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The Challenges of Moving from a Project to an Operational Railway

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Contents

1	<i>Network Rail and the British Railway System</i>	4
2	<i>Creating a Strong Safety Culture</i>	7
3	<i>Increasing Awareness of Operational Planning and Execution</i>	14
4	<i>Developing a Local Railway Operating Capability</i>	20
5	<i>Conclusions</i>	23

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Network Rail and the British Railway System



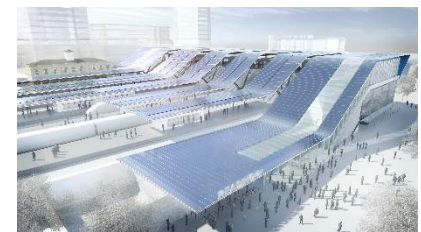
Key facts

The British Rail System

- ▶ £50 billion invested in our railway since 2002
- ▶ 29 billion tonne-kms of freight carried every year
- ▶ 1.6 billion passenger journeys every year
- ▶ 7 million train movements every year
- ▶ 31 operating companies use our infrastructure in the world's most liberalised railway

Network Rail

- ▶ £6 billion business
 - ▶ 35,000 dedicated employees
- We own, run, maintain and develop:
- ▶ 48,000 signals
 - ▶ 32,000 km of track
 - ▶ 30,000 bridges, tunnels and embankments
 - ▶ 2,500 stations leased to train operators
 - ▶ 19 major stations which handle 950 million passenger journeys





We are one of Europe's leading railways .



Source: European Commission Rail Study, March 2013

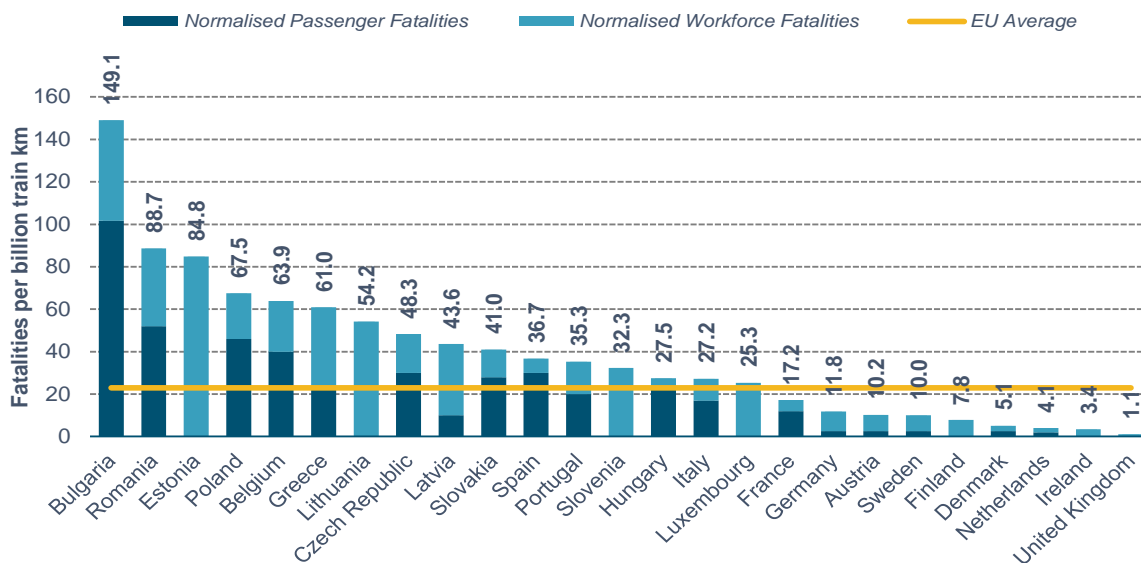
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Creating a Strong Safety Culture



Network Rail's experience

Passenger and workforce fatality rates on European Union railways (2008-2012)



- ▶ Took over the GB Railway in 2002 at a time of serious concerns over the safe stewardship of the railway and large numbers of safety related speed restrictions
- ▶ By 2008 the railway had stabilised and from 2008 to 2012 the European Commission ranked the British railway as the safest in Europe
- ▶ Since then the UK has been ranked either first or second each year

Network Rail's safety vision



**everyone
home safe
every day**

Developing a **safety culture** through our:

- ▶ Life Saving Rules
- ▶ Fair culture – learning not punishing
- ▶ Open reporting culture
- ▶ Safety conversations
- ▶ Training courses
- ▶ Reviewing non-technical skills for key safety positions – particularly for ‘Controllers of Site Safety’

What is a workplace safety culture?

