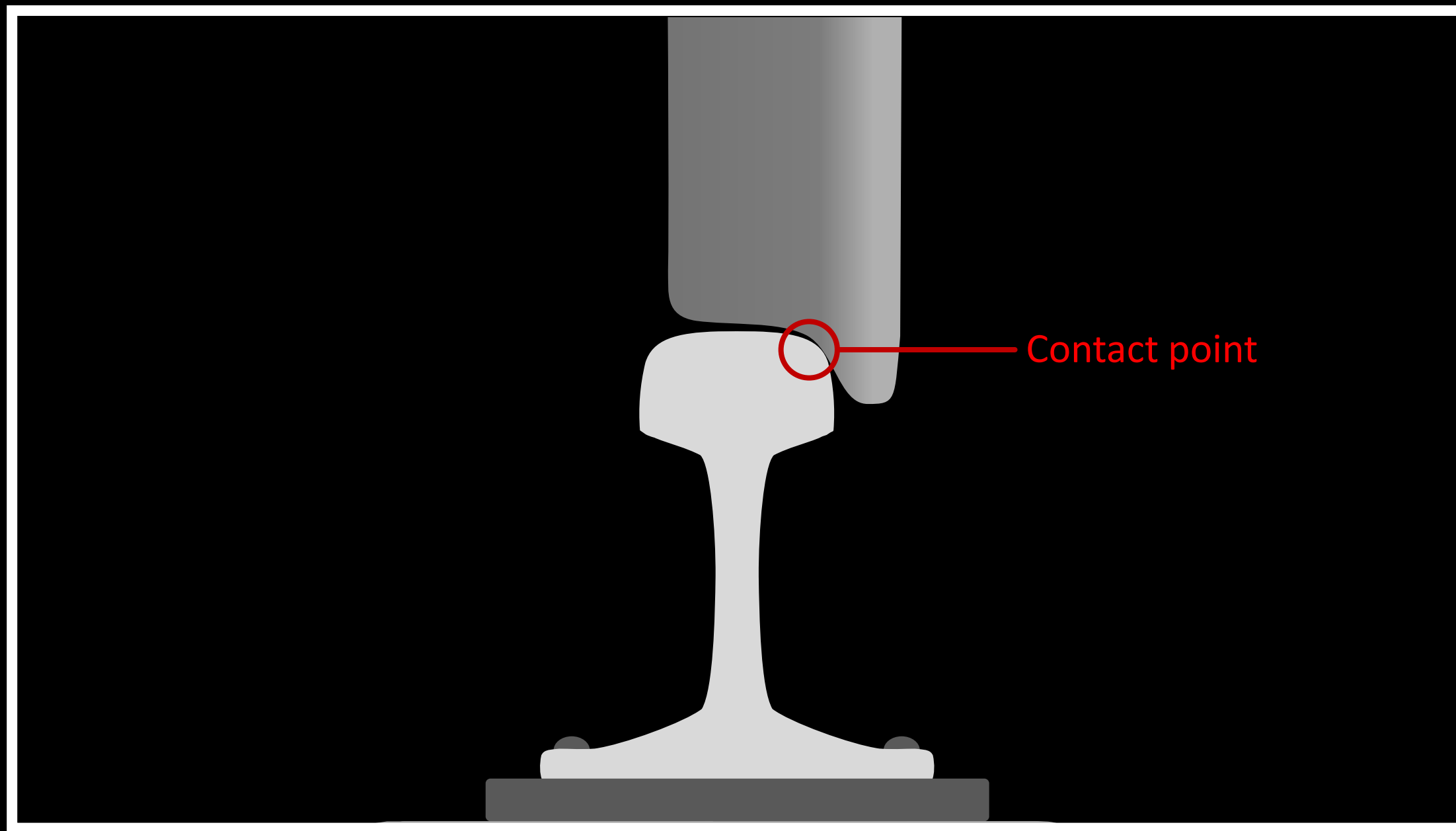




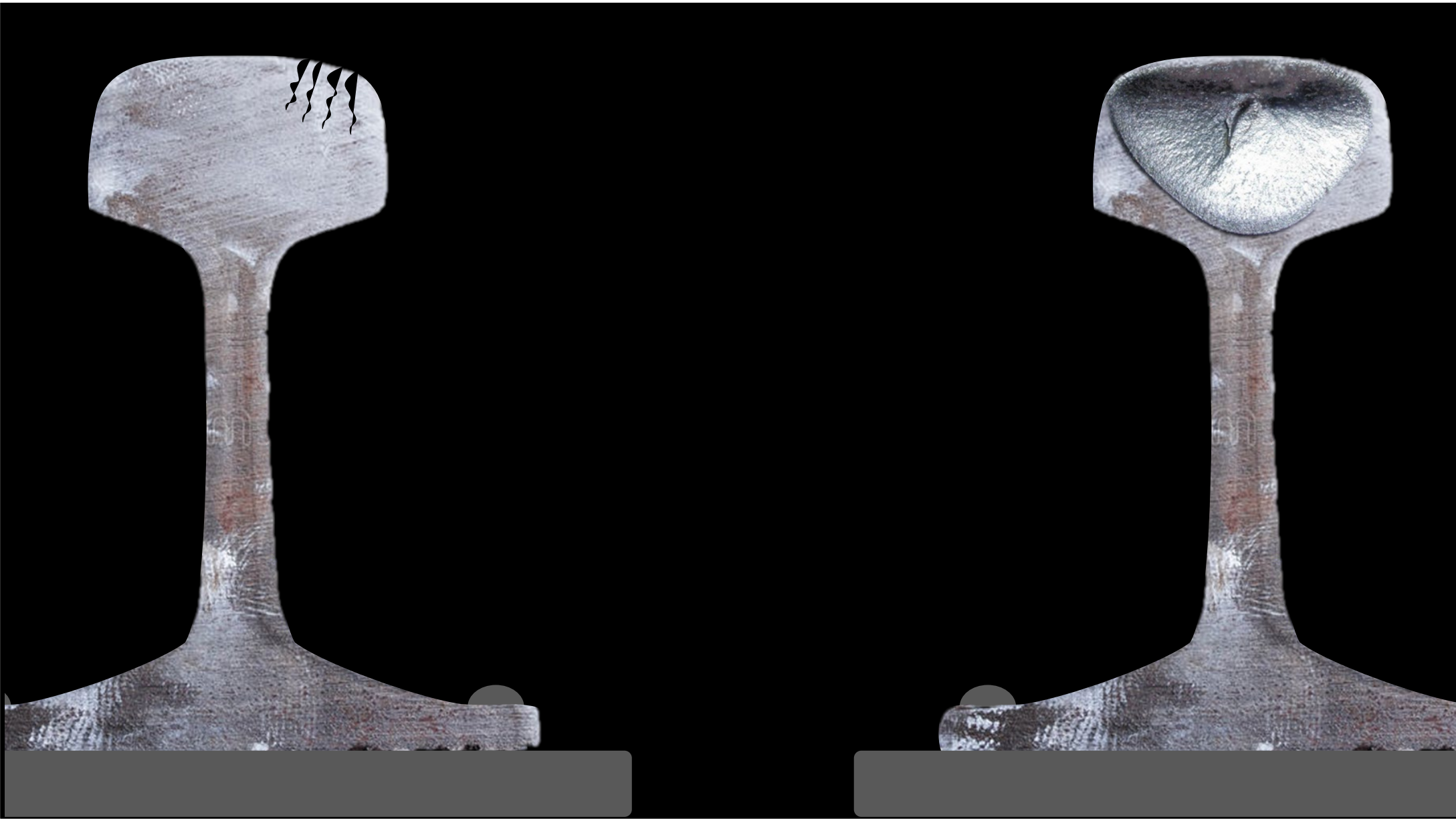
An incomplete appreciation of the risks presented by gauge corner cracking, and



A consequent failure to develop and disseminate comprehensive instructions on its identification and the control measures required’.







