



A Better,  
Safer  
Railway

**Greg Morse**  
**LHSBR Editor and Operational Feedback Lead -**  
**Health and Safety Management**

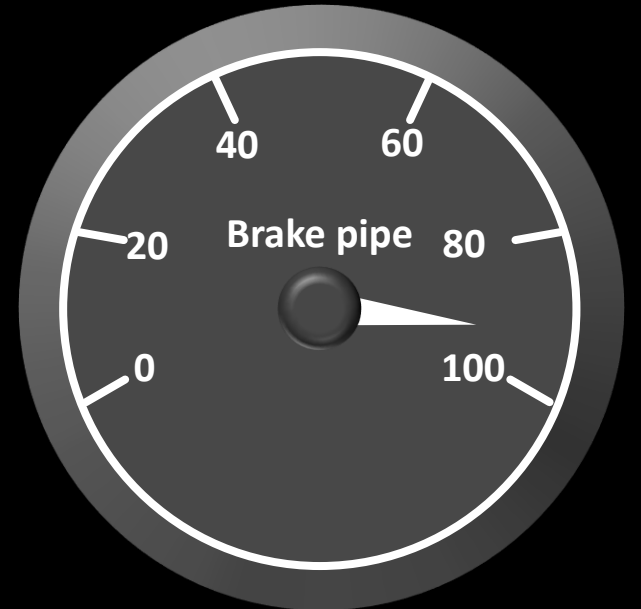
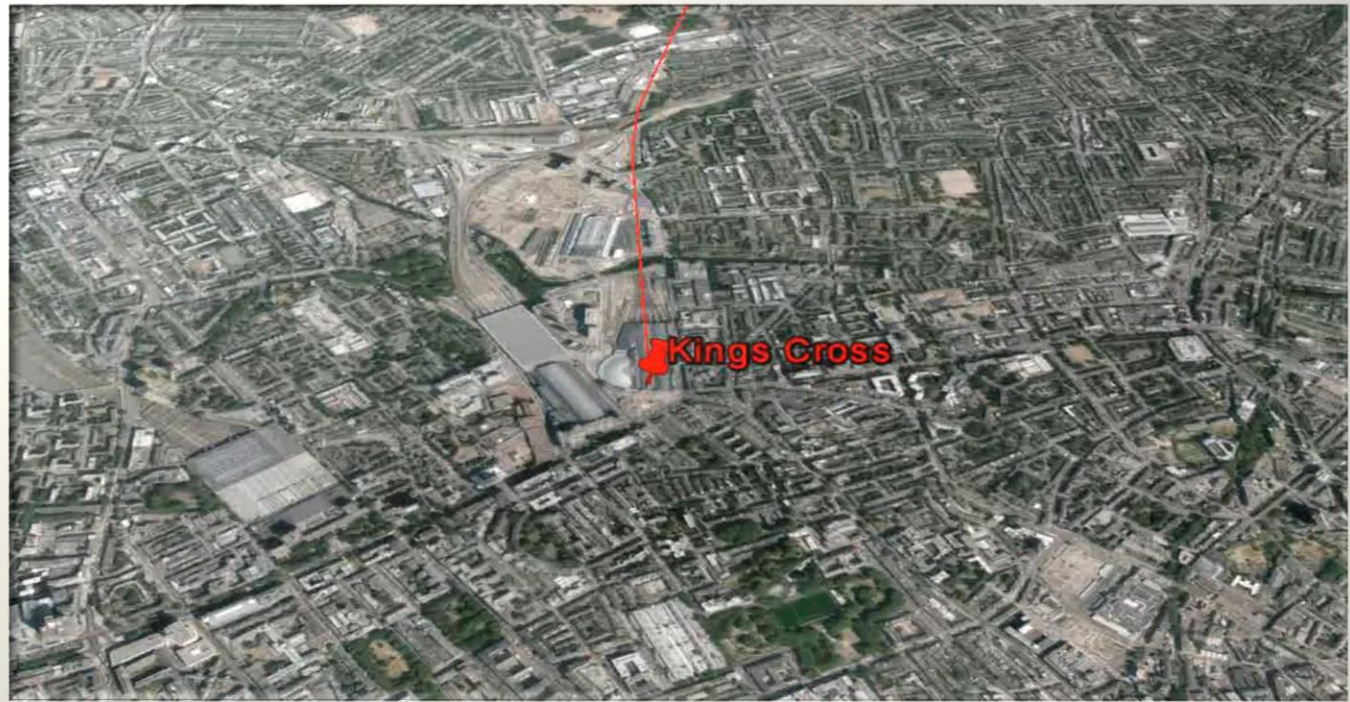
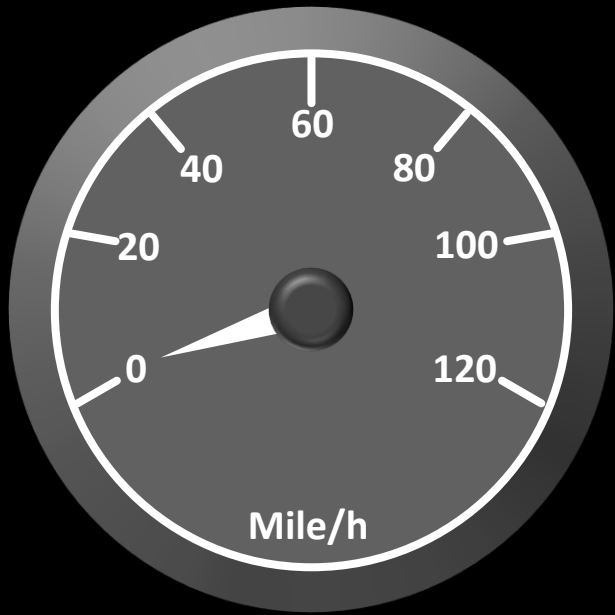


***Travelling by rail hasn't been easy recently – for any of us.  
But now all Britain's rail companies are pulling together –  
doing whatever it takes to return you to a national rail network you  
can depend on.***