A reflection of the way safety is managed in the workplace and is demonstrated by:

- ▶ Employee attitudes towards safety, and their beliefs and perceptions of the 'value' of safety
- ▶ Existence of, and compliance with, simple rules designed to ensure safety
- ▶ Processes to monitor and manage safety
- ▶ Belief that safety issues receive the attention warranted by their significance

From construction to operational use

Construction Site Safety Risks

- ▶ Working at height – ladders, scaffolding, roofworks and tower cranes
- ▶ Fires
- ▶ Mobile plant and machinery
- ▶ Groundworks and excavations
- ▶ Temporary works
- ▶ Risk of building collapse
- ▶ Heat and exhaustion
- ▶ Hazardous substances
- ▶ Noise and vibration

Operational Railway Safety Risks

- ▶ Persons struck by train – can be through human error, poor visibility, infrastructure/vehicle failure
- ▶ Train derailment and collision – can be through human error, infrastructure/vehicle failure, external causes such as landslip
- ▶ Public safety risk

AND

All of the constructions site safety risks!

Applying our experience to the Middle East

- ▶ Our vision:
 - ▶ “Everybody Home Safe Every Day”
- ▶ Our belief:
 - ▶ “Outstanding safety performance and outstanding business performance go hand in hand”
- ▶ Focus will be on:
 - ▶ Rolling out our “Life Saving Rules”
 - ▶ Safety briefings and safe systems of work
 - ▶ Robust operational and infrastructure management
 - ▶ Competence management procedures
 - ▶ Risk management procedures
 - ▶ Audit and assurance

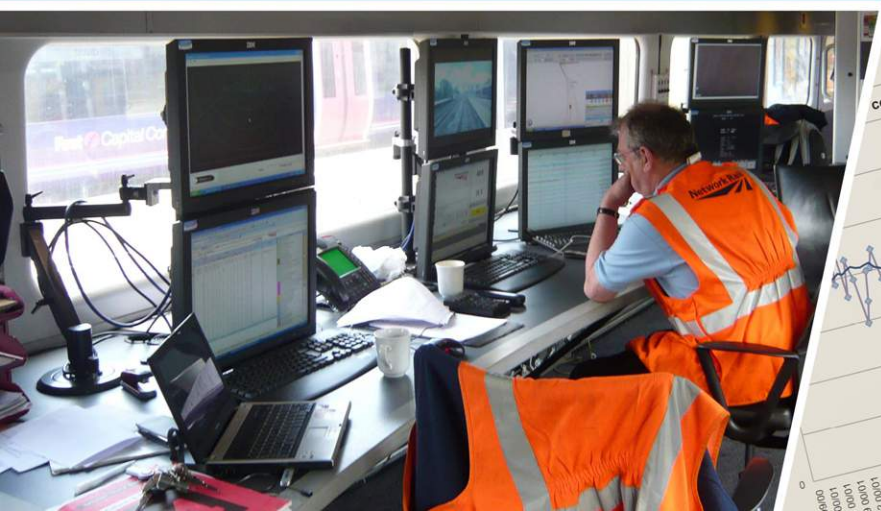
Our goal in the Middle East

- ▶ Employee trust
- ▶ Customer trust – freight and passengers
- ▶ Achieve top European levels of safety performance as measured by:
 - ▶ Infrastructure accidents per million train km
 - ▶ Weighted workplace accidents per million train km
 - ▶ Audit compliance



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Increasing Awareness of Operational Planning and Execution



The Need for Operational Planning

- ▶ Operational Planning is a key activity for any successful railway.
- ▶ A professionally planned railway operation provides:
 - ▶ Customer service – Passengers and Freight Forwarders know when a train will arrive and depart
 - ▶ Better resource allocation and management including rolling stock and train crew
 - ▶ Track access can be planned
 - ▶ Improved safety
 - ▶ Efficient use of capacity and resources
 - ▶ Performance monitoring and improvement