**Mar
1995**

**U14
Probe**

serco

JARVIS

Balfour Beatty
Rail

RAILTRACK

Sep
2000

serco

JARVIS

Balfour Beatty
Rail

RAILTRACK

Total loss of
rail bottom

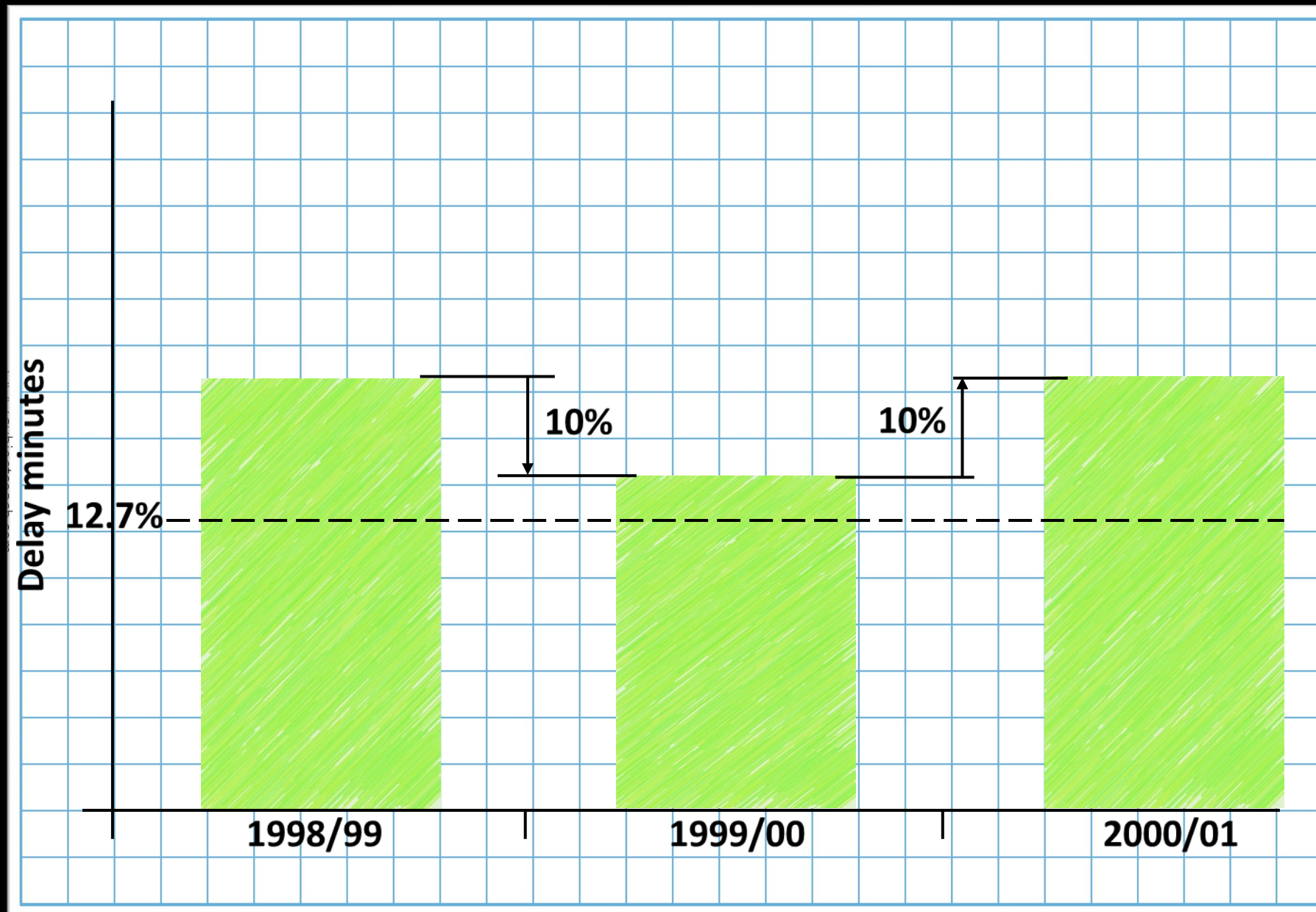
