It’s just a bridge. How difficult can it be?

Robert Dean MEng CEng FICE MIET

Britain's railway network

Key industry stakeholders

Network Rail	Operates, maintains, renews and enhances the network
Train and Freight Operating Companies	Operate trains, rolling stock and railway 'service'
ORR Office of Rail and Road	Regulates (independent of government) safety efficiency and value for money
Department for Transport; Transport Scotland	Specify and fund rail services in England/ Wales and Scotland respectively

LOCOMOTIVES ON THE STO
TALLIS'S
RAILWAY
MAP
OF
GREAT BRITAIN
SHOWING THE RAILWAYS COMPLETED,
AND THE STATIONS ON EACH LINE, UP TO THE PRESENT TIME,
WITH THE STEAM-BOAT TRACKS
FROM THE PRINCIPAL BRITISH AND CONTINENTAL SEA-PORTS.
IRISH SEA
ENGLISH CHANNEL
JOHN TALLIS & COMPANY

60163
BRITISH RAILWAYS

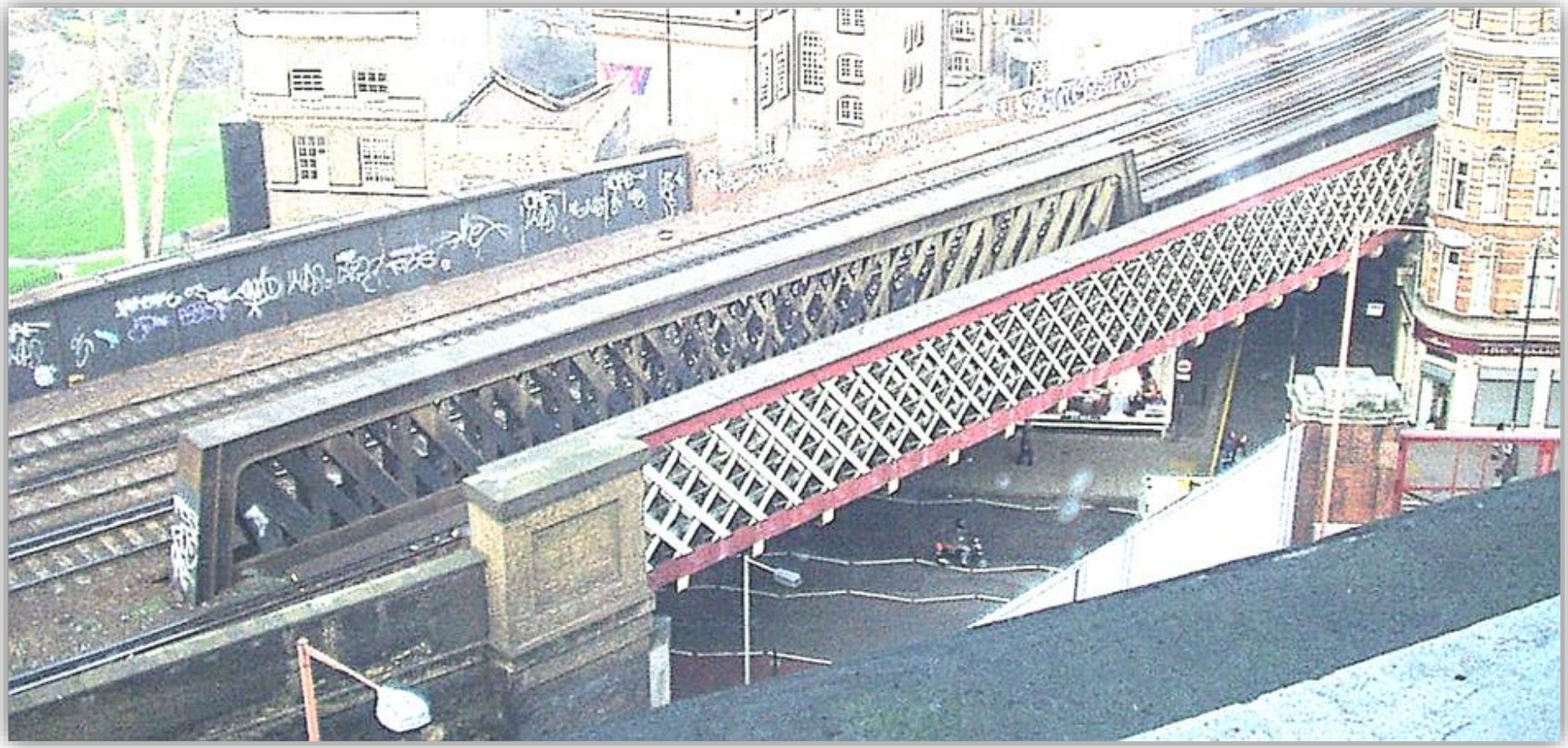
INTERCITY

The structures asset portfolio

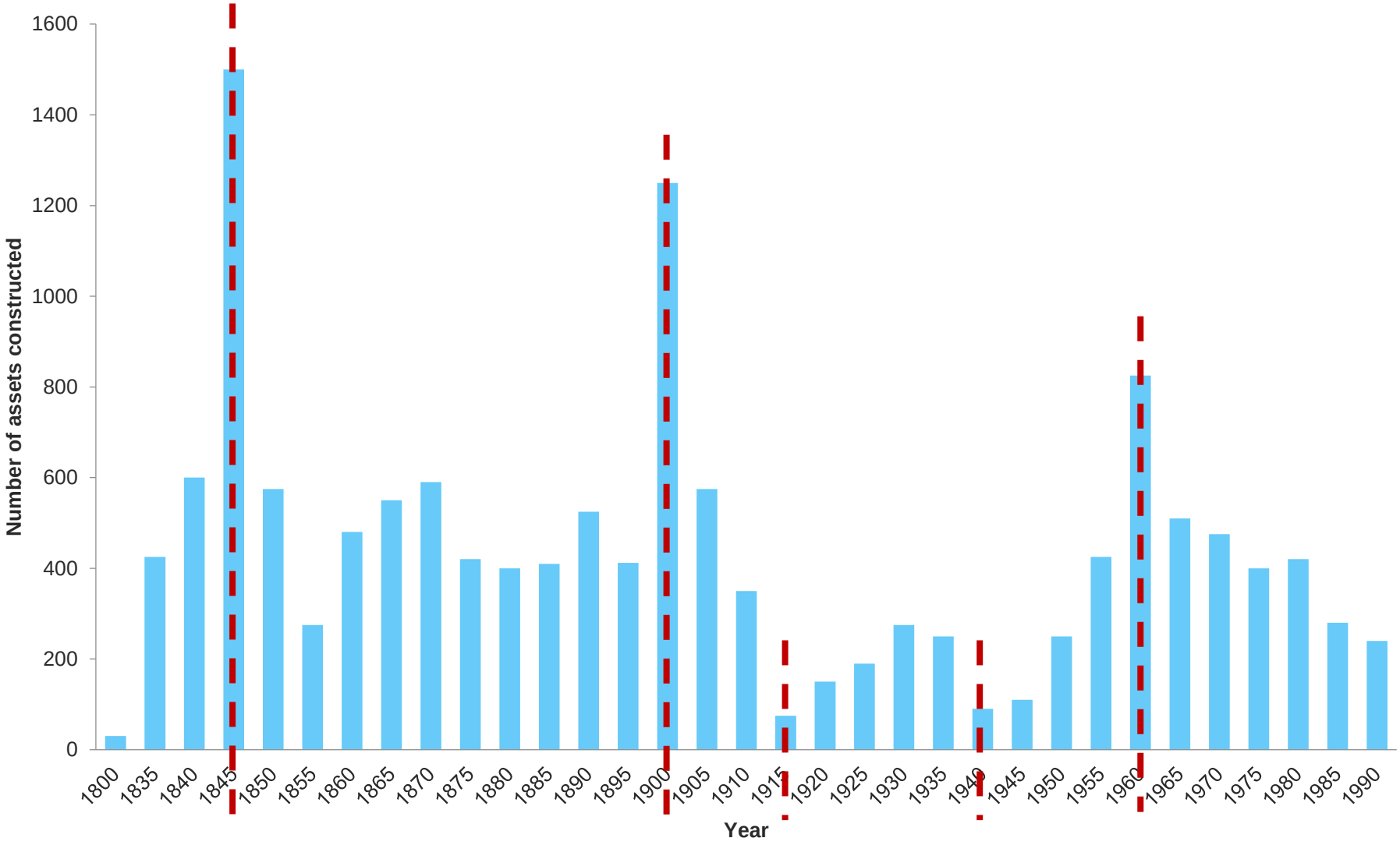
- 28,000 bridges
- 22,000 retaining walls
- 21,000 culverts
- 600 tunnels
- 200 miles of coastal defence