**Wednesday 17<sup>th</sup> October 2001**





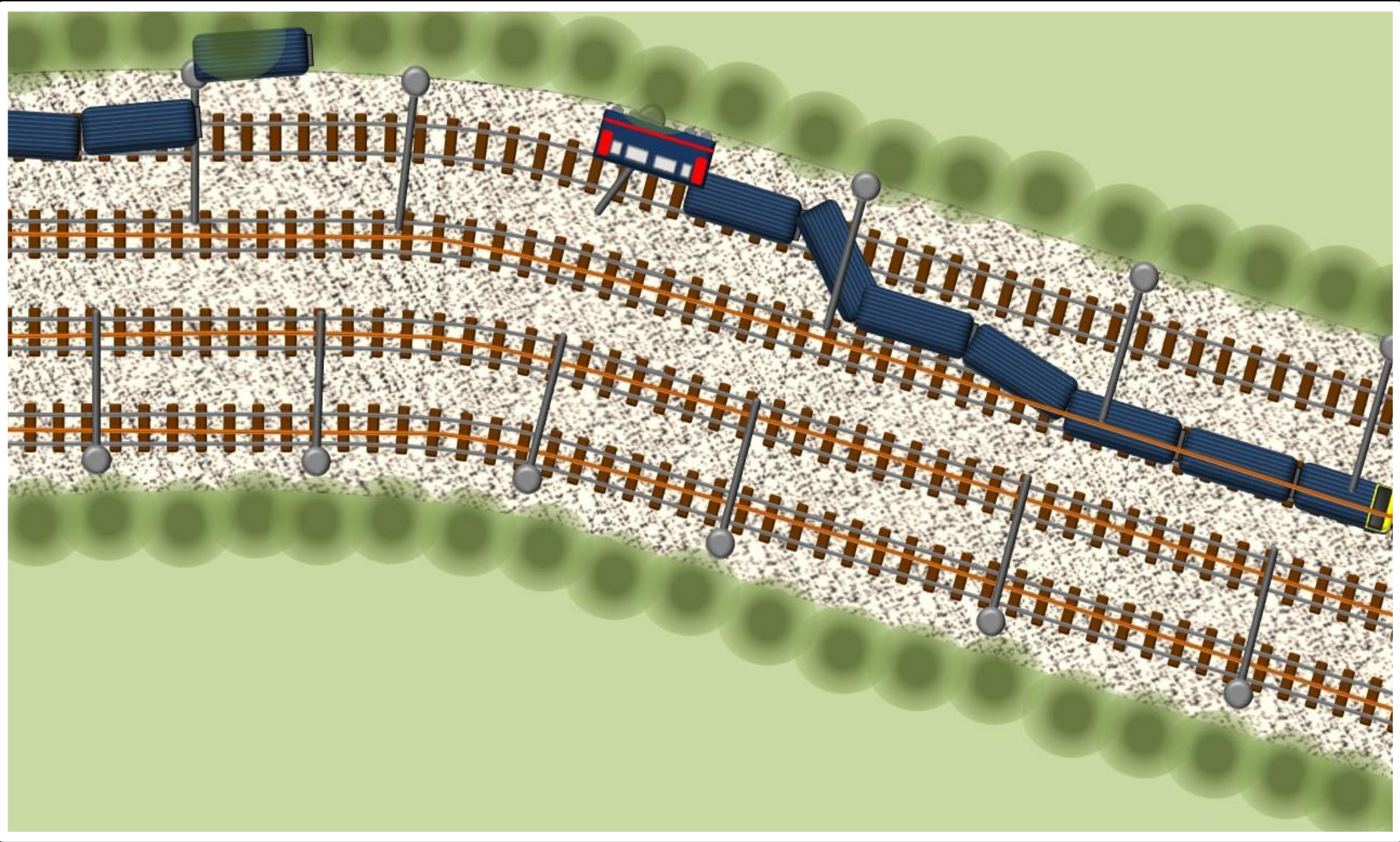


**Four fatalities**

**70 injured**

**Four seriously injured, including two members of staff**









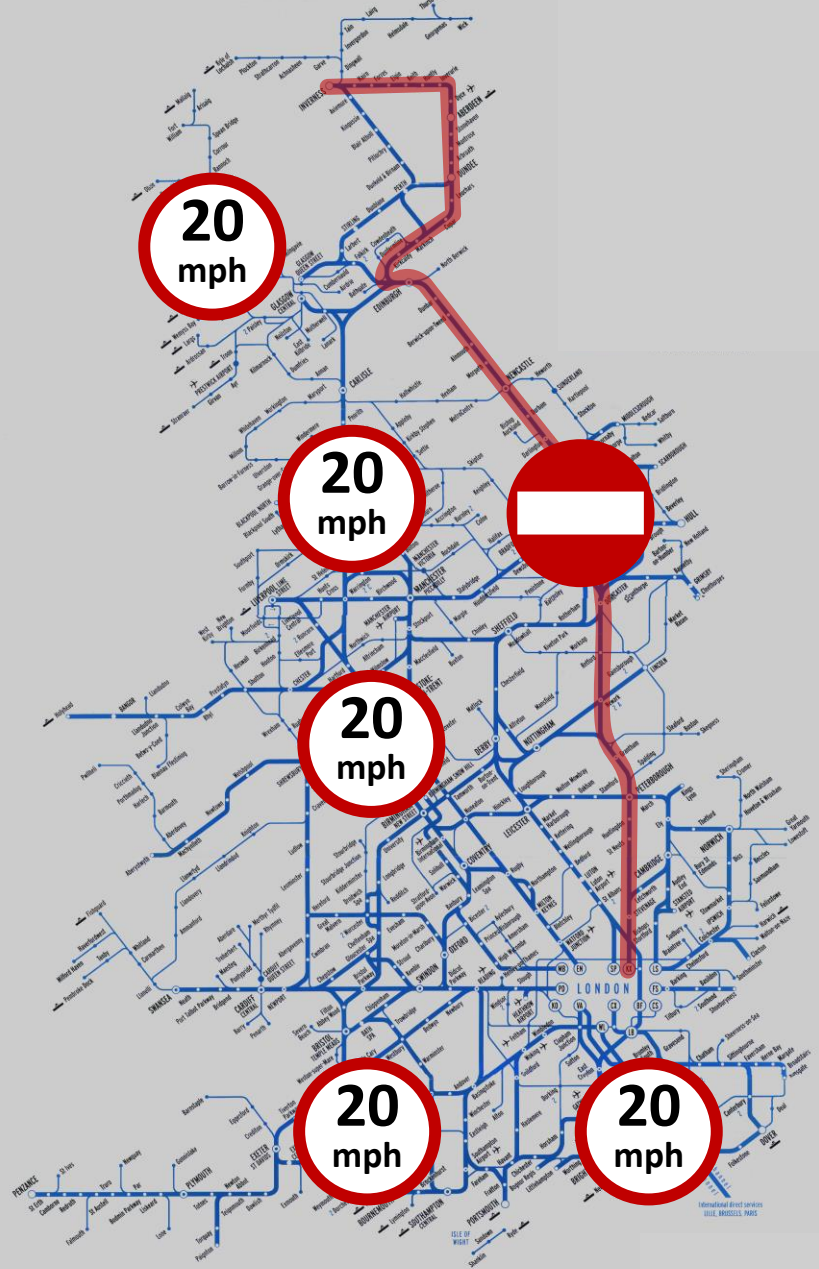












20  
mph

20  
mph

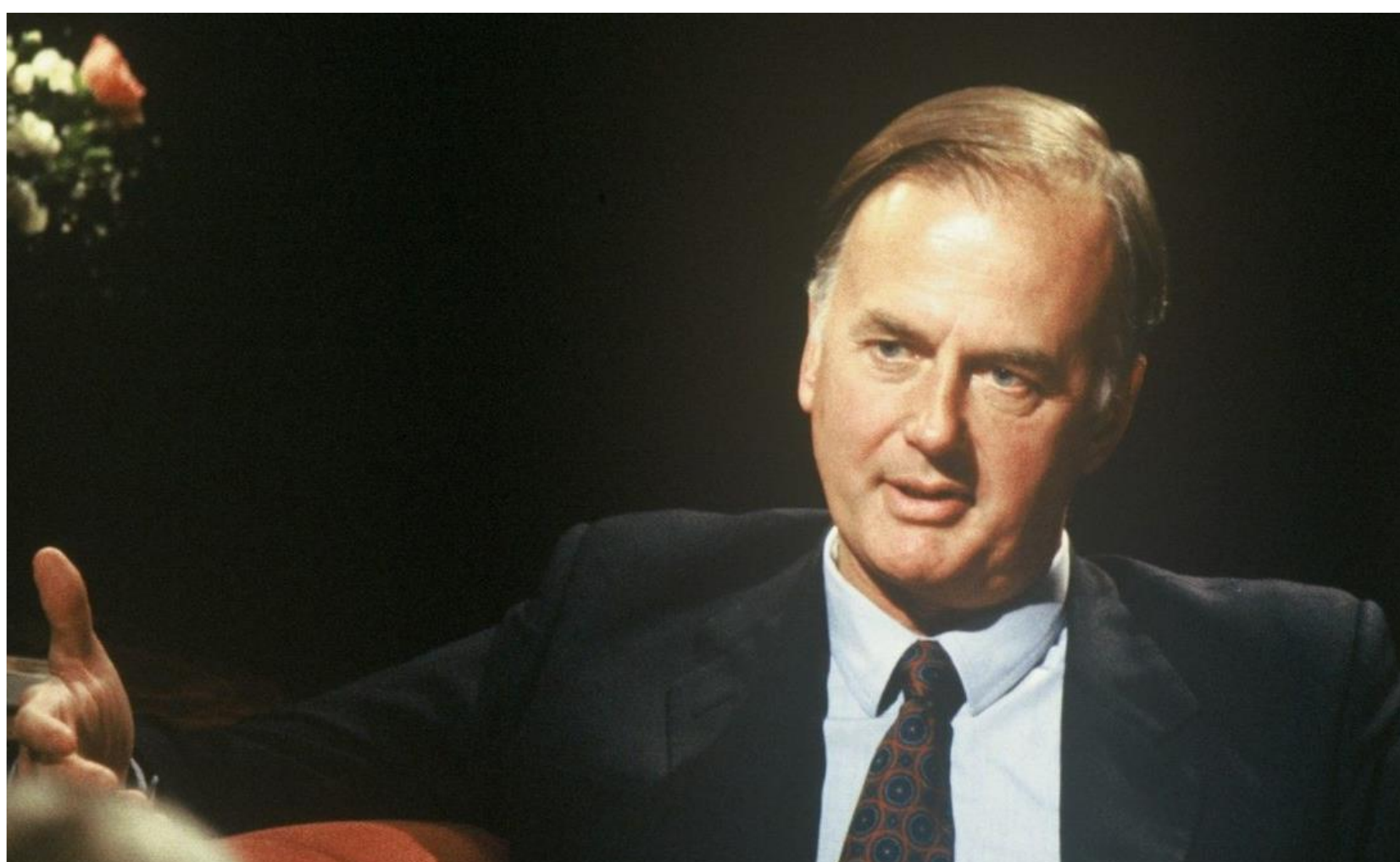


20  
mph

20  
mph

20  
mph





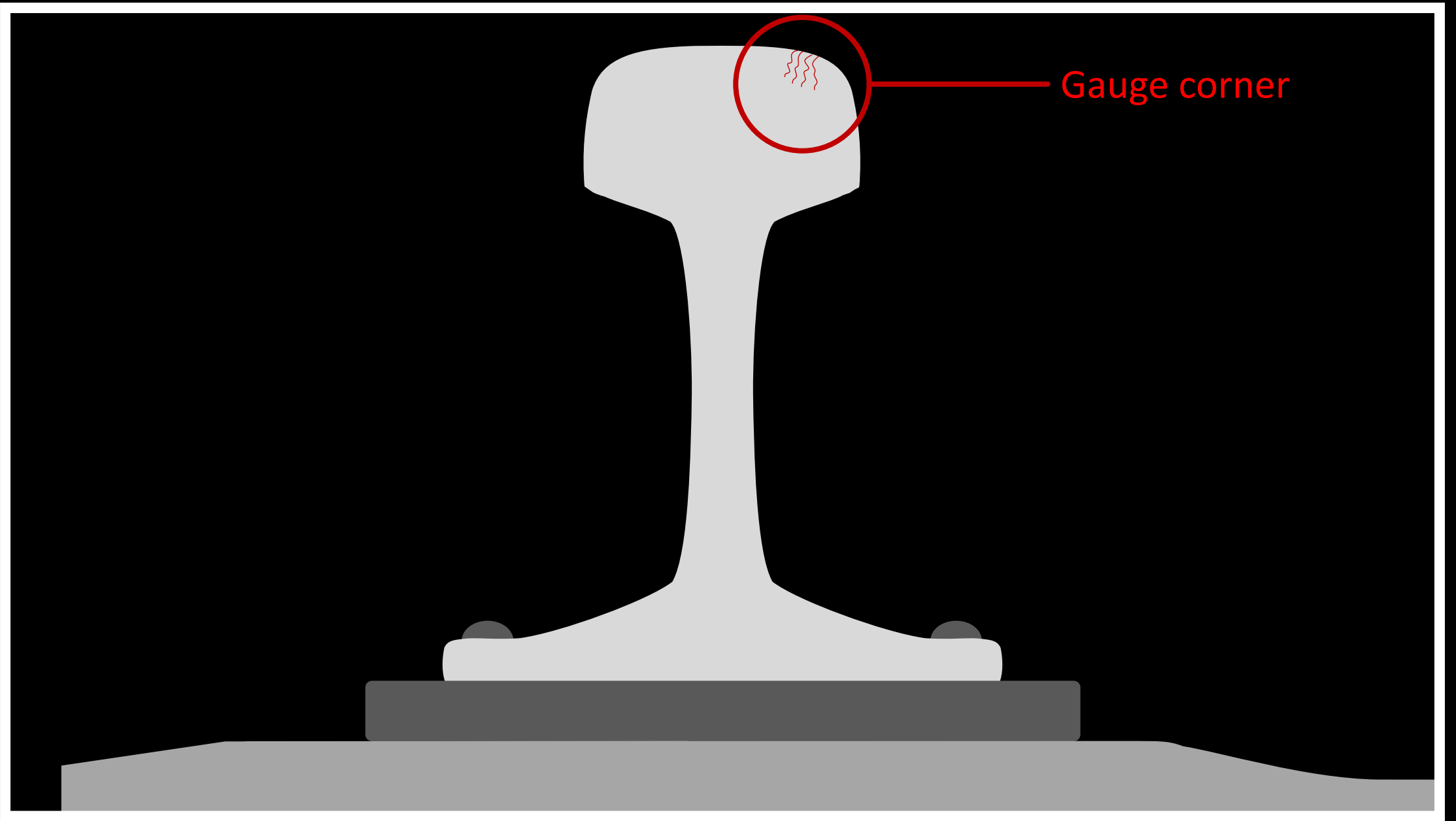