U3
Probe

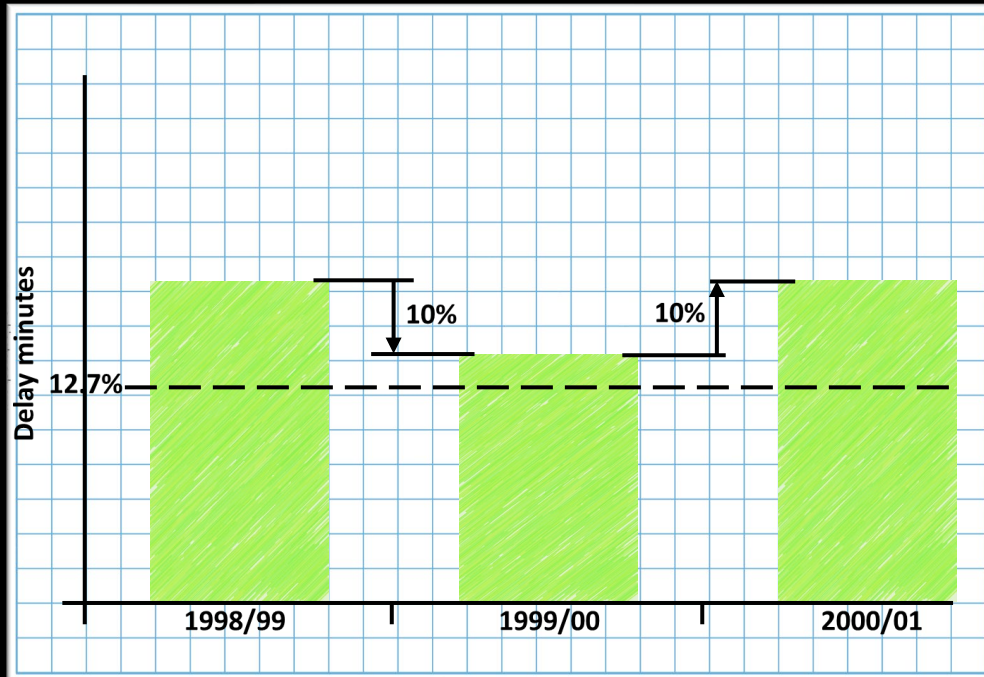
untestable

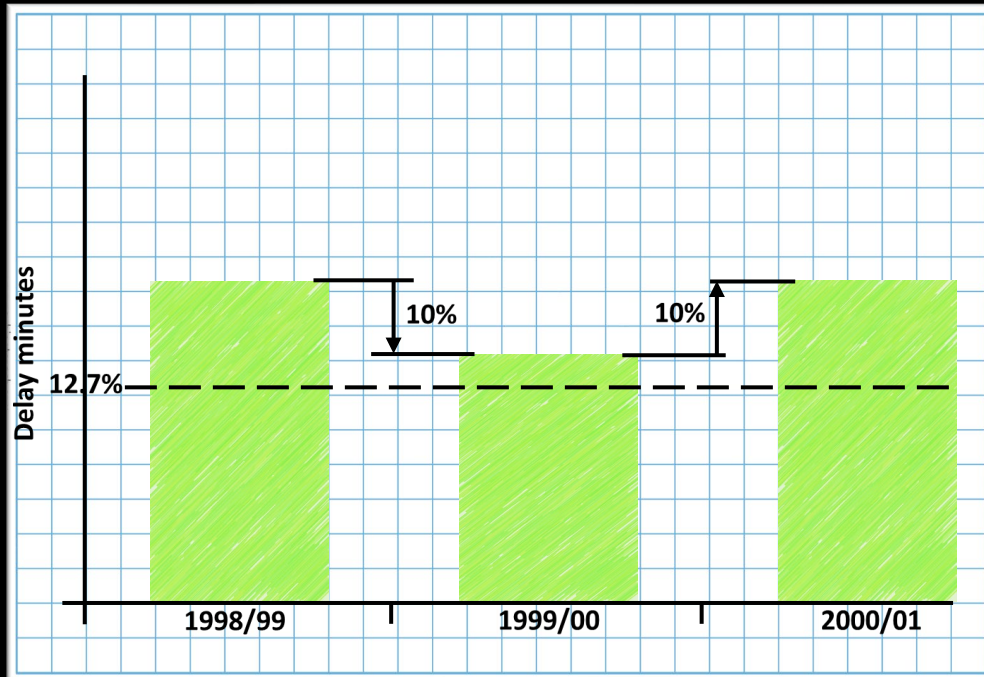


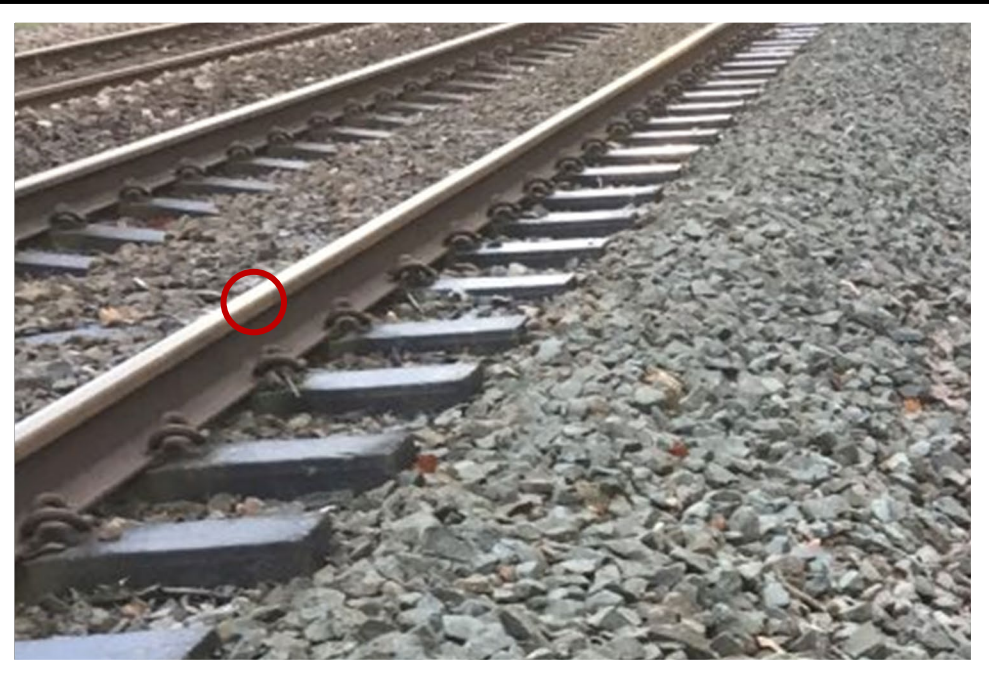
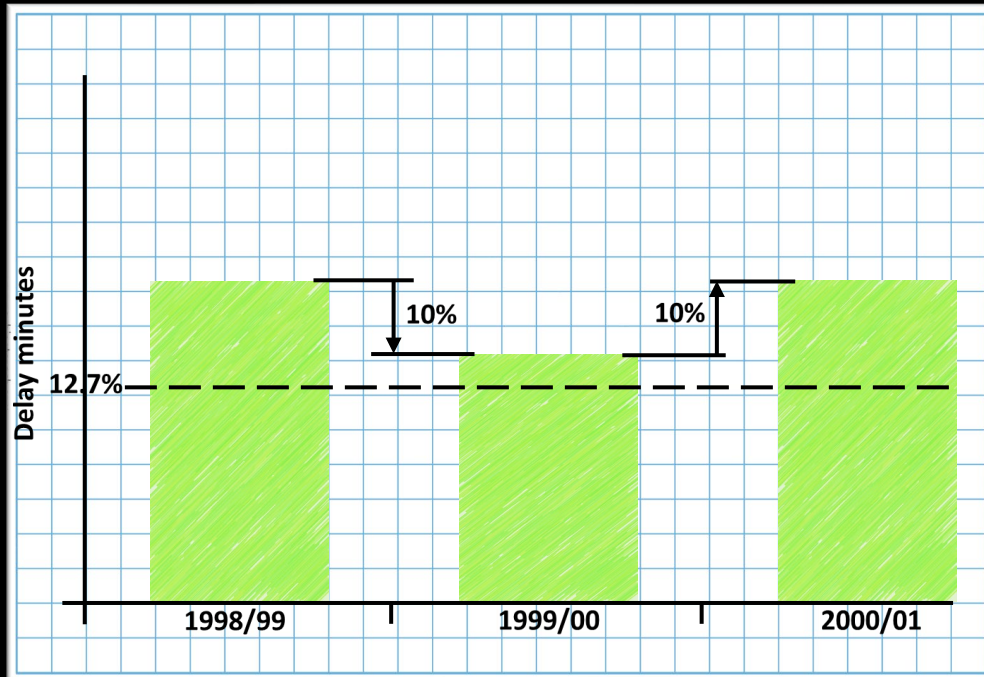
**Nov
1999**

