ORR's health and safety regulatory strategy

February 2015

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Our Role

The Office of Rail Regulation (ORR) is the independent safety and economic regulator for Britain's railways. We are here to check that the network operates safely, reliably and provides value for taxpayers and customers. **Our strategies** focus on how we; as the independent economic and safety regulator, will help the industry to deliver its services efficiently, effectively and safely, and achieve a better public interest outcome[1].

Our role in respect of health and safety is to make sure that the health and safety of everyone associated with the rail industry is protected by pushing railway businesses to have excellent health and safety management, and to check that they identify and assess risks properly, control them effectively, and comply with the law. To achieve this effectively we take account of health and safety in all of our activities.

The law applicable to the companies we regulate and our own activities is both European and UK based:

■ the relevant UK law is the Health and Safety at Work etc Act 1974 and the Regulations made under it which cover how certain risks should be controlled.

■ the relevant European law arises from the Railway Safety Directive 2004/09, which is implemented into UK law through the Railway and Other Guided Transport Systems (Safety) Regulations (ROG's).

Broadly speaking, the law requires us to grant permission to each business on the basis that they will effectively control the risks they create when running their business using their management system. We reassess that permission for each business at least every five years.

After granting permission, we then seek assurance by checking that the businesses are controlling risk. We do so by implementing our strategy and conducting inspection and investigation activities to test legal compliance and to push for excellence in management, by individual railway duty holders and across the railway system as a whole. This is because excellent management will result in a greater likelihood that risks are effectively controlled

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[1] Full details of our strategies can be seen at: http://orr.gov.uk/__data/assets/pdf_file/0015/2184/388.pdf

every day and so drive the industry towards our vision. We track overall health and safety performance and risks using data, risk modelling, and intelligence from inspections, audits, and investigations, which gives us a picture of the risks and management maturity in each duty holder, sector and the industry and how they are changing. This guides our priorities across our strategy and activities to ensure risks are effectively managed.

Where we identify that duty holders are not controlling risk then we can take enforcement action to ensure that employees, passengers and members of the public are protected[2].

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[2] Our enforcement policy is at this link: http://orr.gov.uk/what-and-how-we-regulate/health-and-safety/health-and-safety-enforcement/enforcement-policy

Vision for the Industry and ORR

We expect the industry to deliver continuous improvement in the health and safety of passengers, the workforce, and the public, to achieve a vision of: "**zero industry caused fatalities and major injuries to passengers, the public, and the workforce**."

This will be achieved through the industry achieving excellence in:

- culture;

- health, safety and asset management; and

- risk control.

We believe that continuous improvement should be led by the industry itself, demonstrating excellence in health and safety management, increasingly achieved through its own assurance processes with less need for intervention by ORR during its routine supervision activities. This is because evidence shows that sustained improvements in the management of health and safety risk are more likely to be achieved where responsibility for understanding and managing risk is firmly owned by duty holders.

Our vision for ORR is to be "**the world's leading health and safety regulator for railways**." We will achieve this by being excellent at all aspects of our own regulatory management and through continuous improvement. Our long term aim is for Britain's railway industry to be the world leader in operating a network that protects and promotes the health and safety of its passengers, the workforce, and the public.

Our vision is underpinned by our strategy to **drive for a safer railway**, which in turn is supported by our four other strategies, particularly to **be a high performing regulator**[3].

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[3] Full details of our strategies can be seen at: http://orr.gov.uk/__data/assets/pdf_file/0015/2184/388.pdf.

Our Regulatory Approach

Our regulatory approach focuses on business risk, recognising that business risk includes commercial risks, and health and safety risks, including the risk of major train crashes as well as risks that may cause harm to individual employees, passengers and the general public.

Health and safety is not an overhead or an optional add-on, it is a fundamental legal requirement – and it is good for business. There is a good evidence base in other sectors where businesses have effectively incorporated a health and safety culture that has in turn led to reduced costs, improved efficiency and greater competitiveness.

The rail industry in Britain is made up of many businesses. We oversee those businesses and how they work together to keep the rail system safe.

A business will be safe if its people manage risks effectively every day. This is best achieved by businesses having excellent health and safety management systems that coordinate their people and have processes to identify and assess risks properly and control them effectively. Our role is to check that they do this and in so doing comply with the law.

To implement this regulatory approach we spend our time:

- Setting objectives, outputs and expectations for Network Rail;

- Gathering **evidence about the management of risks** by rail businesses through our regular audits, inspections, investigations of incidents or complaints and monitoring of health and safety performance indicators, including reports:

  - produced by the Rail Accident Investigation Branch (RAIB), and by ensuring that their recommendations are appropriately considered and, where reasonably practicable, action is taken to implement them;

  - produced by the RSSB on safety statistics and safety risk models for the main line railway and effectively engaging with RSSB facilitated industry working groups on specific areas of risk;

  - produced by Transport for London on safety statistics and safety risk models for its operations (including LUL); and

  - received from other stakeholders, such as passengers, workers, unions etc.

- Drawing on our evidence, taking an **efficient risk based approach to regulation** through regular systematic reviews of our **strategic risk priorities and enablers[4]**, enables us to target our resources on the right things.

- Responding to health and safety incidents – we call this reactive investigation.

- Using our powers and influence to help the industry work together to tackle common issues, such as competence, health management, and managing change.

- Using appropriate enforcement tools to ensure duty holders:

    o take immediate action to deal with serious risks;

    o improve so that they meet the legal requirements;

    o are held to account in the courts for any health and safety failings that merit prosecution5;

■ Holding duty holders to account – through enforcement where necessary;

■ Supporting the development of the legal framework in Europe;

■ Preparing, as necessary, proposals for railway specific health and safety regulations and for ensuring that these are accompanied by simple clear guidance to support compliance.

    - Ensuring that, as the economic regulator for Network Rail and HS1 Ltd, any periodic review settlement continues to enable the duty holder to meet its health and safety obligations.

    - Using our railway management maturity model (RM3)[6] to help encourage businesses towards excellence in health and safety management.

    - Providing industry with advice and guidance to help businesses to comply with the law.