**Alastair Morton**

**Chairman of the Strategic Rail Authority**





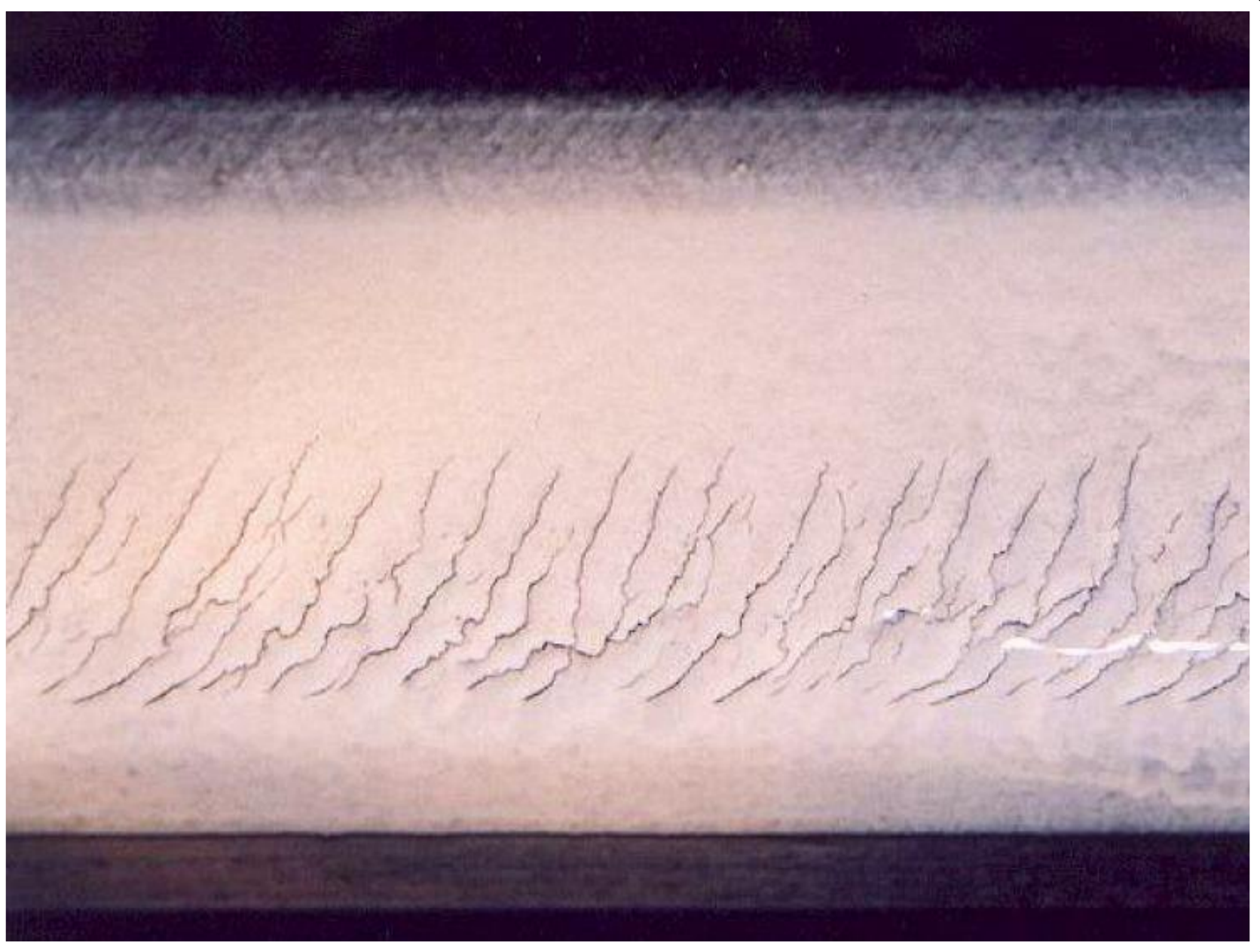




Gauge corner

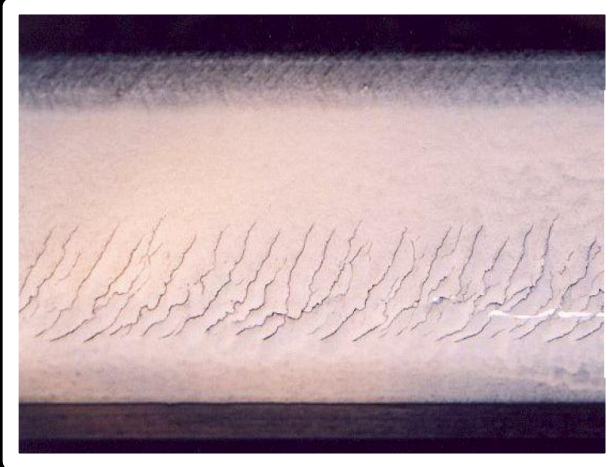






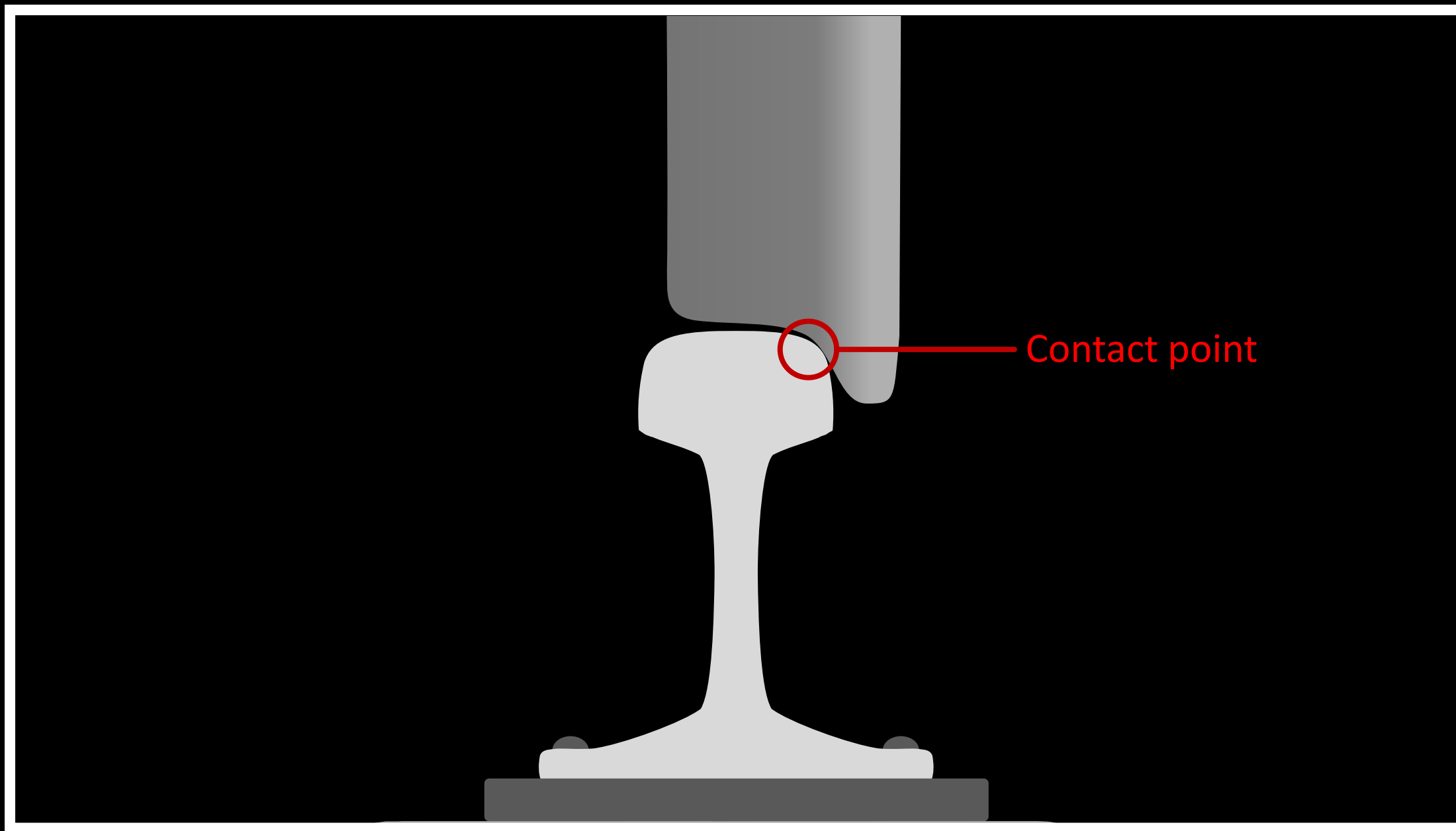


**An incomplete appreciation of the risks presented by gauge corner cracking, and**



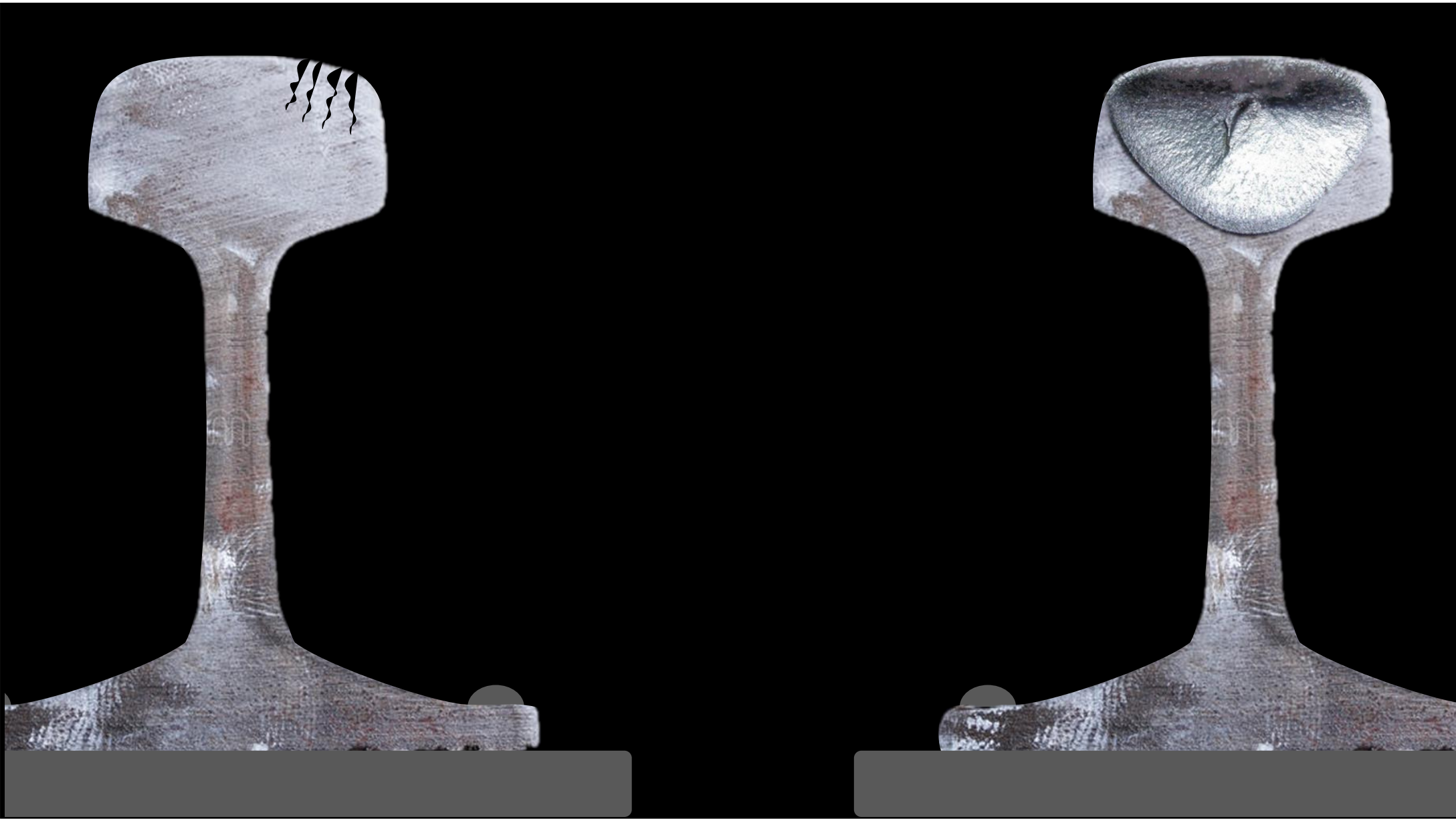
**A consequent failure to develop and disseminate comprehensive instructions on its identification and the control measures required’.**