- 260 asset management staff

- £2.1bn for current 5 year period



Aging…


Number of assets constructed
1600
1400
1200
1000
800
600
400
200
0
1800
1835
1840
1845
1850
1855
1860
1865
1870
1875
1880
1885
1890
1895
1900
1905
1910
1915
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
Year

maintain asset register

structural assessment

vehicle incursion risk assessment

bridge strike assessment

change in use

examination

managing risk of adverse / extreme weather

outside party interfaces

manage abnormal load requests

scour assessment

maintenance

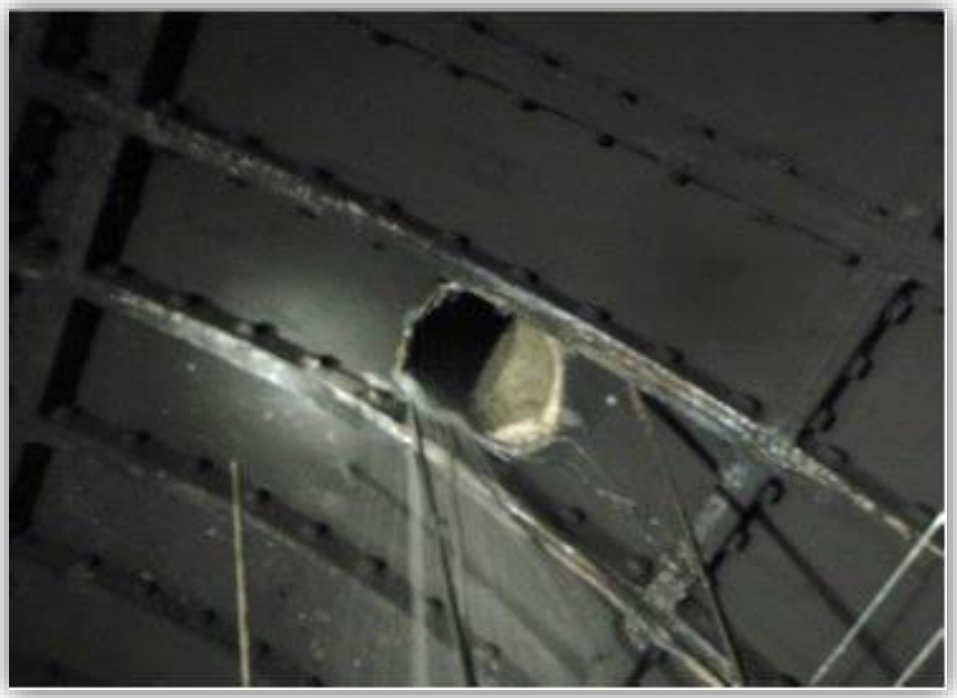
Renewals / deferrals

manage interfaces with works carried out by other disciplines

manage ad hoc reports (control, community relations, close call)