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[4] See our strategy for managing health and safety risks at: http://orr.gov.uk/publications/corporate-publications/health-and-safety-strategy

[5] Our Enforcement Policy is at this link: http://orr.gov.uk/__data/assets/pdf_file/0016/5650/hswa-enforcement-policy-statement.pdf

[6] See our guidance on the Railway Management Maturity Model (RM3) at: http://orr.gov.uk/what-and-how-we-regulate/health-and-safety/monitoring-and-reporting/occupational-health-and-the-railway-management-maturity-model

We will not settle for mediocrity or a culture of complacency. We will always ask whether improvement can be made, but we recognise that the law sets minimum standards and that an excellent organisation is one that delivers compliance with the law efficiently and consistently. We encourage excellence, but will not enforce beyond the standard set down in law.

A railway system which is designed with safety in mind from the outset is more likely to deliver a railway that can be operated safely and efficiently for years to come. We expect careful thought during the design process to eliminate risks or reduce them where possible.

Assessing Health and Safety Performance and Identifying Priorities

Introduction

Our health and safety strategy is defined by our evidence and what this tells us about where the industry and individual duty holders are on the journey towards our vision, so we understand the strengths and weaknesses and consequently the gaps in their management capability.

This enables us to prioritise our resources on a risk basis but at the same time ensure that our statutory duties (such as granting permissions) are effectively discharged and that we undertake targeted reactive investigations into incidents.

Figure 1: How do we assess health and safety performance?

Figure 1 – Pyramidal model for railway safety management
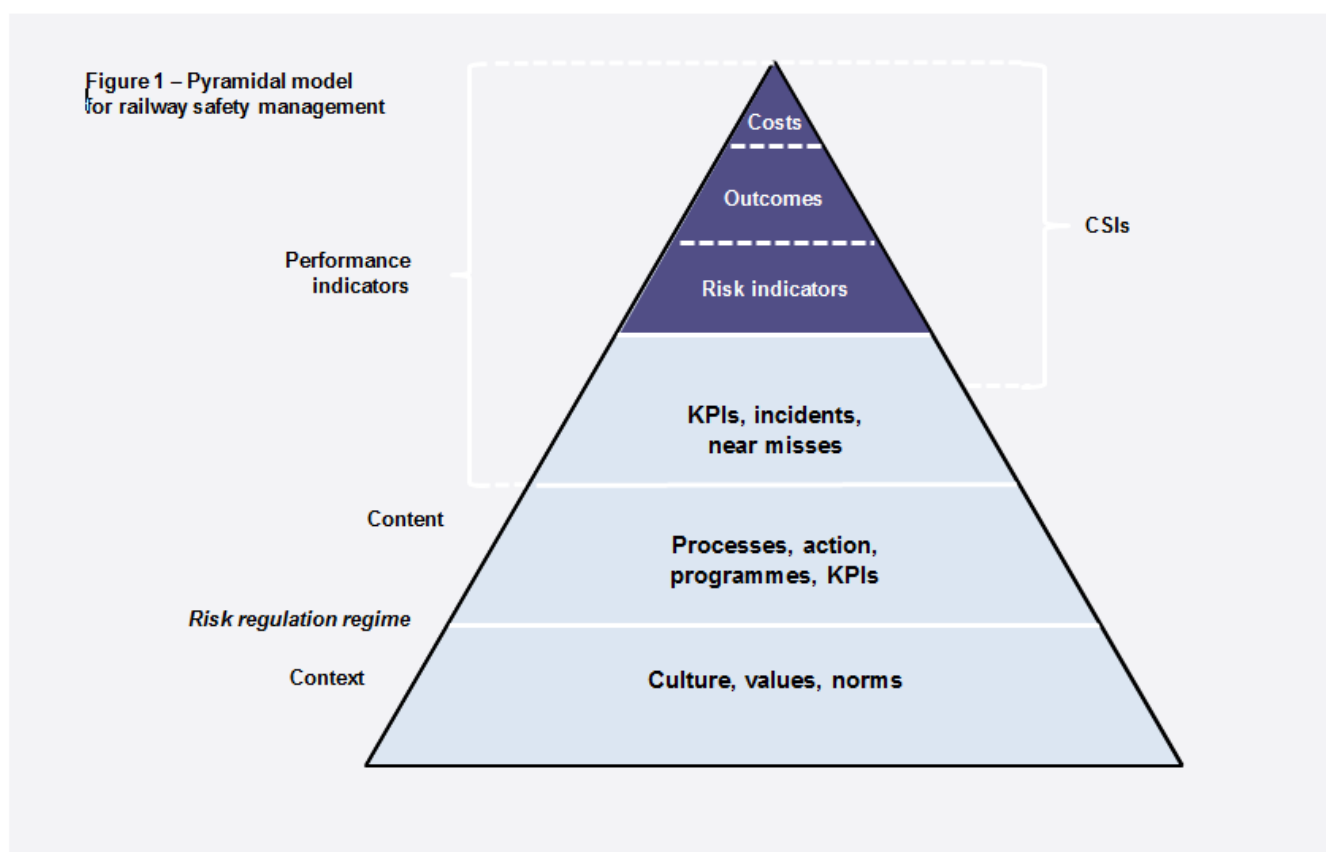
Source: ERA 2014 Railway Safety Performance Report 2014[7]

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[7] See: http://www.era.europa.eu/Document-Register/Documents/SPR2014.pdf.

Figure 1 (the pyramidal model for railway safety management) shows a range of indicators that are important to use to truly understand the performance of both the railway industry and individual duty holders within it. This includes not just outcomes e.g. numbers of incidents and injuries, but also risk models, near misses, and also the context and content that underpin how well an organisation or system will perform. Whilst shown as a pyramid, it should not be viewed that cost is more important than any of the levels below, but viewed as showing the scale of significance i.e. culture, values, norms has a larger significance than the levels above, and cost the least. Cost, outcomes, and risk indicators are also outcomes of the success of management of layers below this.   The industry has models to understand the particular risks from running the railway but they are not the whole story and it is very important to also consider management capability. This is where the Railway Management Maturity Model (RM3) is most useful. RM3 is used by the ORR, and increasingly by duty holders, to understand their maturity in a number of business critical areas (elements) as measured against five maturity levels: level 1 - ad-hoc; level 2 - managed; level 3 - standardised; level 4 - predictable; and level 5 - excellent[8]. It has been independently verified by the Health and Safety Laboratory.