**Oct 9
2000**

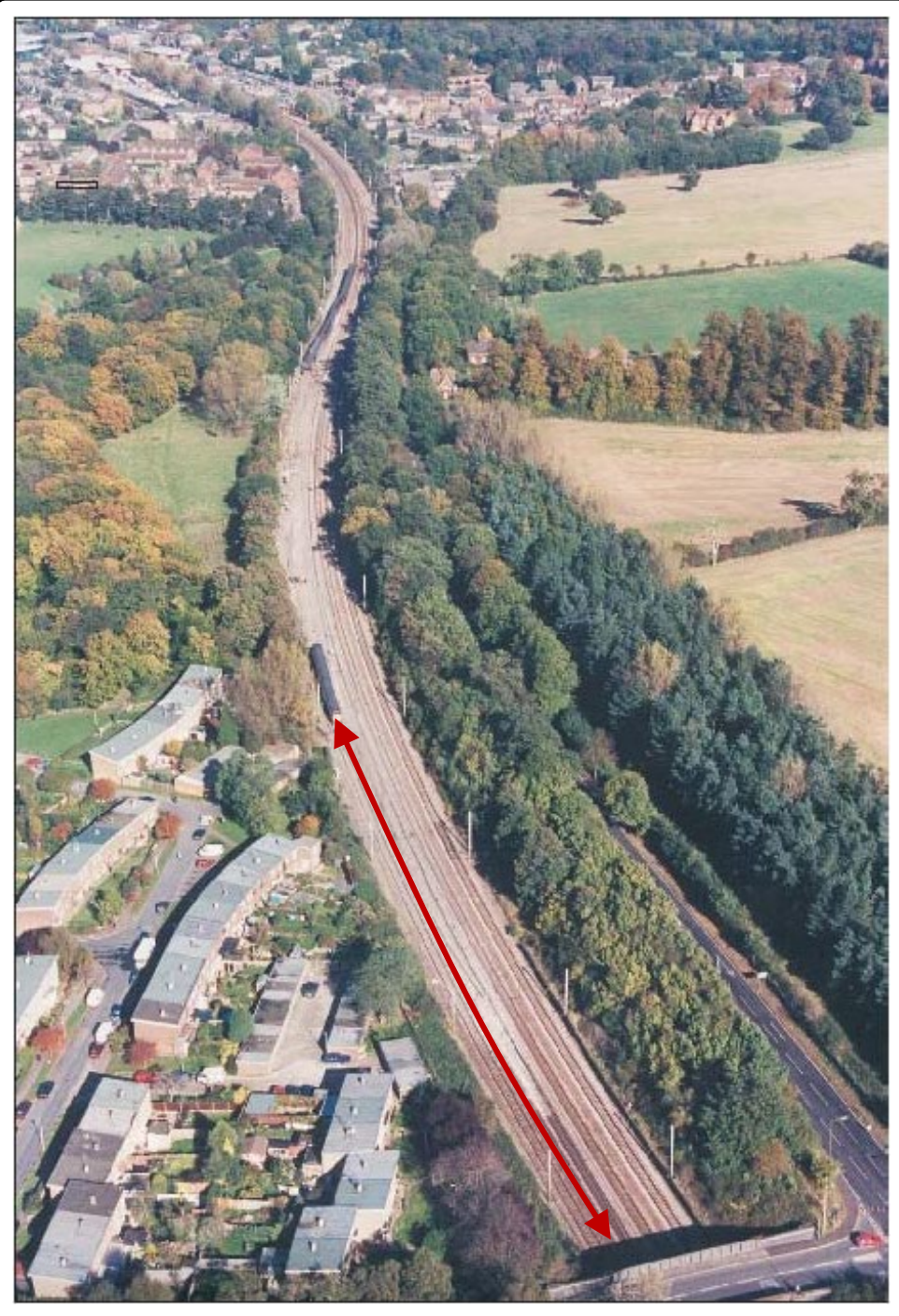










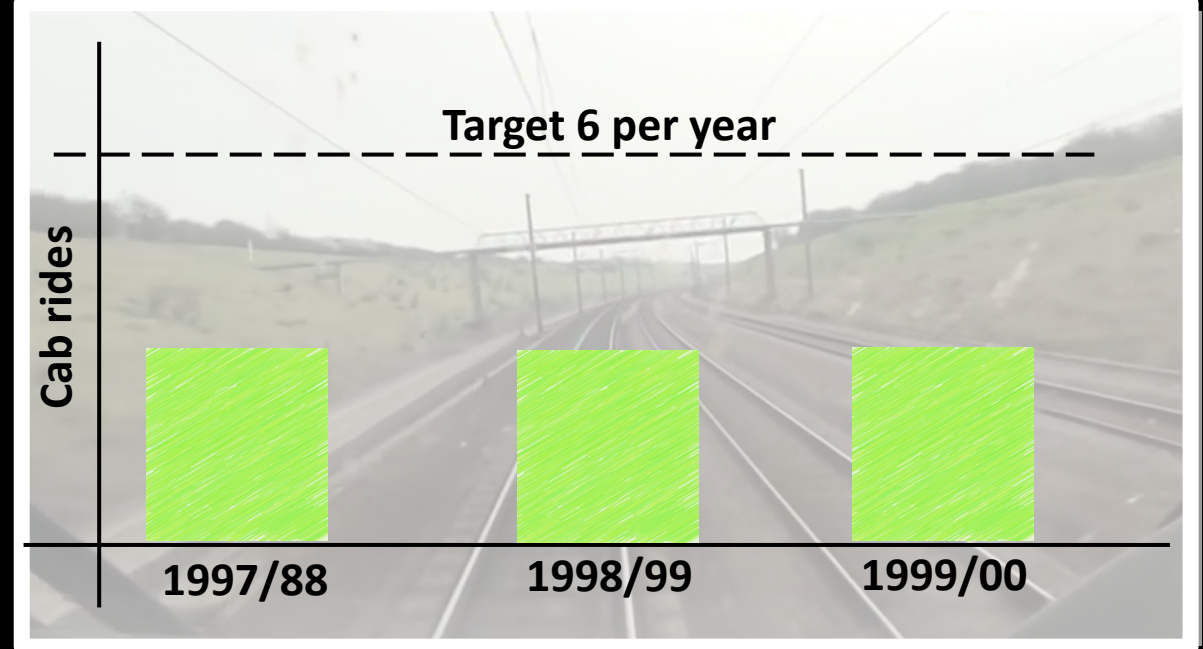
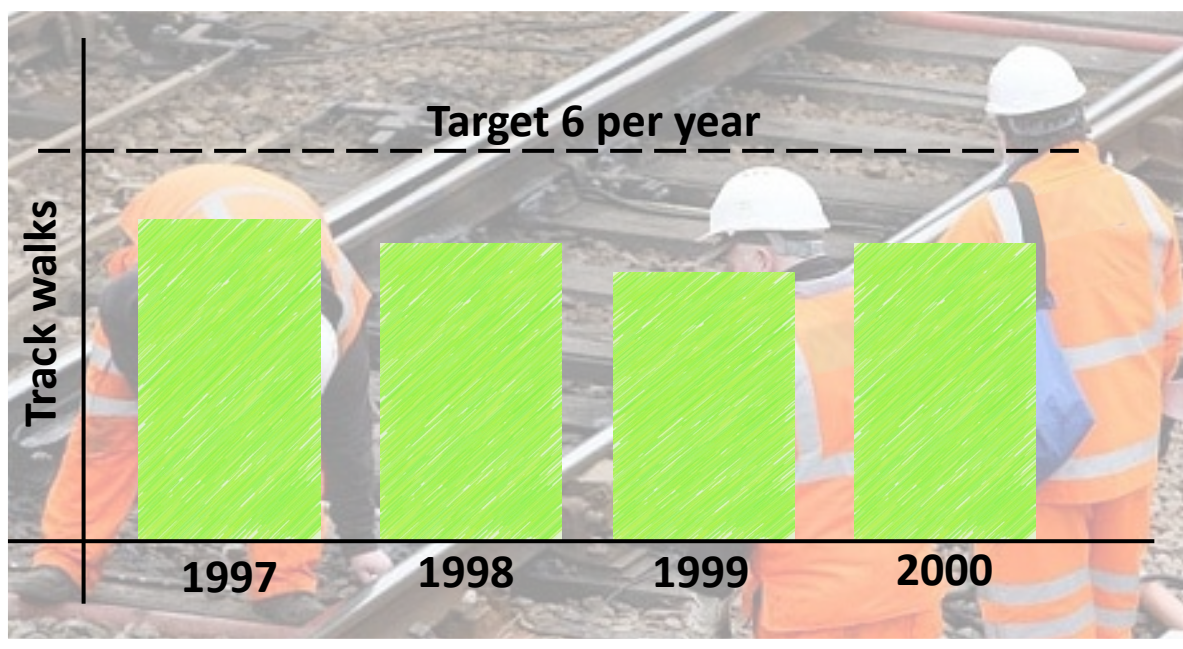




I have never been trained to recognise Gauge Corner Cracking or understand what risks it brought with it.

