The Challenges of Moving from a Project to an Operational Railway

Nigel Ash, Managing Director, Network Rail Consulting

2nd Annual Saudi Arabia, Transport & Infrastructure Conference, April 2015
Contents

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

© Network Rail Consulting
The contents of this presentation remains the intellectual property of Network Rail Consulting and may be used only in connection with the brief for which it was submitted. It is specifically forbidden to communicate the contents to any third party without prior permission in writing from Network Rail Consulting, and all reasonable precautions must be taken to avoid this occurring.
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

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

© Network Rail Consulting
We are one of Europe’s leading railways.

Source: European Commission Rail Study, March 2013
Creating a Strong Safety Culture
Network Rail’s experience

- 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

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
Increasing Awareness of Operational Planning and Execution
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
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
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 focused 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