Looking at the railway industry strategically for the purpose of deciding where we deploy our resources, we analyse all the potential risks using a scorecard approach, for each sector: mainline; London Underground; tramways; and heritage, and for each individual company. This scorecard is applied to a topic and requires those using it to make judgements on:

■ How well duty holders are managing the particular risk;

■ Our confidence that their performance will be sustained (often from considering assessments from RM3);

■ Enforcement history on that item;

■ Likely public concern about it; and

■ How we can make a difference and move the industry towards our vision.
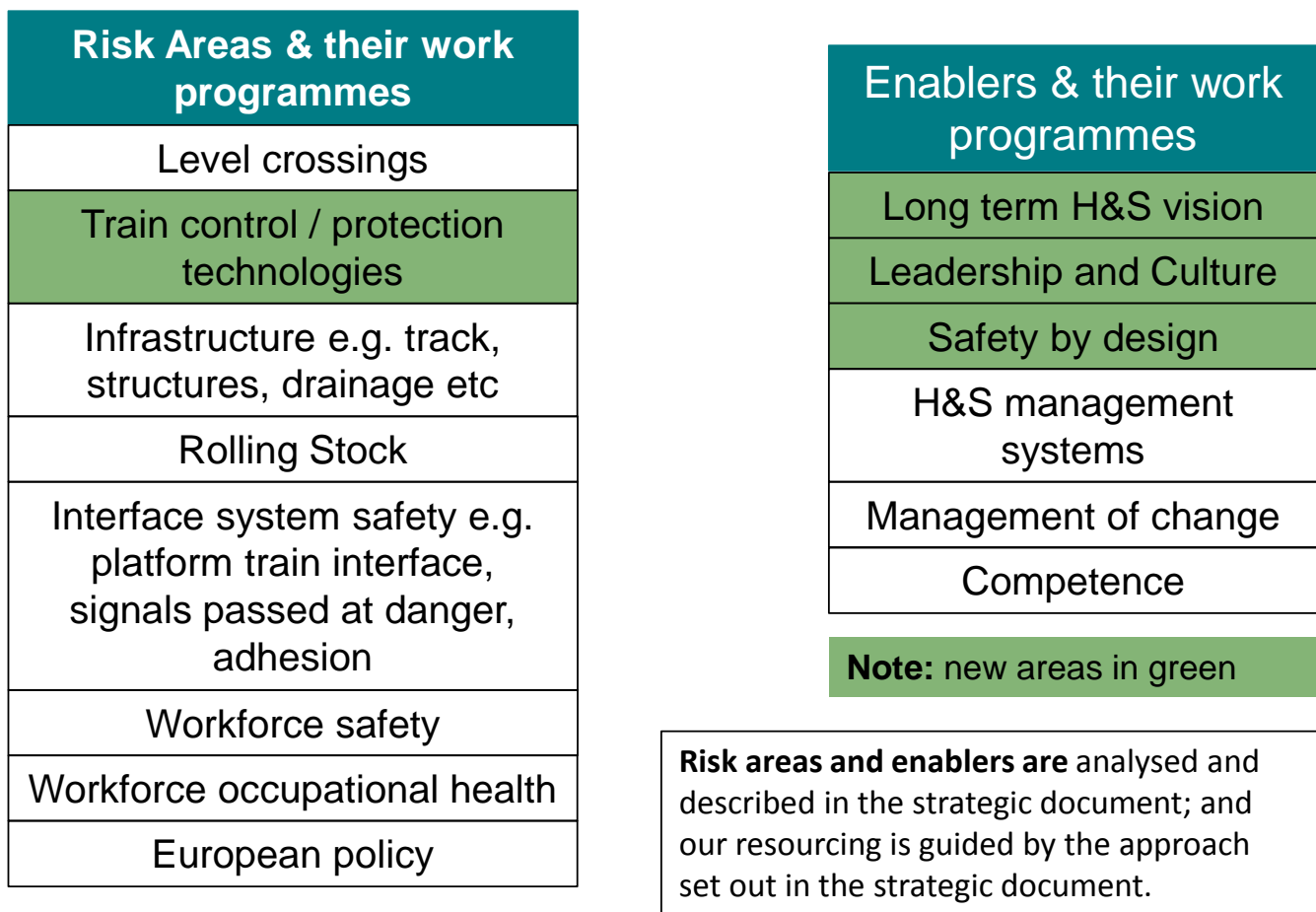
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[8] Full details of the Management Maturity Model can be found at:
http://orr.gov.uk/__data/assets/pdf_file/0013/2623/management-maturity-model.pdf

The outcome of this work is a comprehensive list of risk areas / enablers for each sector and duty holder, judged against the scorecard and then ranked into high, medium and low scores. This analysis helps us to optimise resource allocation to address the risks in the most effective way for each duty holder, sector and the industry.

Every two years we take a 'stand back' look from our current view of the scores and reassess them. We have recently done this and Figure 2 represents our current risk priorities and enablers.

**Figure 2: Current Risk Areas (Priorities) and Enablers**

Risk Areas & their work programmes
Level crossings
Train control / protection technologies
Infrastructure e.g. track, structures, drainage etc
Rolling Stock
Interface system safety e.g. platform train interface, signals passed at danger, adhesion
Workforce safety
Workforce occupational health
European policy

Enablers & their work programmes
Long term H&S vision
Leadership and Culture
Safety by design
H&S management systems
Management of change
Competence

Note: new areas in green

Risk areas and enablers are analysed and described in the strategic document; and our resourcing is guided by the approach set out in the strategic document.