Contact point





**Mar  
1995**

**U14  
Probe**

**serco**

**JARVIS**

**Balfour Beatty**  
Rail

**RAILTRACK**

Sep  
2000

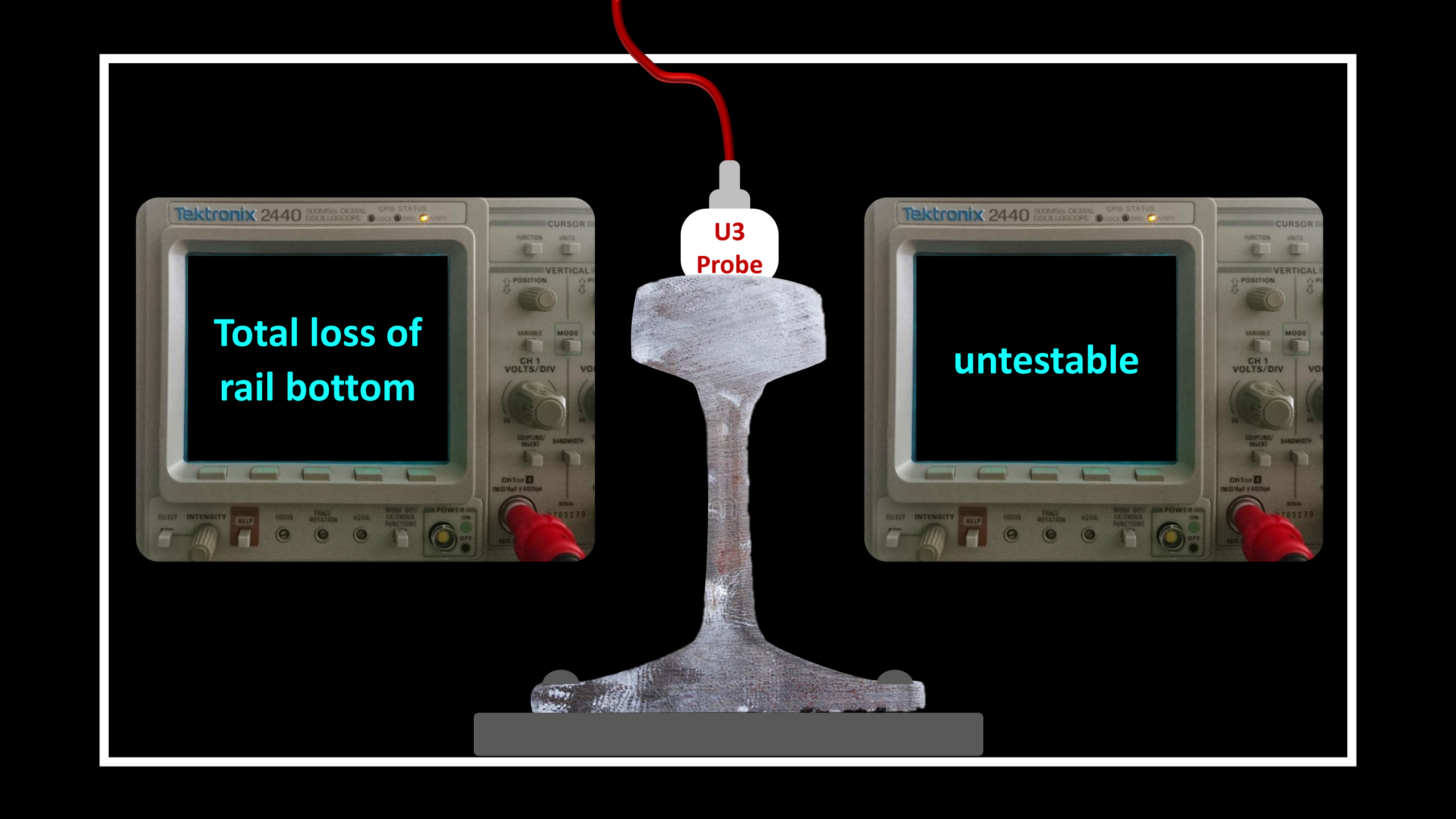
serco

JARVIS

**Balfour Beatty**  
Rail

RAILTRACK





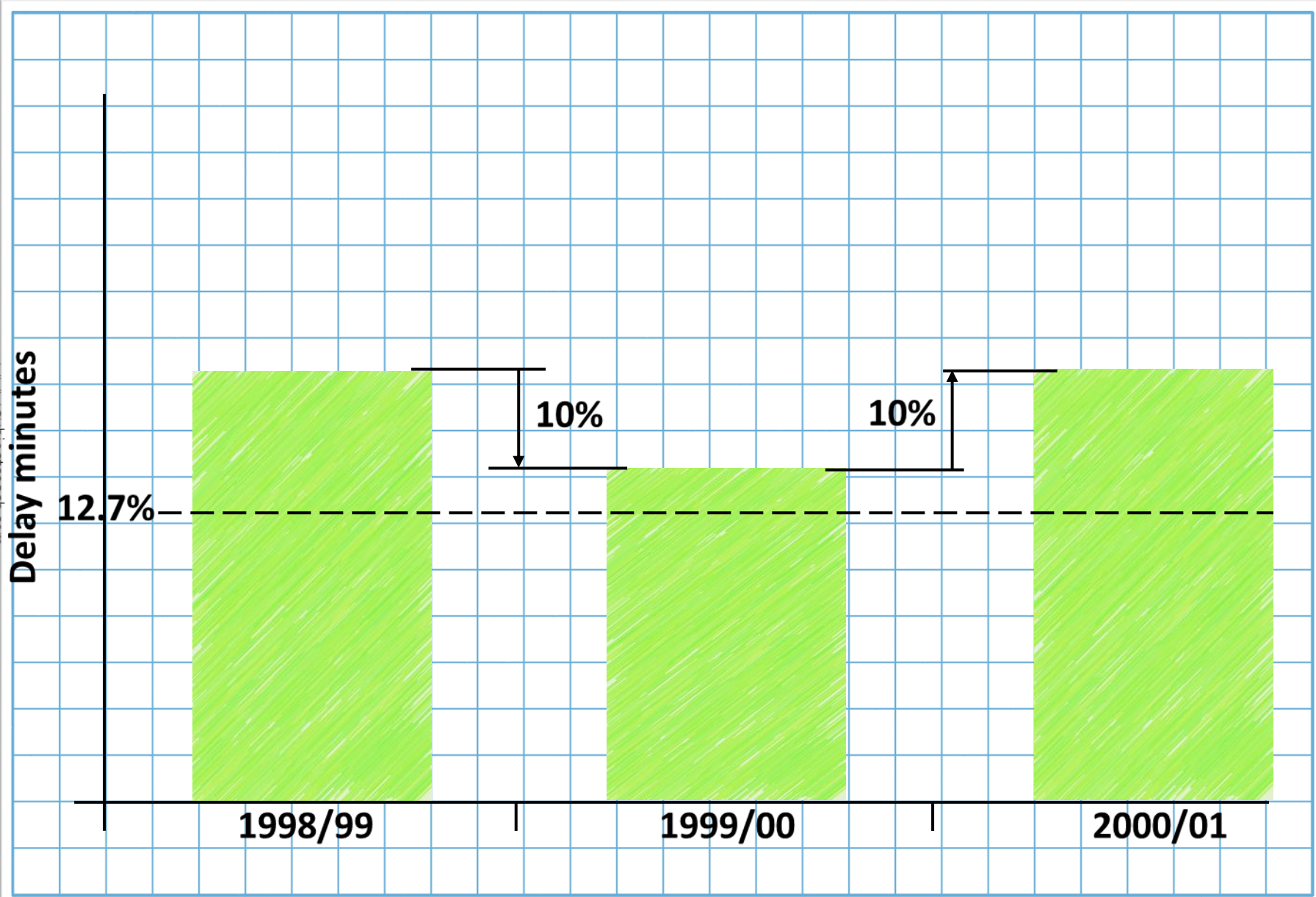