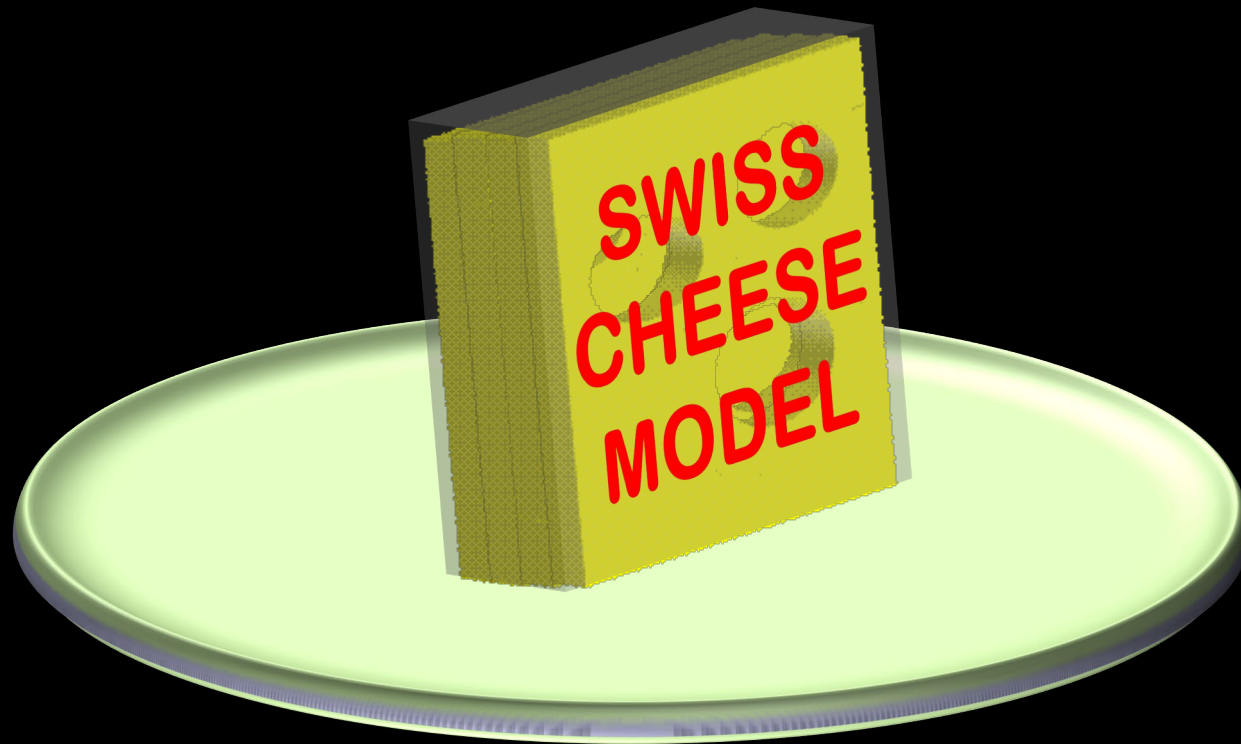
Balfour Beatty

Rail



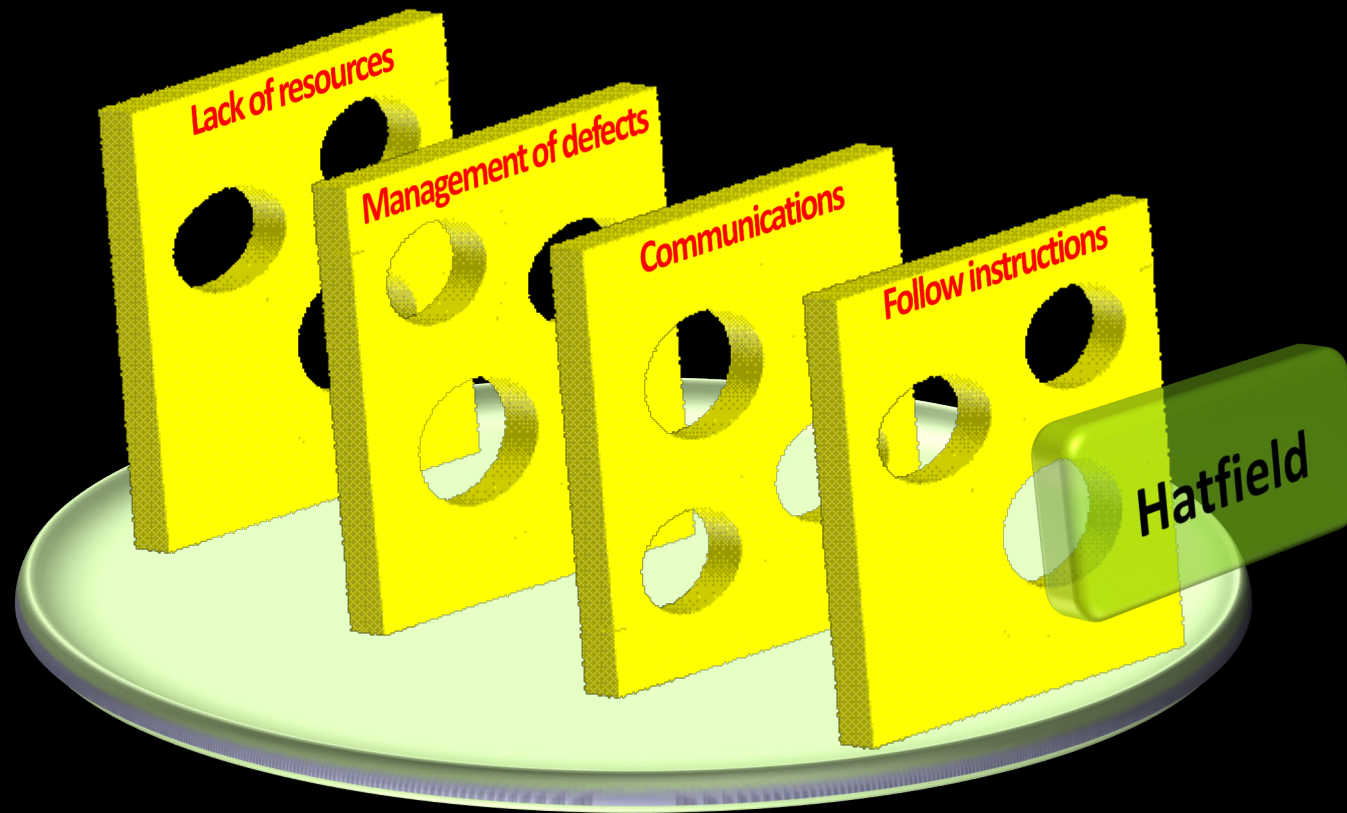
Balfour Beatty

Rail



Balfour Beatty

Rail



RAILTRACK

Railtrack LNE Compliance and Engineering Manager –
Was unable to follow a discussion of track work at Hitchin because he didn't understand its technical nature.



The Zone Quality Standards Manager -
Had neither 'knowledge of railway engineering nor railway safety'

Clapham Junction 12th December 1988
35 fatalities, 484 injured



Piper Alpha 6-7th July 1988
167 fatalities



Ladbroke Grove 5th October 1999
31 fatalities, 258 injured



Hatfield 12th October 2000
4 fatalities, 70 injured





RAILTRACK

David Ventry,
Professional Head of Track at Railtrack HQ.

‘a key driver in the rise in the number of broken rails is the current poor maintenance or, more precisely, the lack of adequate and appropriate maintenance’.



May
1999

The Railtrack logo, consisting of the word "RAILTRACK" in a bold, sans-serif font, enclosed within a rounded rectangular border.

David Ventry,
Professional Head of Track at Railtrack HQ.

A white calendar icon with two silver rings at the top. The text "May" and "1999" is written in red on the calendar page.

May
1999

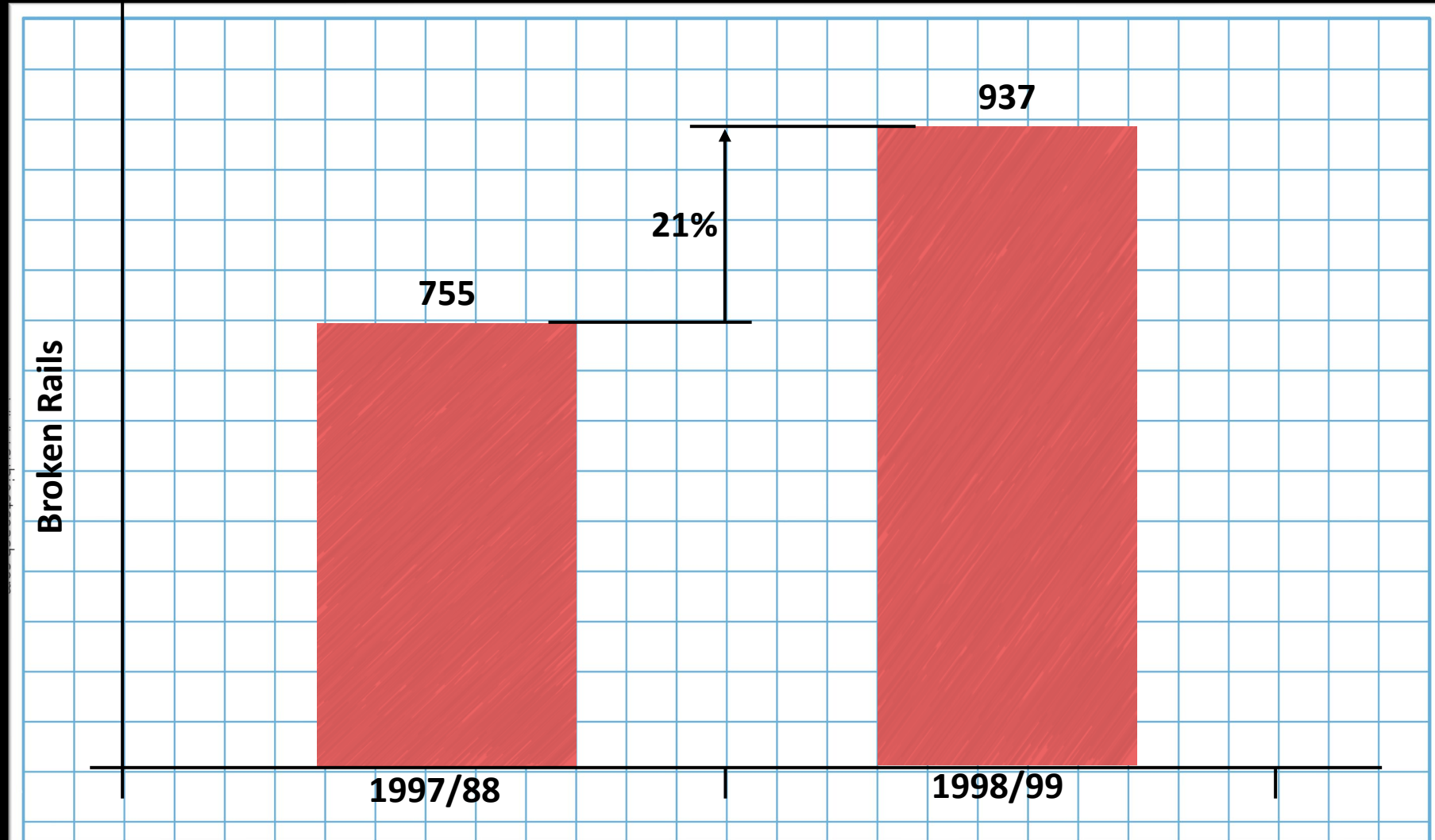
*the current state of the track on parts of our network [was]
heading towards the boundary of acceptability',*

*there was 'widespread noncompliance' with track maintenance
standards and good practice.*

*the 'balance between commercial drivers and safety' was
'overwhelmingly towards the commercial'*



Health & Safety
Executive





Tom Windsor
Rail Regulator



More clarity on what Railtrack deemed acceptable?