Risk areas and enablers are analysed and described in the strategy document[9]. Each chapter within this is reviewed on a rolling basis or as new significant information comes to light, so reflects the latest view on the rankings and significance of each risk area. We currently allocate 48.9 (43.4%) of our health and safety resource on proactive work (see Figure 9)

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[9] See our strategy for managing health and safety risks at: http://orr.gov.uk/publications/corporate-publications/health-and-safety-strategy

associated with each of the risk priorities listed above. This resource is split between each of the risk priorities as shown in Figure 3 below.

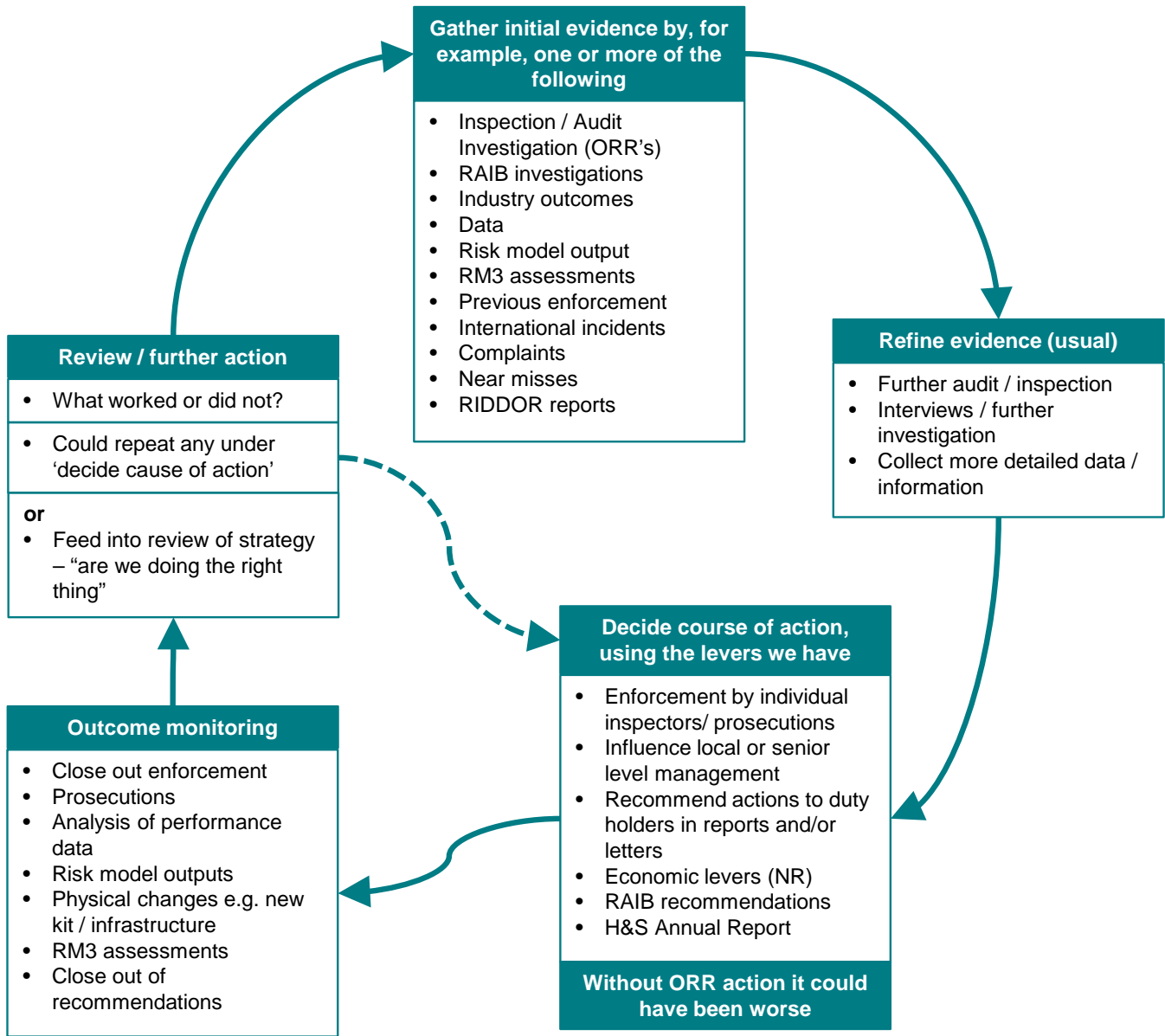**Figure 3: Allocation of resources to each risk priority.**
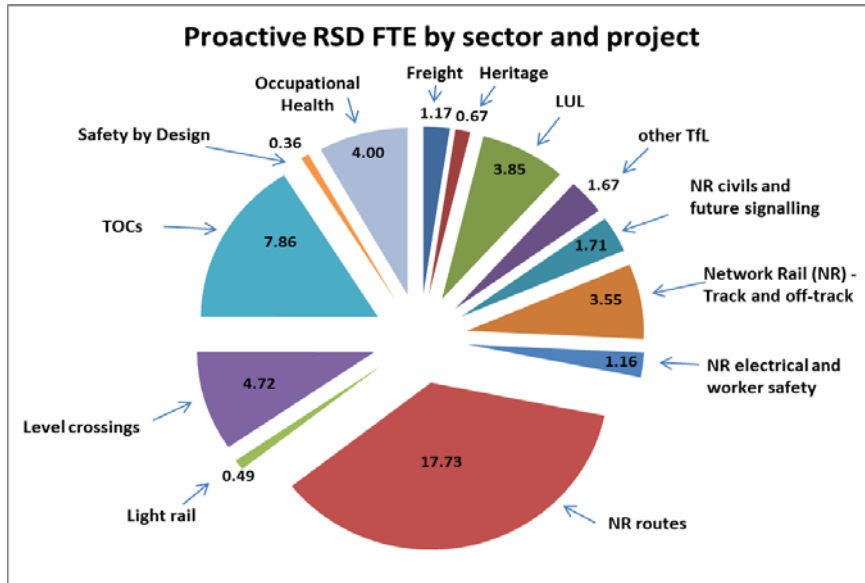
Within the relevant high risk areas shown in figure 3 we are particularly focusing on: electrical and infrastructure worker safety; system interfaces including risks arising from Signals Passed at Danger (SPADs) and so driver management; Platform Train Interface (PTI) risk and crowding at stations; track / freight vehicle interaction; management of projects / change, particularly safety by design and construction site discipline. Further detail on our areas of focus for each risk priority can be seen in our strategy document[10].