**Total loss of  
rail bottom**

**U3  
Probe**

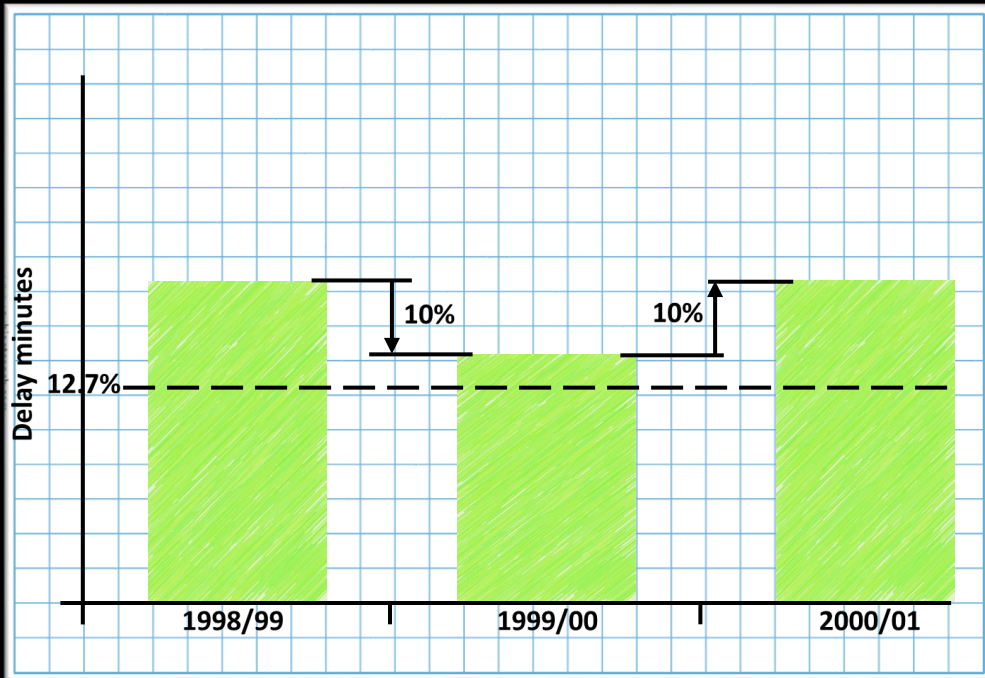
**untestable**



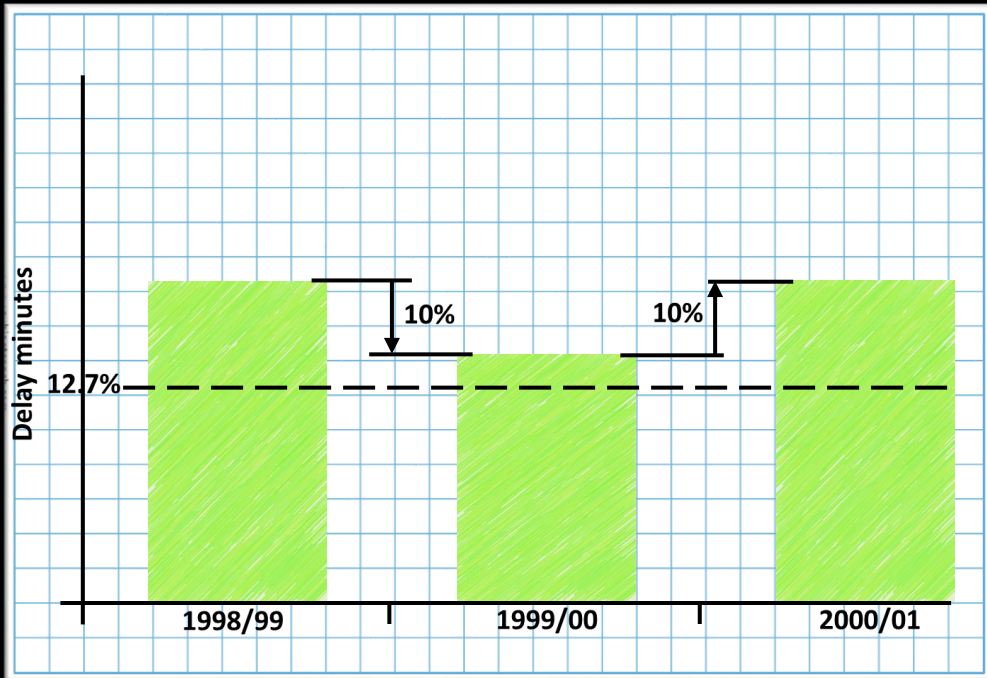
**Oct 9  
2000**



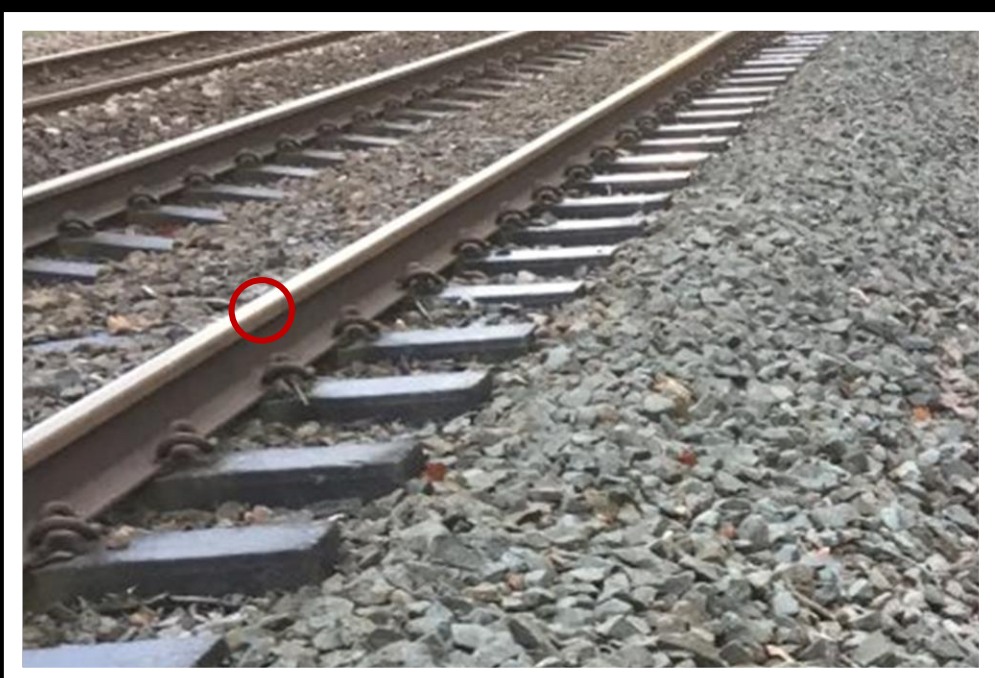
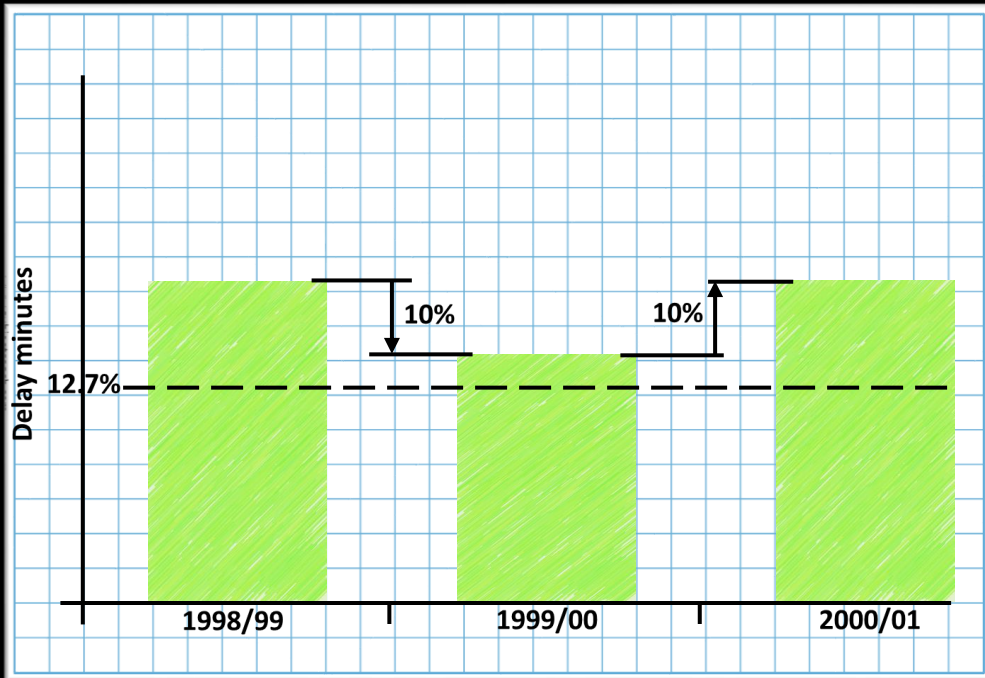