RAILTRACK

~~Need excellent
knowledge of one's
asset condition~~

Aug
1999

McKinsey&Company

Project Destiny
strategy

Replacing assets only
when necessary and
not at fixed time

serco

JARVIS

Balfour Beatty
Rail

RAILTRACK

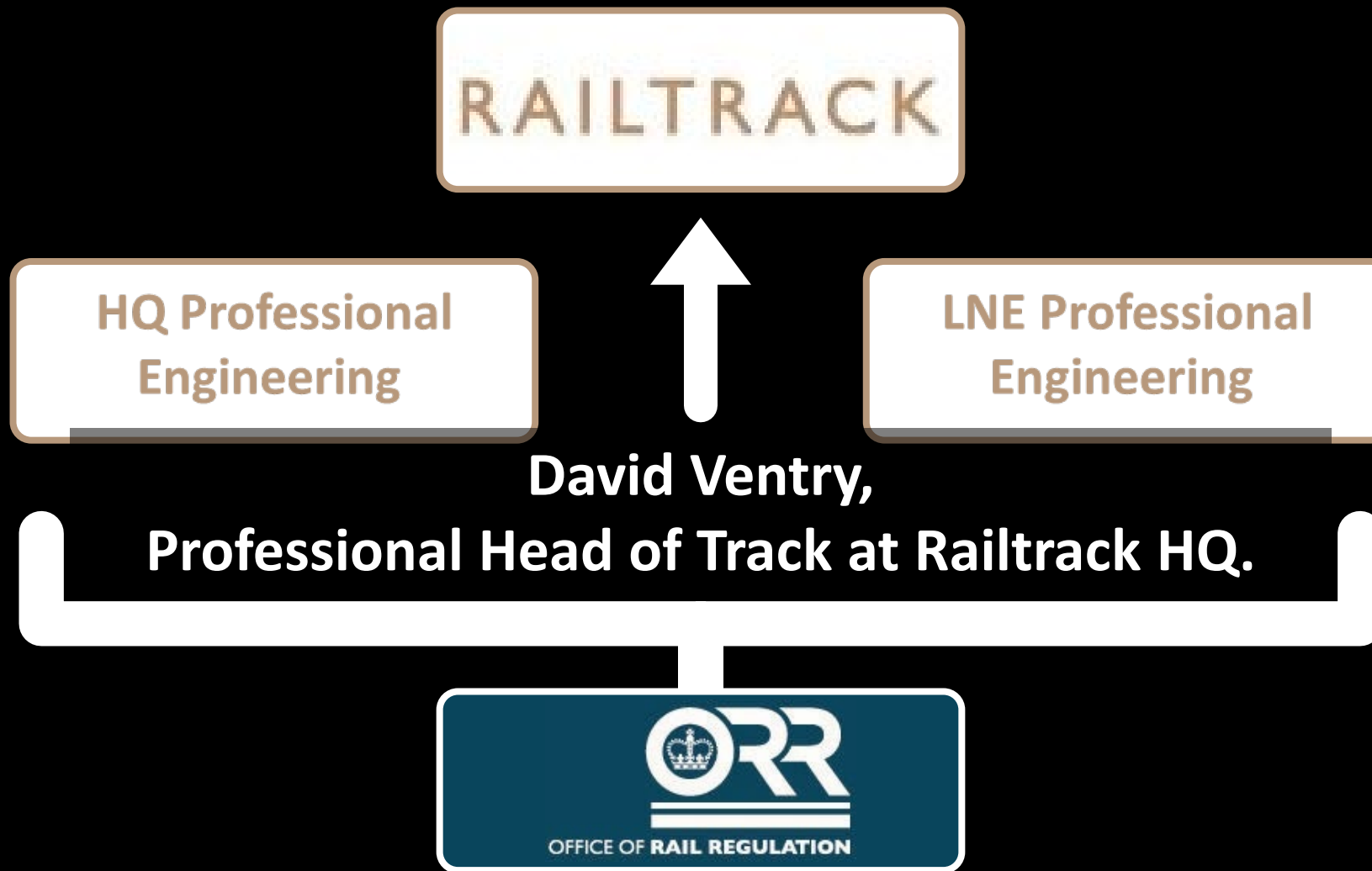
Asset

Database

Project Destiny
strategy

Replacing assets only
when necessary and
not at fixed time

Aug
1999



‘that he alerted senior colleagues to the non-compliant state of rail maintenance, however, Railtrack as an organisation, failed to implement and monitor his advice to ensure rails were properly maintained’

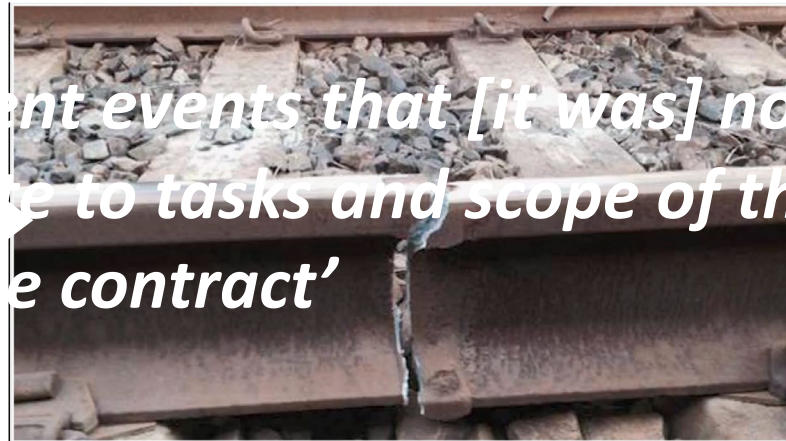
RAILTRACK

Zone Director
Nick Pollard

Balfour Beatty
Rail

**Early
1998**

Poor maintenance
it is very clear from recent events that [it was] not
providing resources adequate to tasks and scope of the
investigation
Non-compliance with standards
maintenance contract'