In addition to the proactive resources allocated we have 11.56 people to undertake reactive work, as and when health and safety incidents occur. It is highly probable that the majority of this will also be utilised across the risk priorities.

A summary of our process for assessing health and safety performance and the factors we take into account to identify our priorities is shown in the diagram below.

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[10] See our strategy for managing health and safety risks at: http://orr.gov.uk/publications/corporate-publications/health-and-safety-strategy.

Figure 4: Summary diagram that explains our evidence based approach to supervising the industry's management of risks and informing reviews of our strategy.

Gather initial evidence by, for example, one or more of the following

- Inspection / Audit Investigation (ORR's)
- RAIB investigations
- Industry outcomes
- Data
- Risk model output
- RM3 assessments
- Previous enforcement
- International incidents
- Complaints
- Near misses
- RIDDOR reports

Refine evidence (usual)

- Further audit / inspection
- Interviews / further investigation
- Collect more detailed data / information

Review / further action

- What worked or did not?
- Could repeat any under 'decide cause of action'

or
- Feed into review of strategy – "are we doing the right thing"

Decide course of action, using the levers we have

- Enforcement by individual inspectors/ prosecutions
- Influence local or senior level management
- Recommend actions to duty holders in reports and/or letters
- Economic levers (NR)
- RAIB recommendations
- H&S Annual Report

Without ORR action it could have been worse

Outcome monitoring

- Close out enforcement
- Prosecutions
- Analysis of performance data
- Risk model outputs
- Physical changes e.g. new kit / infrastructure
- RM3 assessments
- Close out of recommendations

The course of action depends on the levers we have available to use.

In order to achieve the outcome we desire, (which may be improvement or simply compliance with the law), we have a number of levers or tools available to us, which can be used singly or in combination.

In the most serious situations we can use enforcement notices to deal with an immediate risk or to improve management of risks that are not being properly controlled, and we can consider prosecution when this is justified. The application of these powers is guided by our

Enforcement Policy[11] and HSE's Enforcement Management Model (EMM)[12], which we have adopted.

In other circumstances we can advise duty holders on the action they should take in response to findings from our inspections / audit activities.

We also recognise the value that a good reputation for health and safety has for businesses and so we present information about safety performance our website, in articles, publications, and in our annual health and safety report[13]. This approach complements our discussions in private with managers and leaders in industry.

As an integrated economic and safety regulator, we are able to use economic regulation to drive improvements in safety management and risk control, particularly in Network Rail. This is particularly helpful in areas like asset management where the performance and trajectory towards excellence is as important for safety as it is for overall business performance.

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[11] See: http://orr.gov.uk/__data/assets/pdf_file/0016/5650/hswa-enforcement-policy-statement.pdf

[12] See: http://www.hse.gov.uk/enforce/emm.pdf

[13] The annual report for 2013-14 can be seen here: http://orr.gov.uk/what-and-how-we-regulate/health-and-safety/monitoring-and-reporting/health-and-safety-annual-report-2014

Industry position, gaps, and how we deploy our resources to achieve milestones towards delivering our industry vision

Industry position and key milestones

Although it is clear from European Rail Agency (ERA) annual report for 2013 that GB railways are now the safest in Europe (see figure 5 below), particularly for passenger injury and level crossing collisions, there are still adverse events, incidents and evidence from our assessments of the industry's management maturity, that weaknesses in risk control still exist, which in turn means that our vision is not being achieved.

Figure 5: Comparison of passenger and workforce fatality rates across the European Union's railways, 2008-12
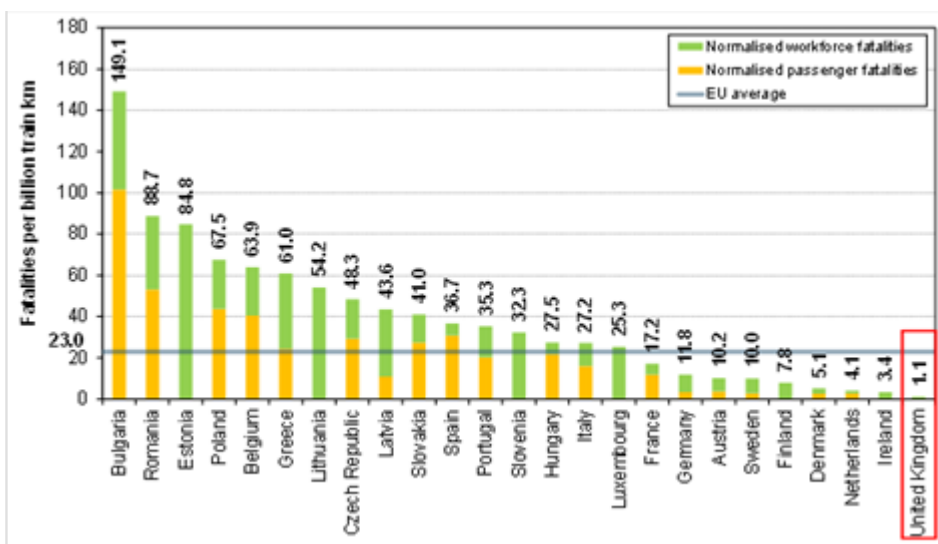

Source: RSSB analysis based on Eurostat data[14].

Serious near-hits and railway incidents are still occurring, the results of which could have been very different. Figure 6 shows that safety on Britain's mainline railways has improved consistently between 1999 and 2009, mostly as a result of improvement in the risk caused by train passing signals at danger, brought about by the regulated fitment of a train protection and warning system; and to a lesser extent because of improvements in infrastructure risk management. This rate of risk reduction improvement has levelled off notably since 2010, but

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[14] See page 55 of RSSB's annual safety performance report for 2013-14: http://www.rssb.co.uk/Library/risk-analysis-and-safety-reporting/2014-07-aspr-2013-14-full-report.pdf

the overall risk reduction trends continue to reduce with marginal improvements, mostly driven by reductions in the risks to the public, particularly because of fewer serious level crossing incidents.