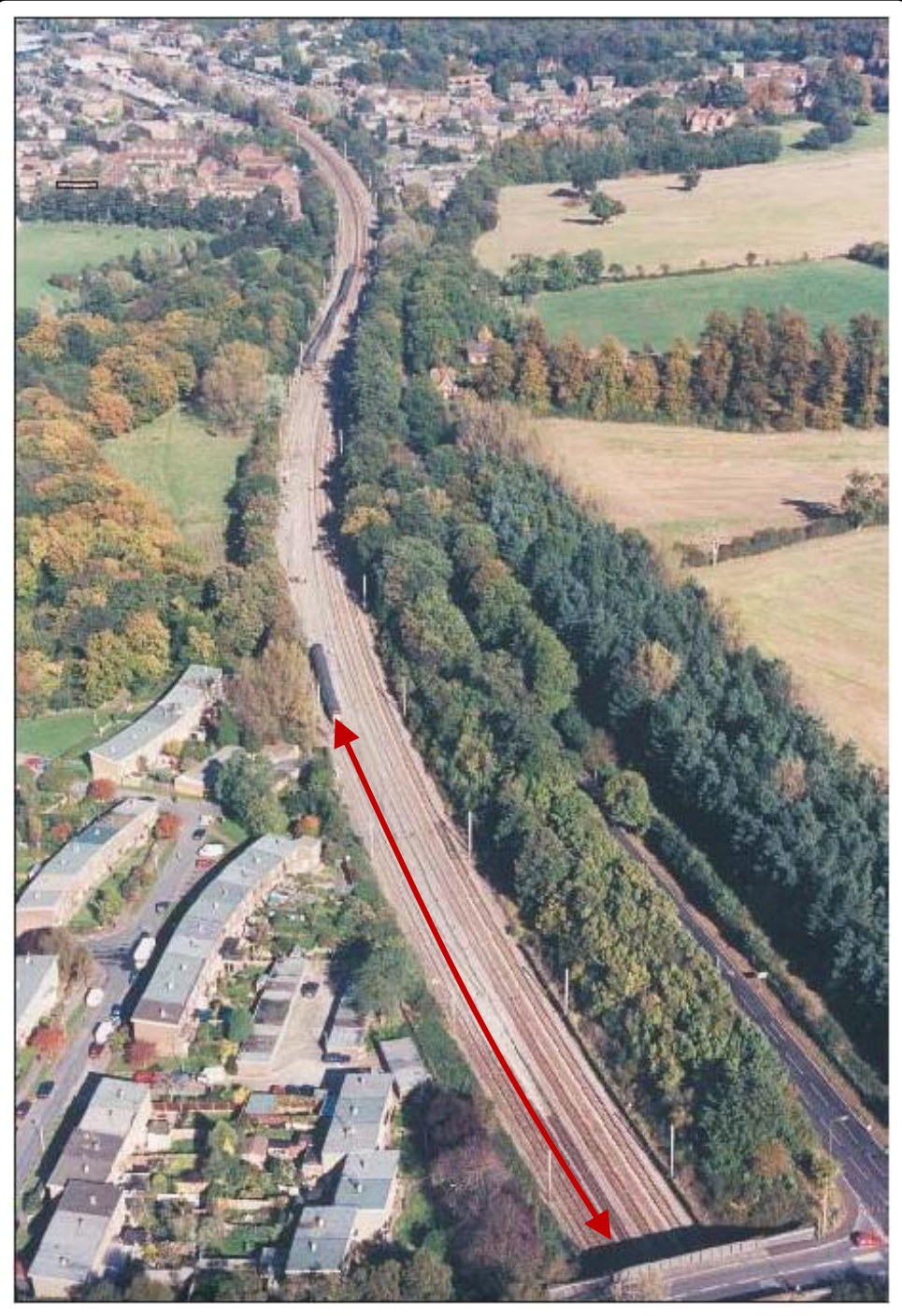










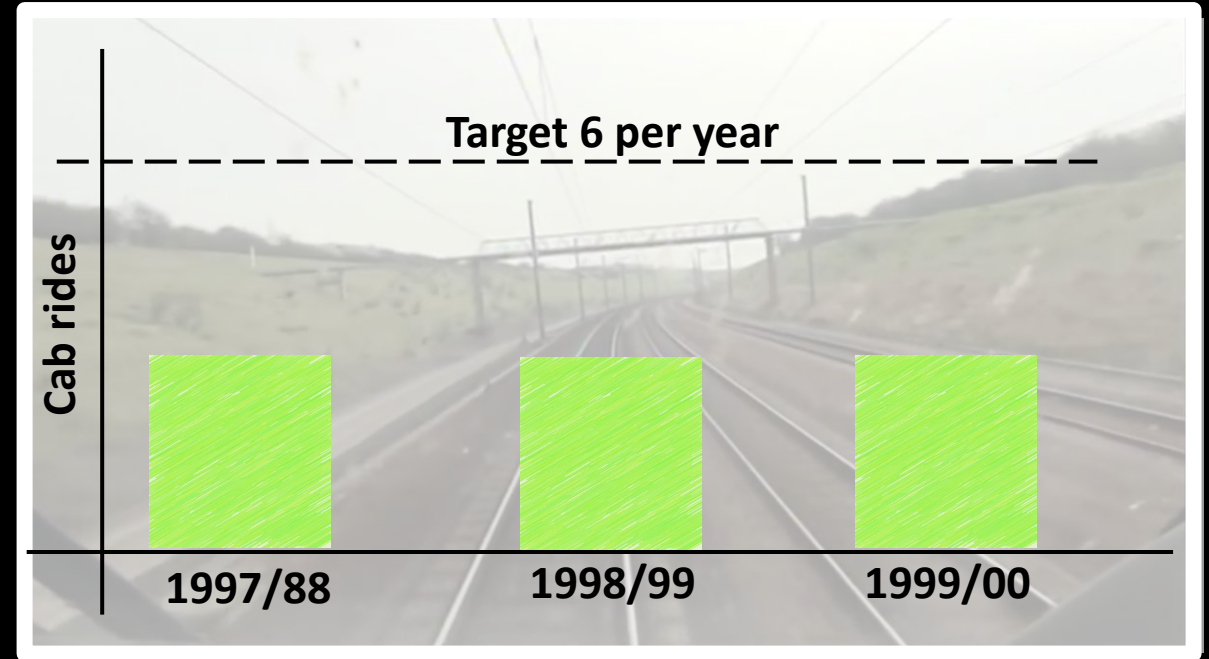
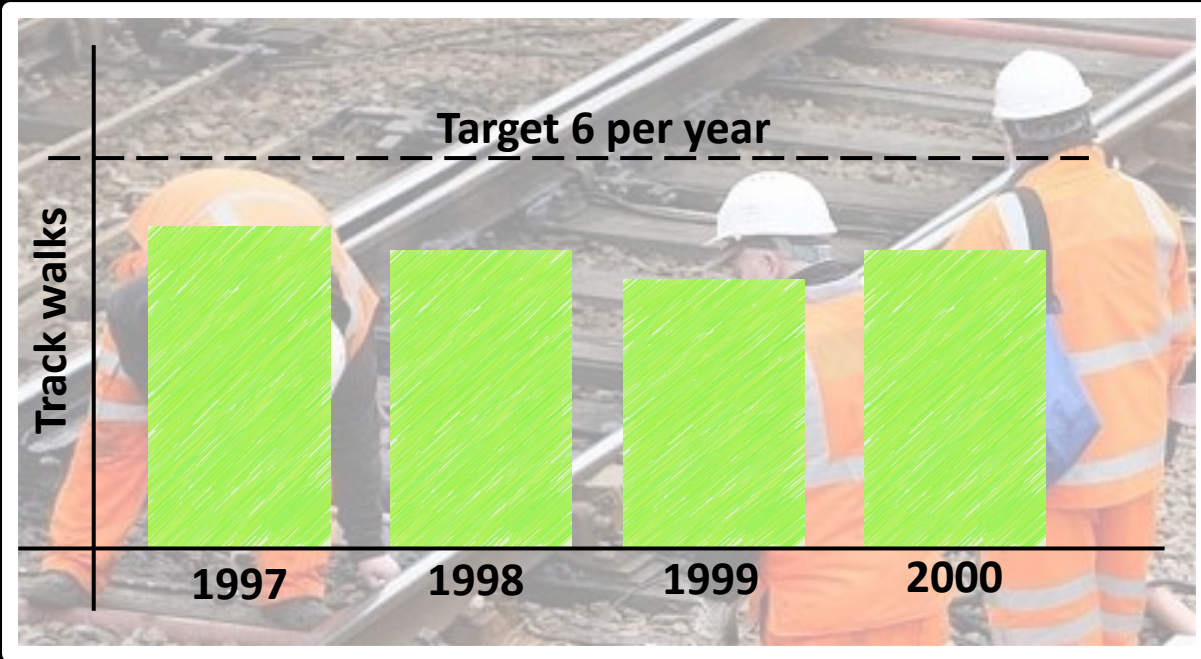




*I have never been trained to recognise Gauge Corner Cracking or understand what risks it brought with it.*

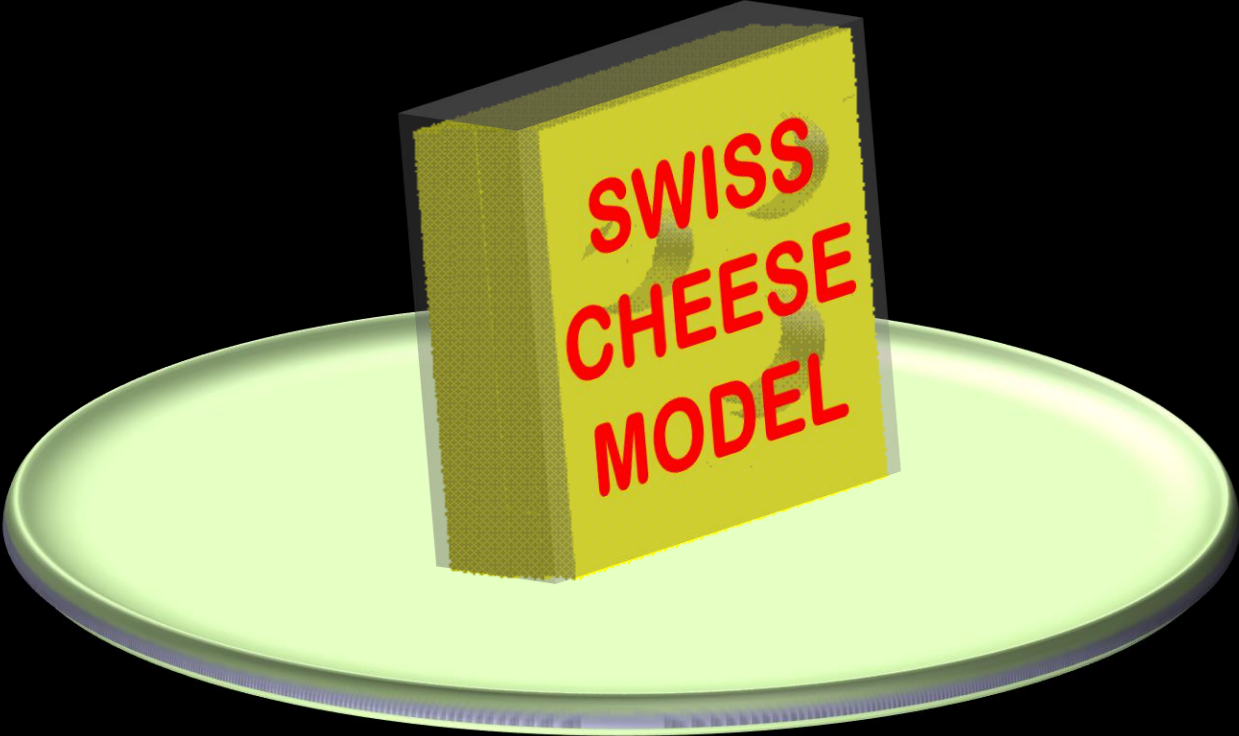
# Balfour Beatty

## Rail



# Balfour Beatty

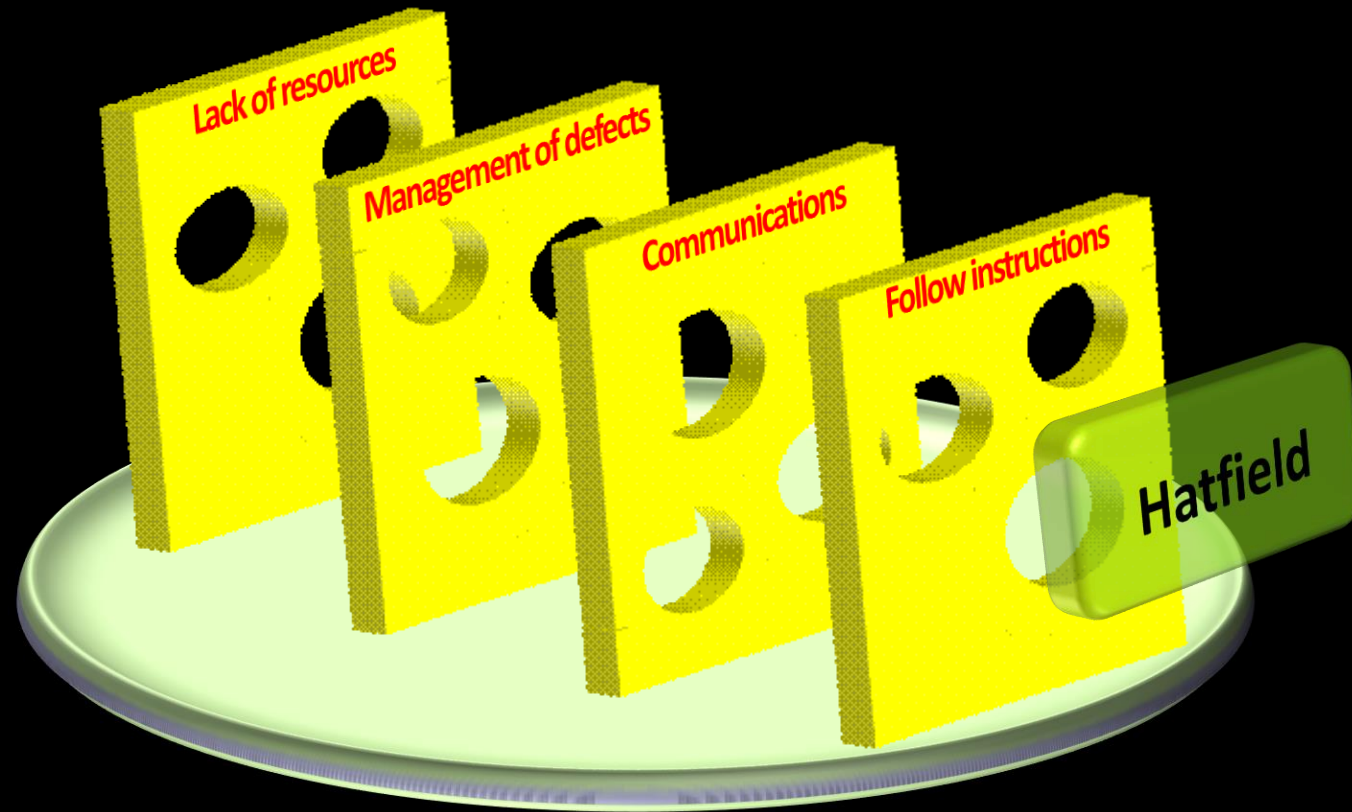
Rail





# 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 12<sup>th</sup> December 1988**  
**35 fatalities, 484 injured**



**Piper Alpha 6-7<sup>th</sup> July 1988**  
**167 fatalities**



**Ladbroke Grove 5<sup>th</sup> October 1999**  
**31 fatalities, 258 injured**



**Hatfield 12<sup>th</sup> 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

RAILTRACK

David Ventry,  
Professional Head of Track at Railtrack HQ.