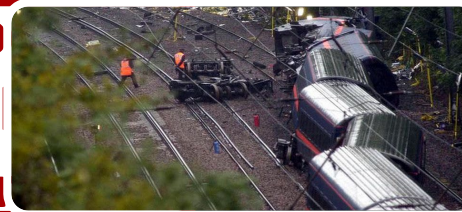


Health & Safety
Executive

**May
2000**

**Tom Windsor
Rail Regulator**

**Transp
Techno
Centr**



Metallurgy

**Wheel-rail
interaction**

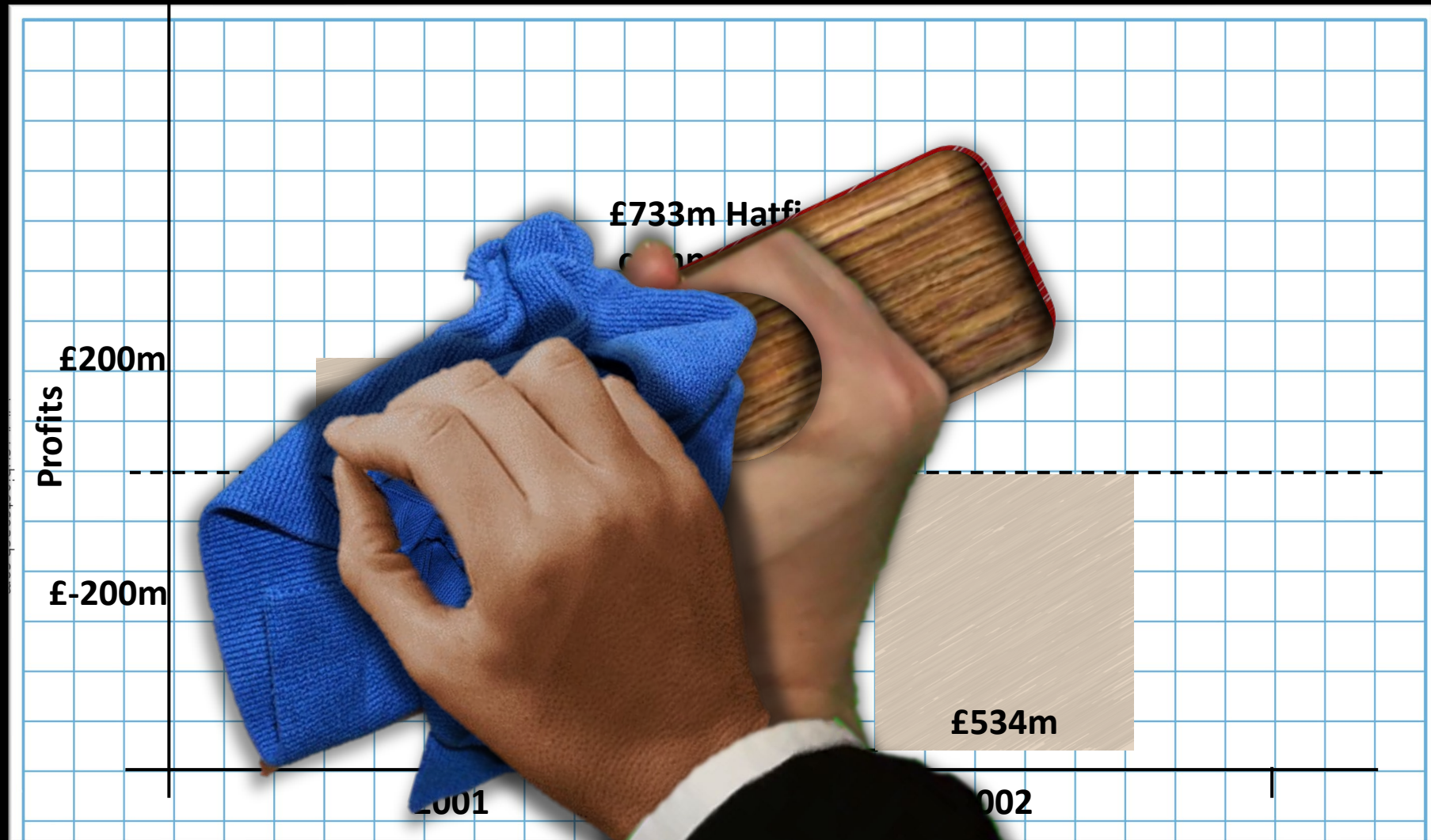
Brake design

Suspension design

**Ultrasonic rail
flaw detection**

RAILTRACK

Nov
2000



RAILTRACK

Balfour Beatty
Rail

2002



**The Health and Safety
at Work etc Act 1974**

£10,000,000

+

£300,000

£3,500,000

+

£300,000

RAILTRACK

Balfour Beatty
Rail

Sept
2005

amec

 **carillion**

Network Rail

amey

First 
transforming travel

serco

JARVIS

**Sept
2005**



STATUTORY INSTRUMENTS

2000 No. 2688

HEALTH AND SAFETY

The Railways (Safety Case) Regulations 2000

Made - - - - 2nd October 2000
Laid before Parliament 2nd October 2000
Coming into force 31st December 2000

ARRANGEMENT OF REGULATIONS

PART I

INTRODUCTION

1. Citation and commencement
2. Interpretation
3. Application

PART II

SAFETY CASES

4. Use of railway infrastructure
5. Safety case for train operations and for station operations
6. Review of safety cases
7. Revision of safety cases
8. Power of Executive in relation to safety cases
9. Audit

PART III

GENERAL DUTIES

10. Duty to conform with safety case
11. Co-operation
12. Duties of infrastructure controller
13. Notification of non-compliance
14. Notifications, consultations and documents

PART IV

MISCELLANEOUS

15. Appeals
16. Transitional provisions
17. Exemptions
18. Amendment and revocation

[DOT 12223]

Sept
2005

Safety Case containing a Safety Management System

STATUTORY INSTRUMENTS

2006 No. 599

HEALTH AND SAFETY

The Railways and Other Guided Transport Systems (Safety) Regulations 2006

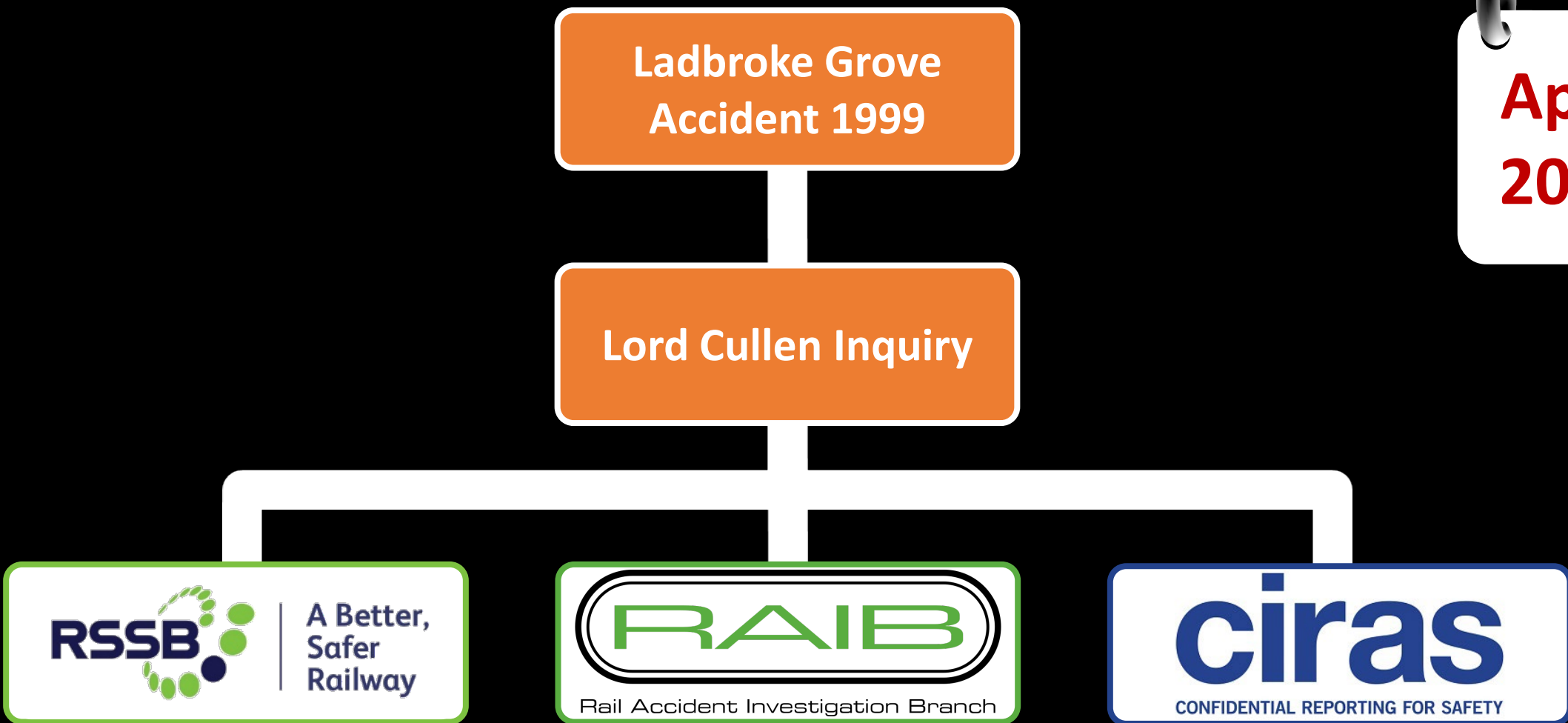
Made - - - -	9th March 2006
Laid before Parliament	17th March 2006
Coming into force except for regulations 19, 23 to 26, 29 and 34	10th April 2006
regulations 19, 23 to 26, 29, and 34 - - -	1st October 2006