Figure 6: Precursor Indicator Model (PIM) risk from January 1999 to 3 January 2015
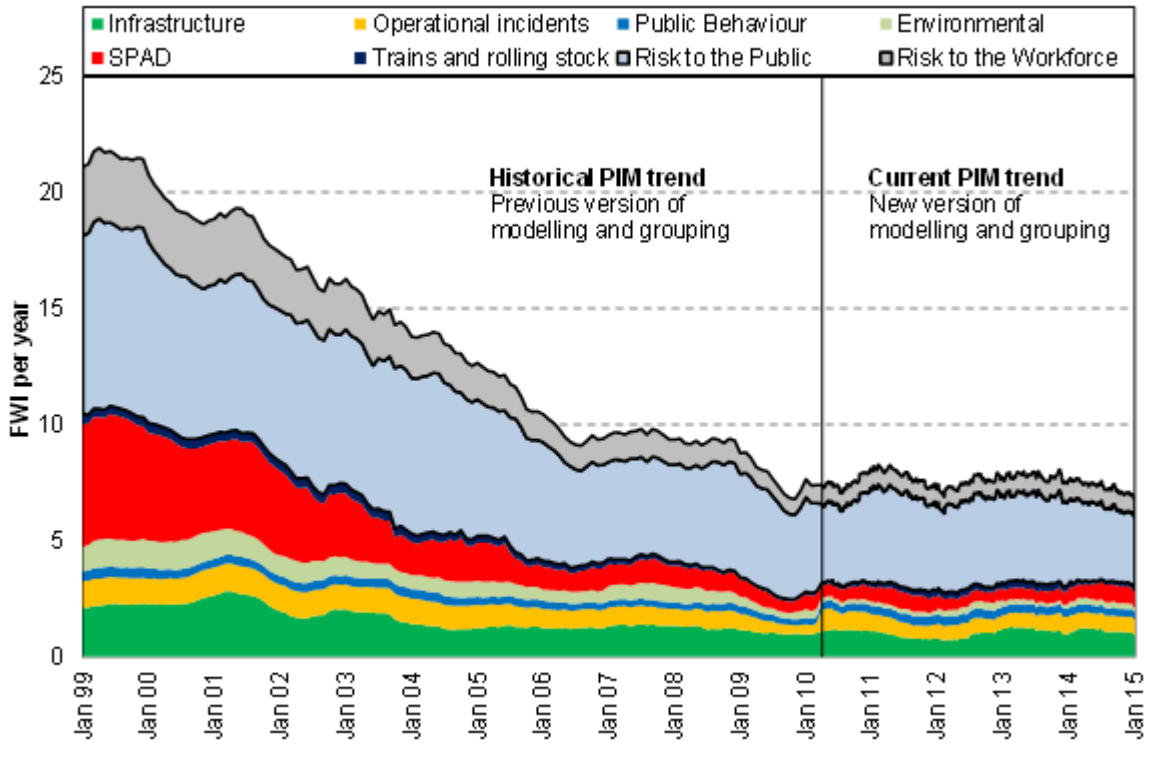
Source: RSSB.

Broadly speaking, in terms of our assessment of management capability (using RM3) of businesses across the industry, most of them are middle of the road i.e. level 3 (standardised). This means that the next key step upwards is towards level 4 (predictable) for major duty holders, which is important in order to reduce the likelihood of workforce fatalities (which are still occurring), and/or a major catastrophic event. **The move to a higher level of management capability (when measured against RM3) is the most important and one of the most difficult steps for any duty holder to make.**

Taking account of the evidence on duty holders' capability to manage risk and from this identifying where the most significant risks are, as a combined economic and health and safety regulator, we have set some key future milestones to achieve our vision for the industry.

Key milestones include:

- Network Rail delivery of its CP5 goal of zero fatalities and major injuries to its own and contractor workforce by April 2019;

- Ensuring that Network Rail effectively utilises funds made available in CP5 to reduce risk: at level crossings (where Network Rail have committed to reduce risk by at least 25%); improve safety in taking electrical isolations and for workers working within possessions; and reducing risks associated with road rail vehicles.

- A reduction of 50% in the Passenger Train Accident Risk for passengers as measured by the industry safety risk model by April 2019.

- Zero industry caused fatalities to passengers, workforce and the public in each year of of CP5 for both the mainline railway and Transport for London (TfL); and

- All major duty holders are able to show that they have sustainably achieved the predictable level (4) for the majority of the 26 elements of our RM3 management capability model by the end of CP5 (April 2019).

How do we allocate resources and how are they allocated now?