Timetables don't grow on trees

A timetable is built up from a number of key elements, such as:

- ▶ Traction types/units/locos;
 - ▶ Sectional running times (SRT);
 - ▶ Headway, margins, re-occupations and allowances;
 - ▶ Methods of working (Absolute Block, Track Circuit, ERTMS/ETCS etc.);
 - ▶ Engineering access plans – for day to day maintenance to ensure trains can run to the plan;
 - ▶ Engineering access plans – for major renewal or enhancement works;
 - ▶ Crew and unit requirements.
- ▶ Calculating engineering allowance to allow for Temporary Speed Restrictions (TSR) and other short term infrastructure issues;
 - ▶ Network Trains path requirements (track maintenance trains, eg sand trains.);
 - ▶ Adding performance times into the timetable;
 - ▶ Producing the Timetable Planning Rules' book, detailing all of the information required to plan trains;
 - ▶ Customer plans;

How much operational planning is required?

The current process on the GB railway:

- ▶ New timetable work begins 104 weeks before timetable implementation
- ▶ 64 weeks before – NR publishes proposed rule changes to planning process – for agreement with train operators by 41 weeks before
- ▶ 55 weeks before, major timetable changes published and consultation commences
- ▶ 40 weeks – start of detailed timetable preparation
- ▶ 26 weeks – NR publishes new Working Timetable, subject to appeals
- ▶ 22 weeks – end of appeal period
- ▶ 15 weeks – timetable briefing completed
- ▶ 0 weeks – timetable commences

Measuring against the Plan

- ▶ Operational planning affords an opportunity for monitoring performance and increases awareness of operational and logistical requirements:
 - ▶ Is rolling stock ready on time?
 - ▶ Did train crew arrive at the depot on time?
 - ▶ Was the train loaded and dispatched on time?
 - ▶ Did train pass key locations at expected time? Was it running to speed?
 - ▶ Did any disruptive events occur? How disruptive?
 - ▶ How often are trains delayed? What impact does this have on expected freight quantities or customer experiences?

Train planning facilitates performance improvement

- ▶ In GB, robust train planning has facilitated specific performance improvement work streams including:
 - ▶ Enabling signallers and controllers to spot key trains with limited turnaround times or of particular importance
 - ▶ Route and time-of-day specific contingency plans developed to minimise disruption when things go wrong
 - ▶ Schedules scrutinized against train running data for poorly performing or key trains
 - ▶ Signaller regulation decisions reviewed and improved
- ▶ GB performance has improved hugely over the last ten years, with punctuality MAA up from 81% 2003/04 to 90% MAA at present

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Developing a Local Railway Operating Capability



Key Challenges

- ▶ Relatively new to railway – need to develop institutional capability
 - ▶ Schooling and training
 - ▶ Common language
 - ▶ Technical guidance/advice
- ▶ Need to raise profile of railway to other parties such as police or camel trains
- ▶ Need to develop bespoke solutions to unique problems (e.g. sand, heat)
- ▶ Need to convince people that a passenger service is safe and worthwhile



Developing the capability

To develop a railway capability that is focussed on:

- ▶ Safety
- ▶ Performance
- ▶ Customer Service

Through the
application of

- ▶ Knowledge
- ▶ Experience; and,
- ▶ Professionalism

We will:

- ▶ Link competence of infrastructure operations and maintenance staff to internationally recognized vocational qualifications; including asset management
- ▶ Embed initial training and development into a “route to competence journey,”
- ▶ Use “adult learning” training methods to embed the learning through a variety of approaches
- ▶ Empower local people to grow their careers in SAR

Conclusions



Conclusions

Embedding a strong safety culture is fundamental to running an efficient railway that is trusted by employees and customers to ensure that everyone is home everyday safely

Developing a railway that is founded upon professional staff and sound asset management is essential if it is to be commercially successful

This a marathon not a sprint!

Network Rail Consulting is here is help develop a strong Saudi railway capability incorporating the lessons learnt from the UK

Thank you



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