May  
1999

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

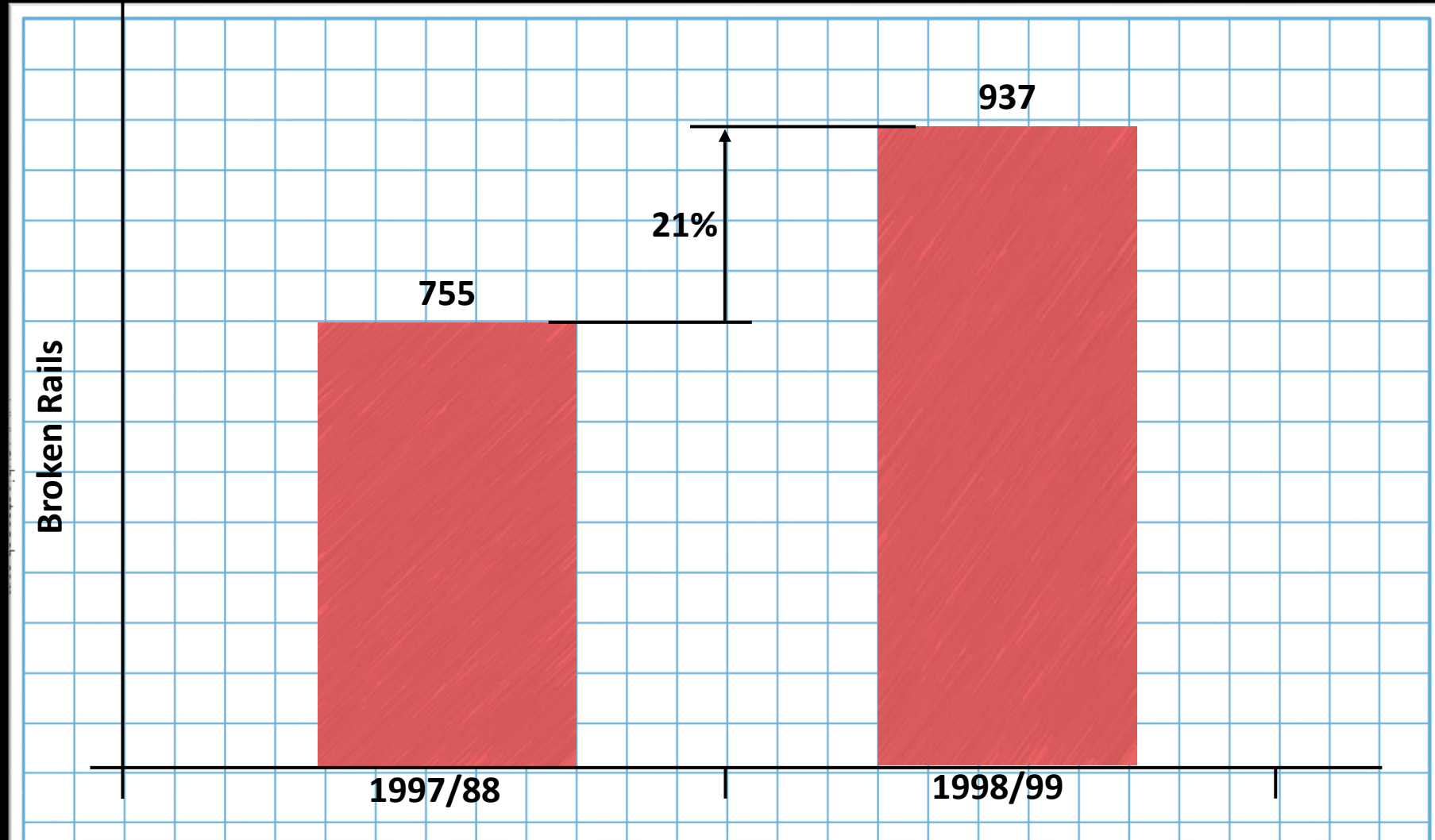
*there was 'widespread noncompliance' with track maintenance standards and good practice.*

*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

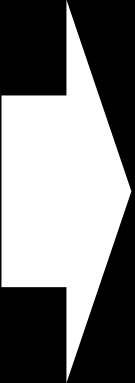
Replacing assets only  
when necessary and  
not at fixed time



RAILTRACK

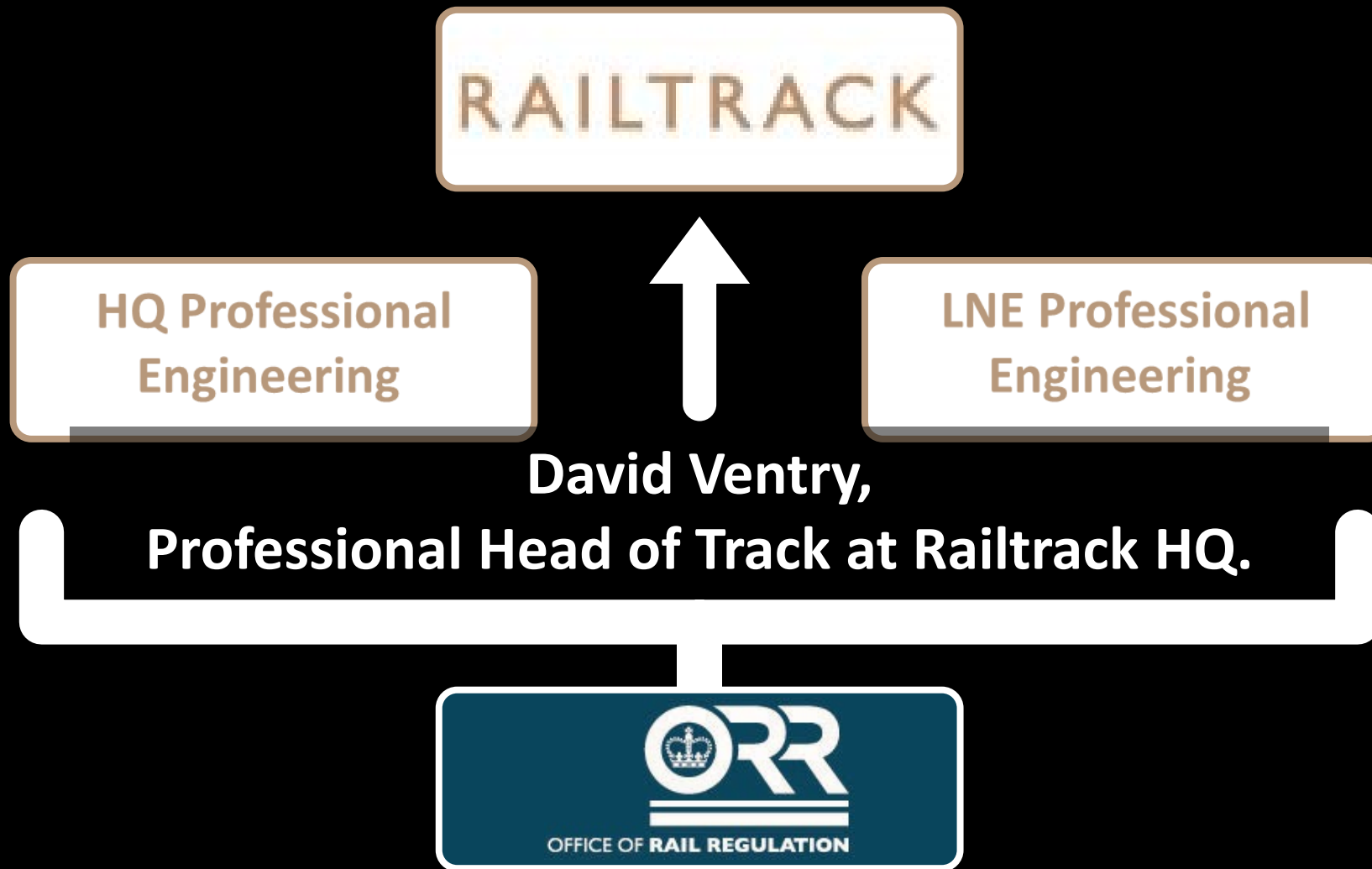
Asset  
Database

Project Destiny  
strategy



Replacing assets only  
when necessary and  
not at fixed time





***‘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



Poor  
Maintenance  
Non-compliance  
with standards

it is very clear from recent events that [it was] not providing resources adequate to tasks and scope of the maintenance contract' Please investigate