In terms of allocating our resources on health and safety activity we use some guiding principles, see figure 7.
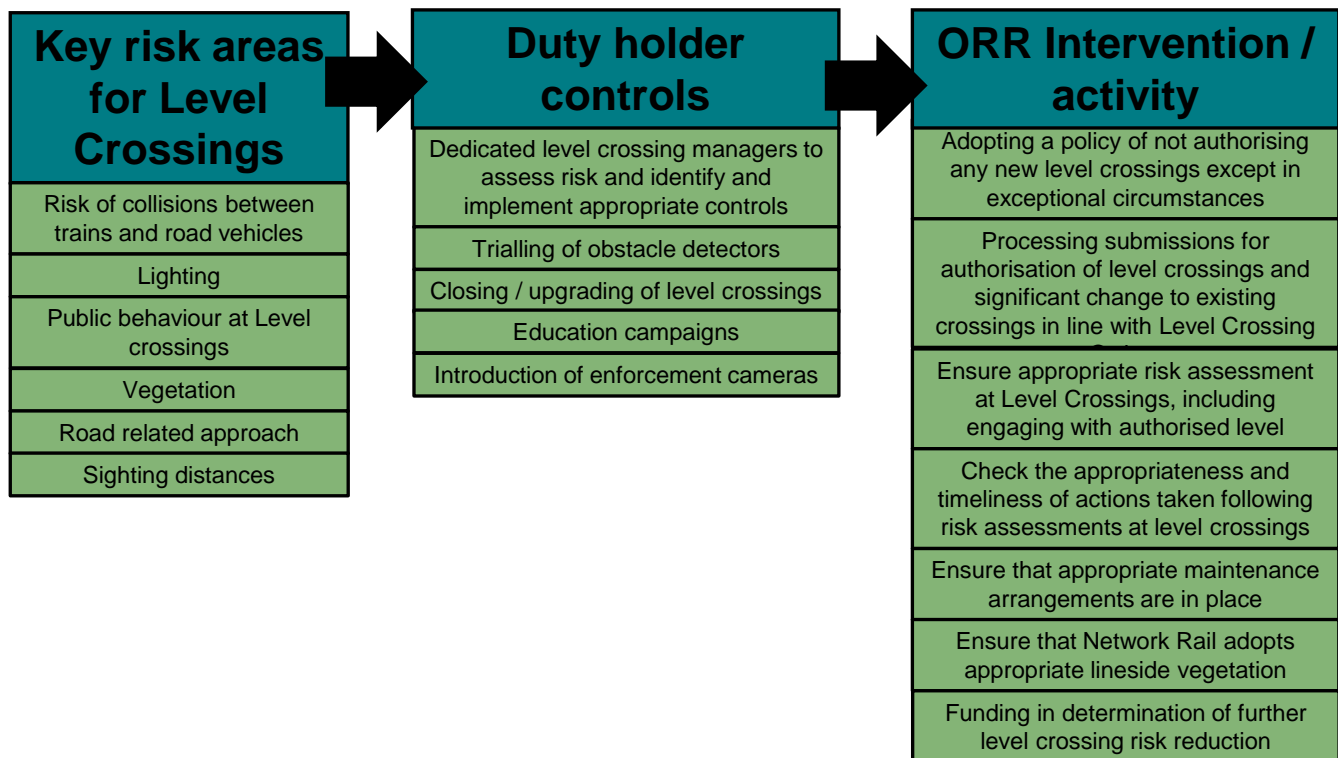
Figure 7: Guiding Principles

It is about	It is not about
Balance	Too much in any area: too little or none in another
Proportionate to risk and focused on risk reduction	Proportionate to safety levy payment. The levy is linked to turnover, not risk
Targeted by evidence	Targeted by whim
Right skilled and confident people	Poorly trained people who lack courage
Covering the country	Areas left alone
Knowing the skills you need	Work determined by the skills we happen to have to hand
Letting the duty holder control risks	Man-marking the duty holder for no good reason

We use these principles after we have taken into account the things that we must do which are:

- fixed activities such as statutory activities (granting permissions, level crossing orders, issuing train driver licences), and following up RAIB recommendations;

- reactive work e.g. mandatory investigations and any subsequent enforcement; and

- all other essential activities like training and development to make sure our staff are competent, as required by European law.

For each area (risk priority or enabler) we understand the risks and their significance, the duty holder controls / actions, and from this we define the ORR intervention / activity. Our strategy for managing risks sets out our approach for each area of risk and this defines our priorities[15]. An example is presented in figure 8 relating to level crossings on the mainline railway.

Figure 8: Key Risk Areas for Level Crossings, Duty Holder Controls / Actions, and ORR Intervention / Activity

Key risk areas for Level Crossings	Duty holder controls	ORR Intervention / activity
Risk of collisions between trains and road vehicles	Dedicated level crossing managers to assess risk and identify and implement appropriate controls	Adopting a policy of not authorising any new level crossings except in exceptional circumstances
Lighting	Trialling of obstacle detectors	Processing submissions for authorisation of level crossings and significant change to existing crossings in line with Level Crossing
Public behaviour at Level crossings	Closing / upgrading of level crossings	Ensure appropriate risk assessment at Level Crossings, including engaging with authorised level
Vegetation	Education campaigns	Check the appropriateness and timeliness of actions taken following risk assessments at level crossings
Road related approach	Introduction of enforcement cameras	Ensure that appropriate maintenance arrangements are in place
Sighting distances		Ensure that Network Rail adopts appropriate lineside vegetation
		Funding in determination of further level crossing risk reduction

Our approach also needs to take into account our policy to test aspects of the safety management systems of major duty holders over the normal five year life cycle of their Safety Certificate or Safety Authorisation.

Taking all these things into account, our resources in 2014-15 were planned to be allocated as defined in the pie charts shown at figure 3 and 9. Figure 3 shows how our resources are allocated across businesses in the rail industry, and figure 9 shows the overall resource split by activity.

Figure 9: Health and Safety Resource Utilisation
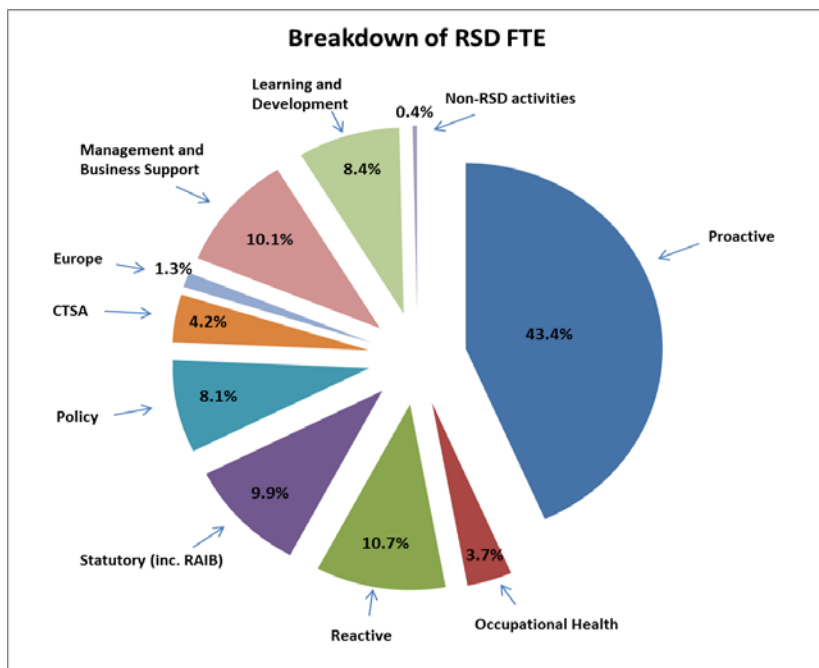
Like any organisation, we plan our work beforehand and then we work our plan in-year to take account of events and changes. Therefore the split of our resources changes during the year, particularly as a result of reactive work swings.