£6.50

2000

Safety Certificate or Safety Authorisation



**April
2006**



A Better,
Safer
Railway



Risk
Analysis

Standards

System Interface
Committees

Reporting

Research and
Development

Whole system
interface

Vehicle/Train
Energy systems
interface

Vehicle/Track
systems interface

Data &
Information
systems interface

Vehicle/Vehicle
system interface

Vehicle/
Structures
systems interface

Vehicle/Train
control &
communications

Whole system
interface

Vehicle/Train
Energy systems
interface

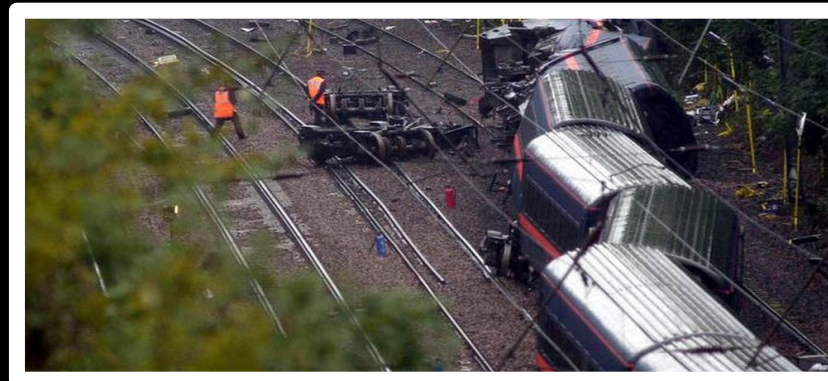
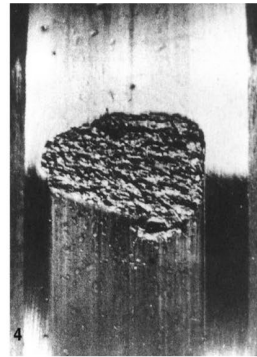
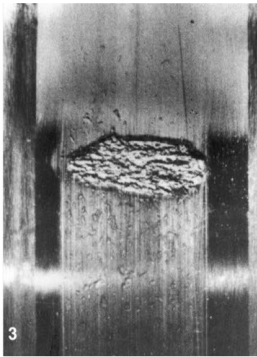
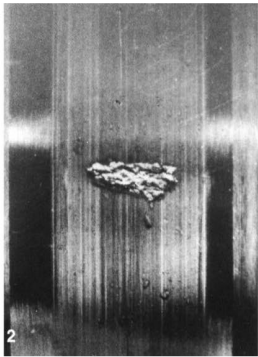
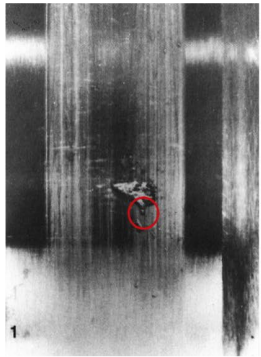
Vehicle/Track
systems interface

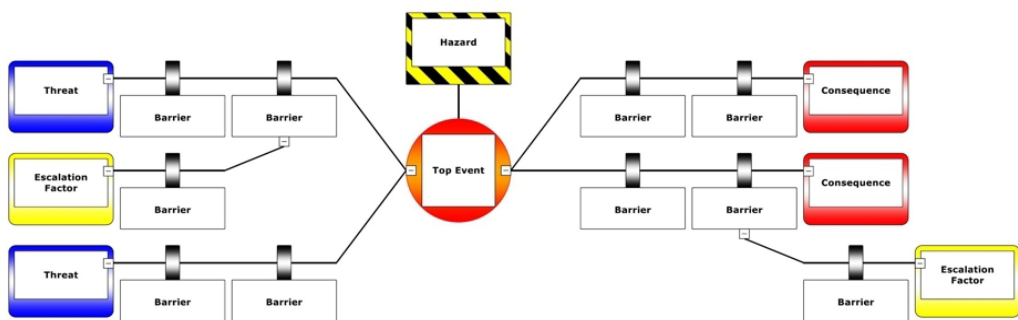
Data &
Information
systems interface

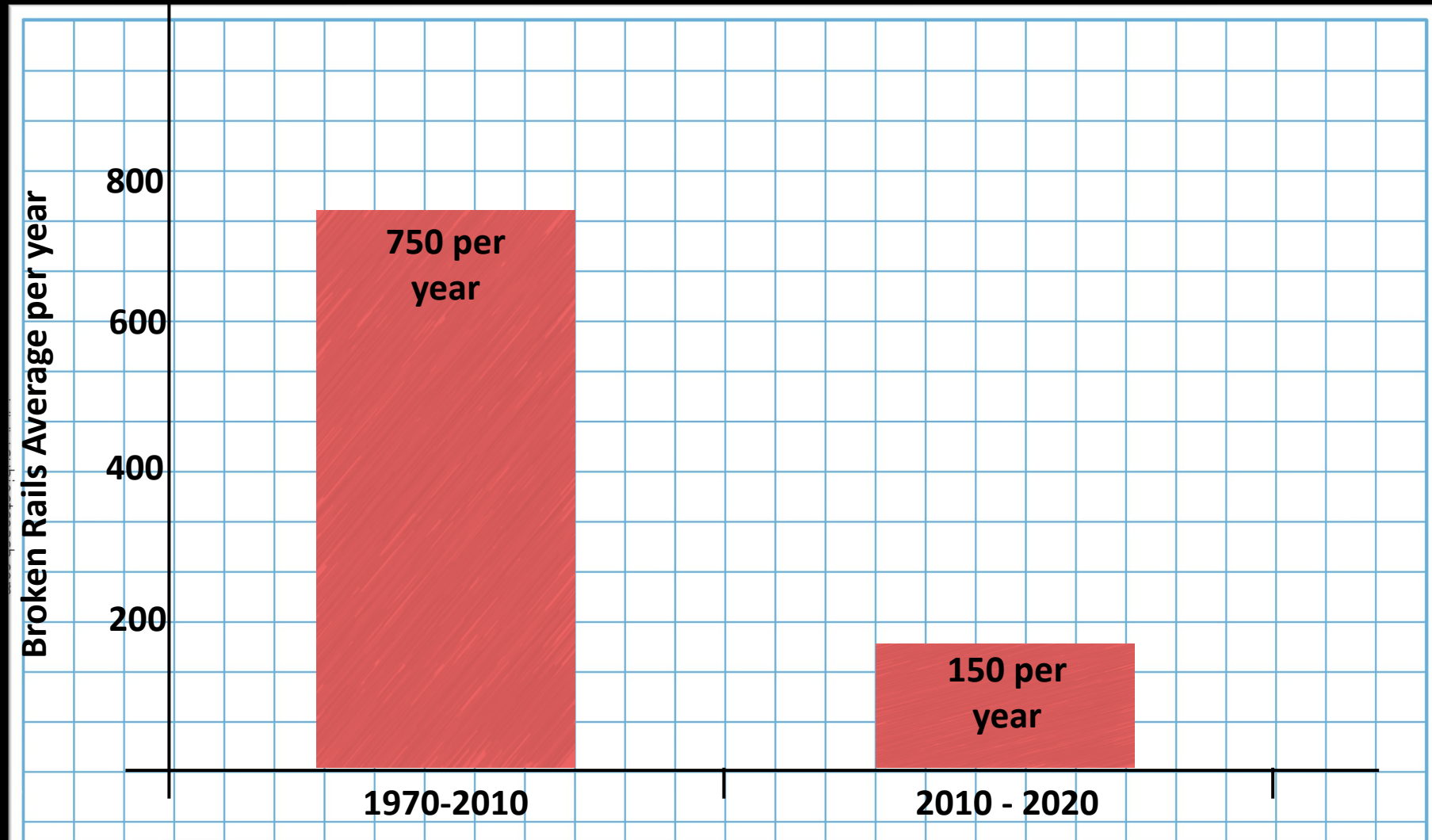
Vehicle/Vehicle
system interface

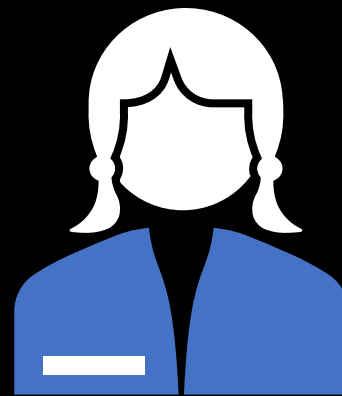
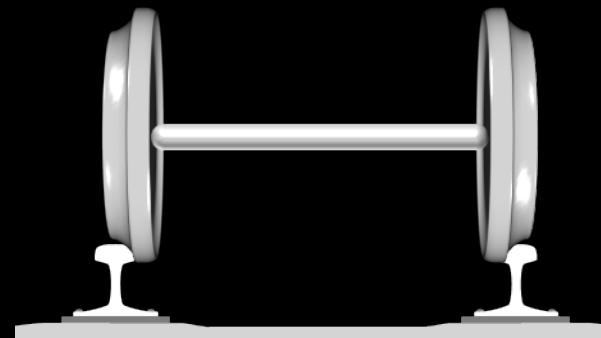
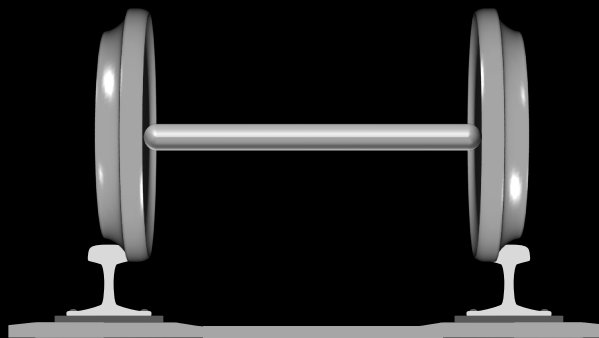
Vehicle/
Structures
systems interface

Vehicle/Train
control &
communications









Corporate Memory ?



Greg Morse
Operational Feedback Lead