Health & Safety  
Executive



**Tom Windsor**  
**Rail Regulator**

**Transp**  
**Techno**  
**Centr**



**Metallurgy**

**Wheel-rail  
interaction**

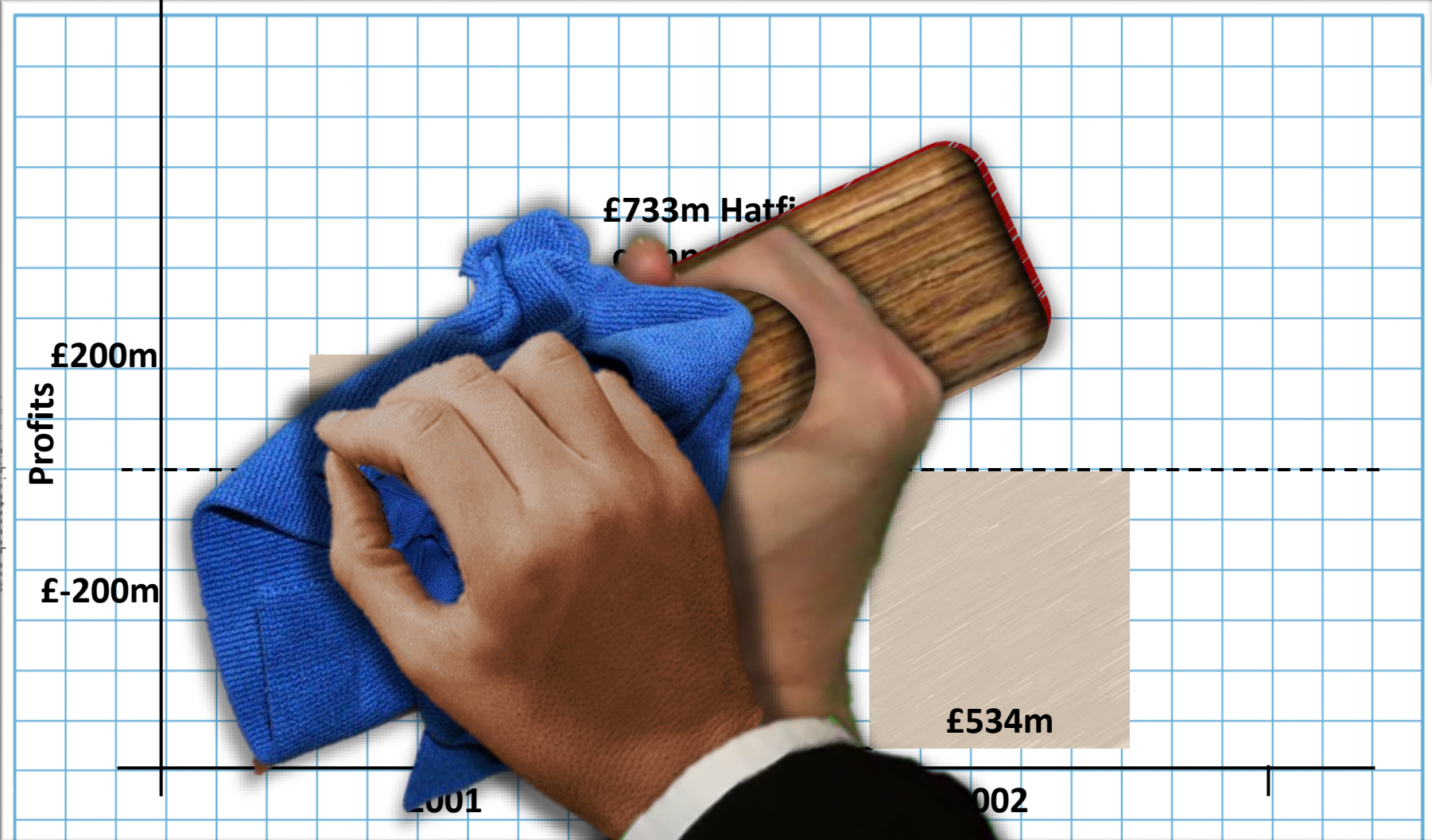
**Brake design**

**Suspension design**

**Ultrasonic rail  
flaw detection**

# RAILTRACK

Nov  
2000





RAILTRACK

**Balfour Beatty**  
Rail



**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**





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

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

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



£6.50

2000

## Safety Certificate or Safety Authorisation



Ladbroke Grove  
Accident 1999

Lord Cullen Inquiry







A Better,  
Safer  
Railway

**RAIB**

Rail Accident Investigation Branch

**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

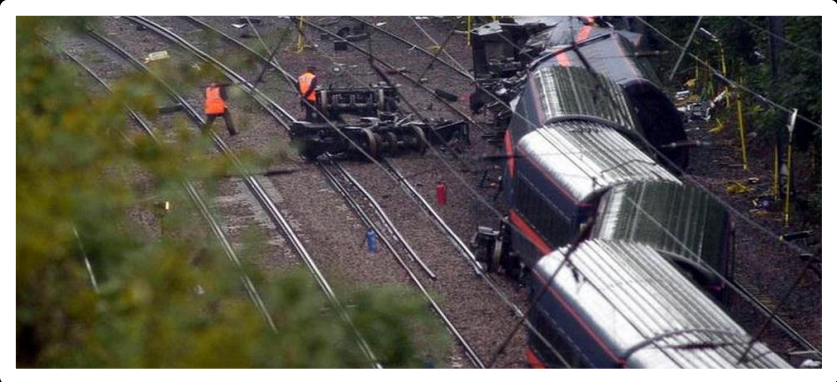
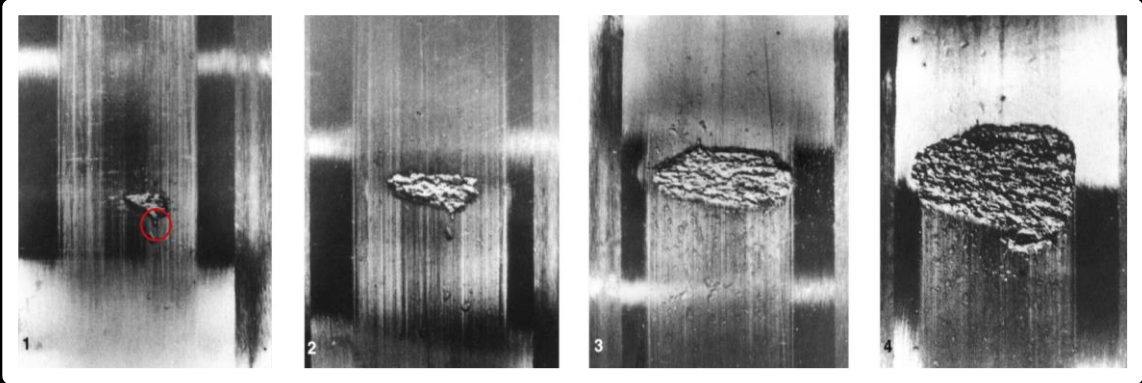
Vehicle/Track systems interface

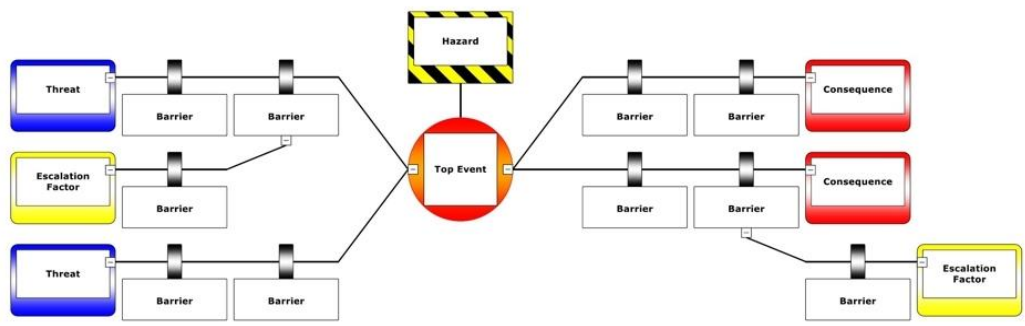
Data & Information systems interface

Vehicle/Vehicle system interface

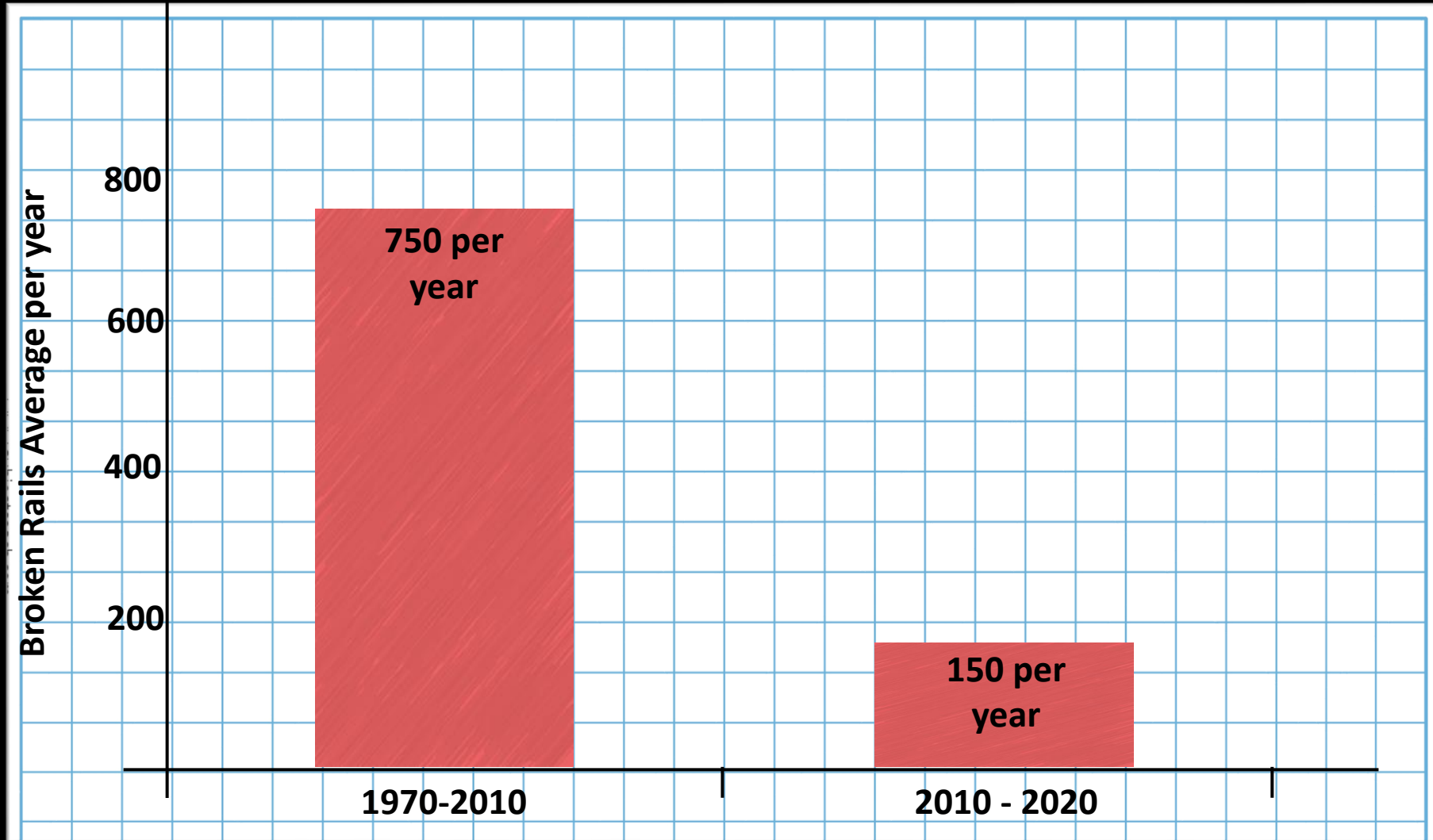
Vehicle/Structures systems interface

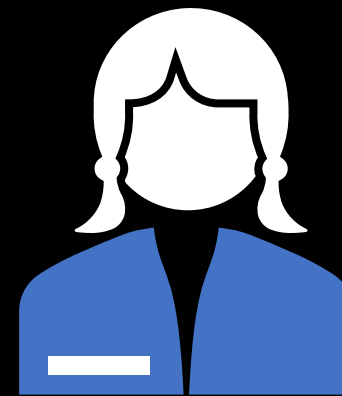
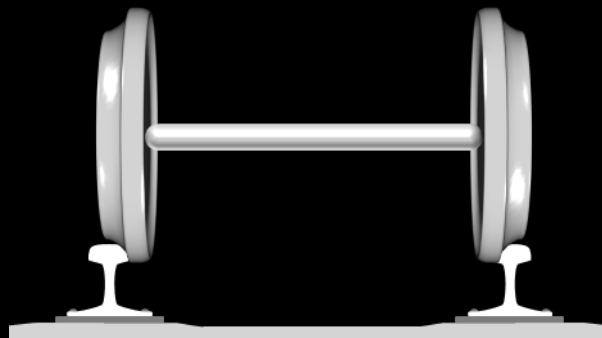
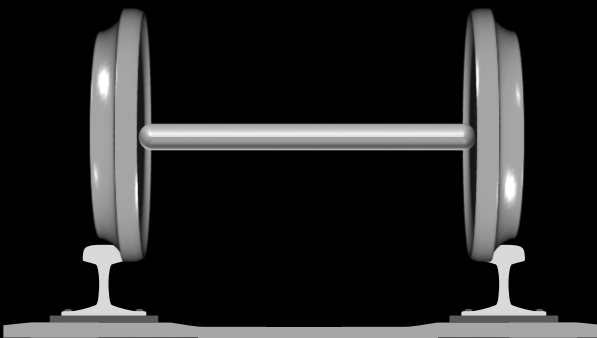
Vehicle/Train control & communications











Corporate Memory ?





A Better,  
Safer  
Railway

**Greg Morse**  
**LHSBR Editor and Operational Feedback Lead**  
**Health and Safety Management**