Policies, Processes and Tools we use

To make sure all of our processes and techniques are fully documented and understand the interrelationships between them we have mapped them into one coherent management system, and figure 10 is a diagram that represents the scope of our management system and the components within it.

On a regularly defined interval we review each element in the diagram which represents one of our processes, techniques or methodologies, with the purpose of continually improving and refining them. In some cases, we will use external expertise to carry out independent reviews. This is important as we drive continuous improvement in our own performance towards the vision of excellence in all that we do as a regulator. This includes how we manage our key resource which is our people.

Figure 10: The scope of our management system, and components within it, particularly policies, processes and tools ORR uses to discharge our health and safety responsibilities.
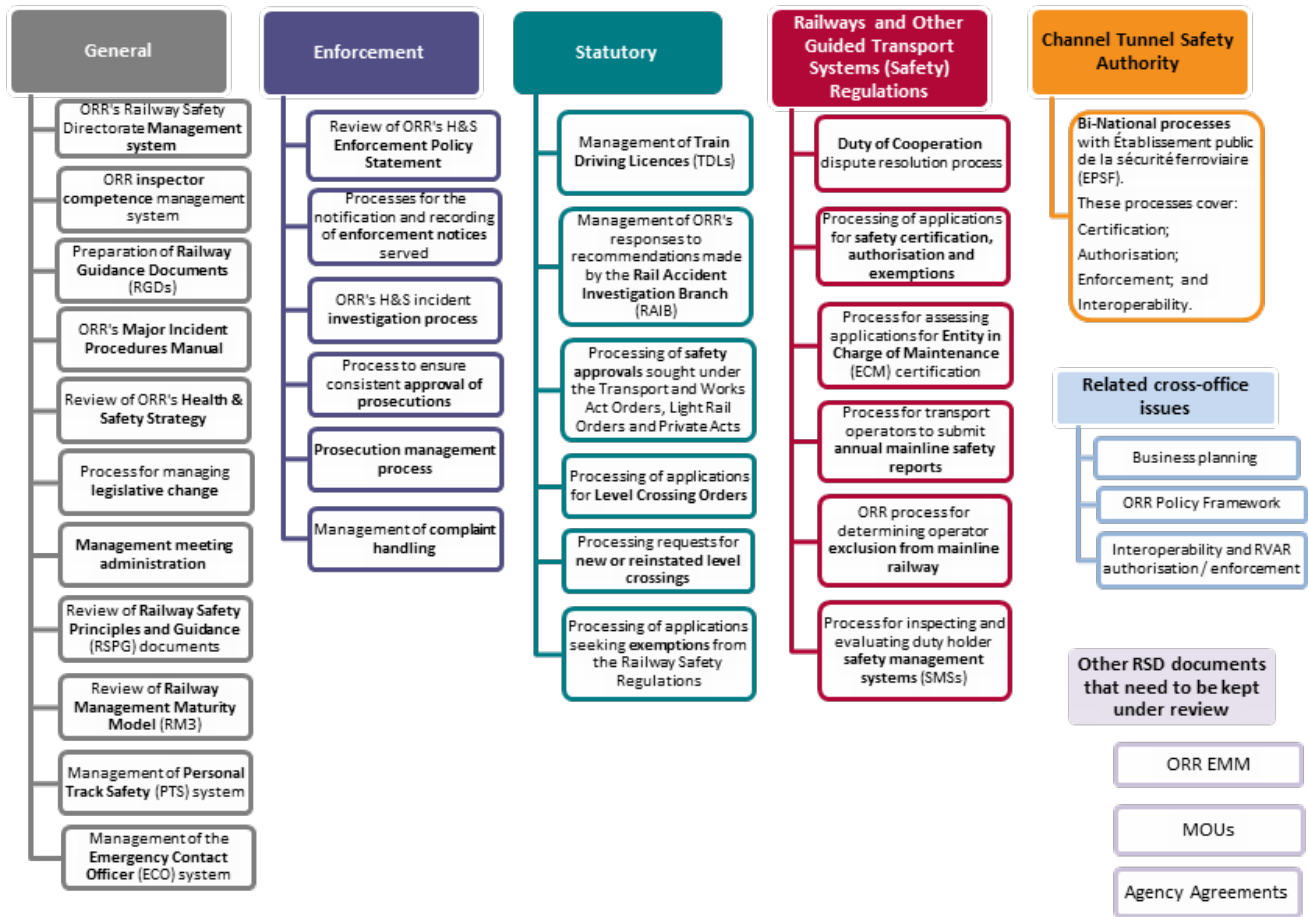
How do we know where we are on the journey to the vision for ourselves, measuring where we are as a health and safety regulator?

Our vision to be "the world's leading health and safety regulator for railways" will be achieved by being excellent at all aspects of our regulatory management and approach. Therefore to be able to achieve this it is vital that we know where we are on that journey. So it is important to be able to measure where we are as a health and safety regulator. To be in a position to be able to do this, and as a follow up to development of RM3, we have developed a similar maturity model for ourselves and fellow regulators known as **RM3-R**. The basis of this has now been adopted by the European Rail Agency (ERA) for its assessment of National Safety Authorities (NSAs), National Investigation Branches (NIBs), and Member States. We have

assessed ourselves initially against RM3-R and also took part in an ERA pilot assessment along with the NIB (RAIB) and Member State (DfT). This has enabled us to develop a continuous improvement action plan as a result. We are in the process of carrying out those actions and will have a further assessment in 2015. Our aim is to demonstrate being at least excellent in three quarters of the elements by April 2019.