Impact

Construction and maintenance



Adverse / Extreme Weather

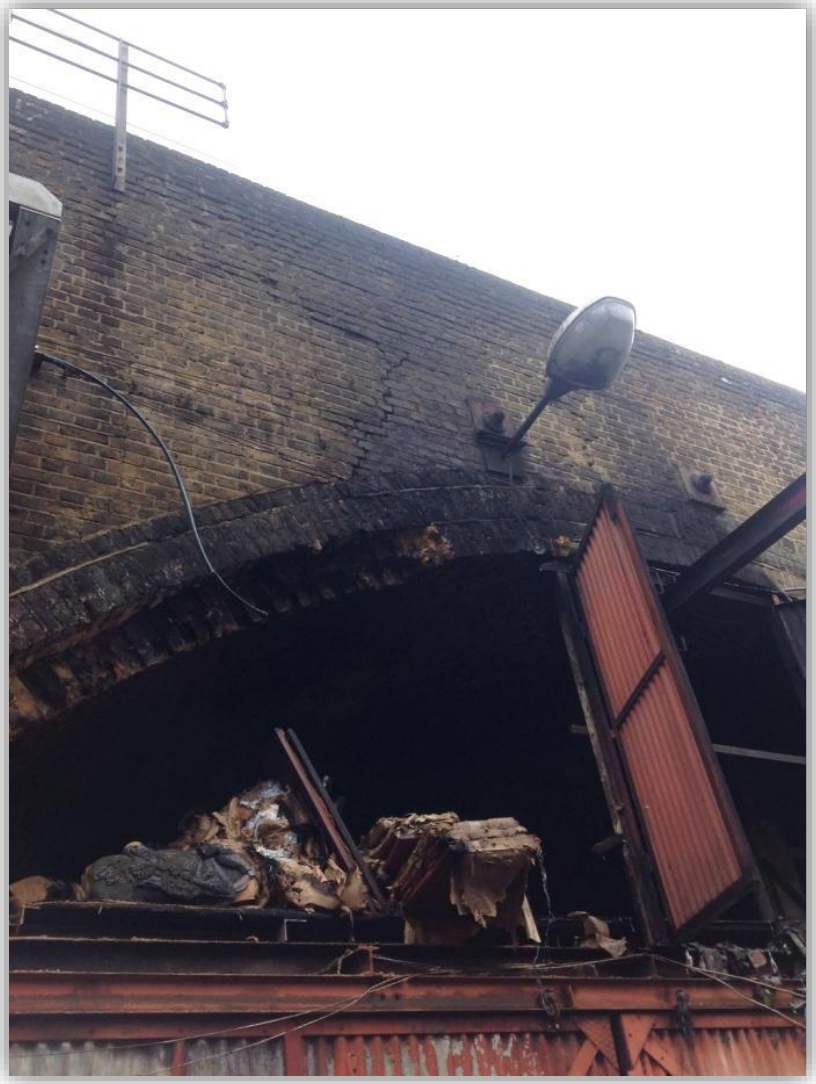
Adverse / Extreme Weather

Scour/ Erosion

Overloading by live loads

Overloading by dead loads

Fire and Explosion



Mining Subsidence

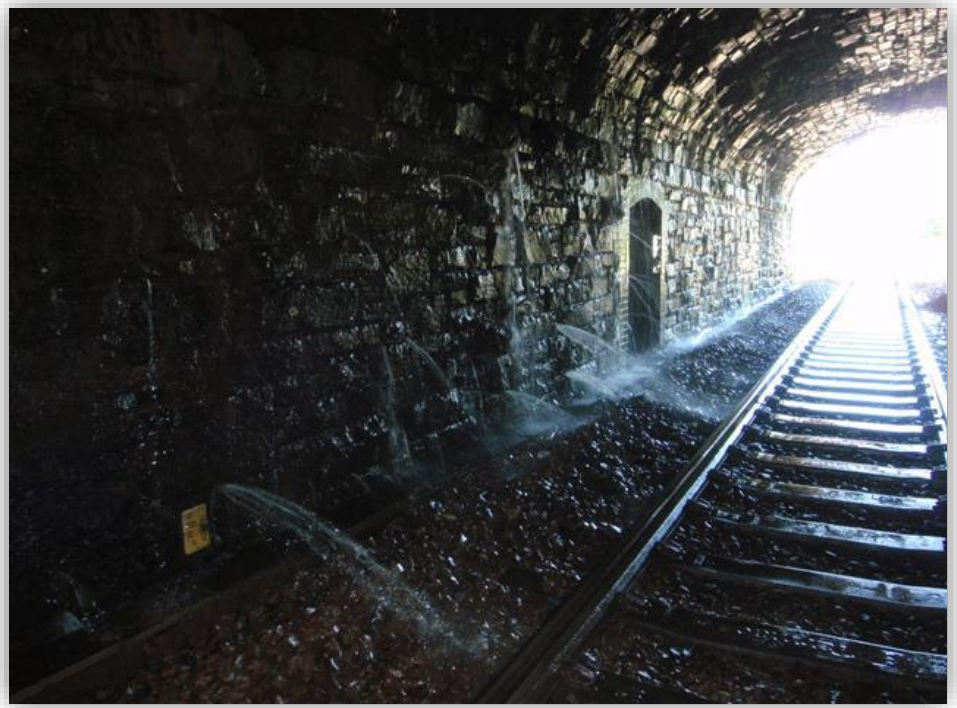
Ground movement

Material Degradation

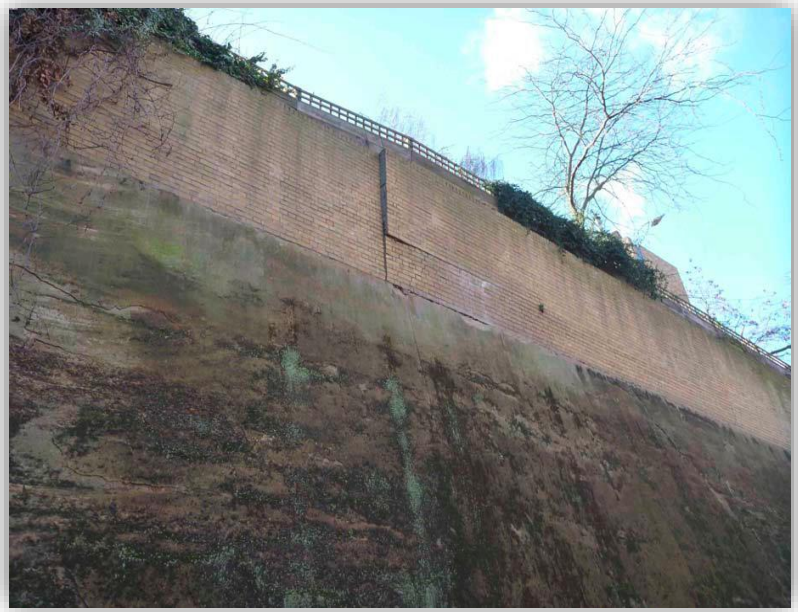
Metal Fatigue

Vegetation

Failure of services



Failure of adjacent 3rd party asset



Vibration

Vandalism, trespassing and malicious acts

So what are the challenges?

Acorn TUBE 65C102 Co-Processor
Acorn VFS
BASIC
>_
1986
RGB Colour Monitor
LV ROM PLAYER

Thank you…