Taking Safe Decisions and the CSM on Risk Evaluation and Assessment

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Health and Safety at Work etc. Act

Duty on employers to ensure the safety of people affected by their undertaking so far as is reasonably practicable.
Edwards v National Coal Board

A quantum of risk is weighed against the sacrifice (money, time and trouble) involved in averting it. Measures are reasonably practical unless “there is a gross disproportion between them - the risk being insignificant in relation to the sacrifice”
• Taking safe decisions states that in the GB railway industry duty holder decisions which impact on safety are taken:
  • In order to meet legal requirements.
  • Because they are sensible from a commercial perspective.
  • These different decision types have different implications and involve different considerations
• Societal concern about risk impacts on government decision taking.
• Societal concern should not be taken into account by duty holders when deciding whether a measure is necessary to ensure safety so far as is reasonably practicable (SFAIRP).
• However, the impact of societal concern on a company’s reputation might mean that the company takes account of it optionally for business reasons.
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• However, the impact of societal concern on a company’s reputation might mean that the company takes account of it optionally for business reasons.
• TOR framework presented by the HSE in *Reducing Risks, Protecting People* is not a requirement of the Heath and Safety at Work Act etc 1974 (section 1.2.3).

• It is a conceptual guide for regulators that may help duty holders manage and prioritise safety activity by providing an alternative perspective on risk.
• HMRI, HRR guidance and general principles:
  “Gross disproportion should be considered for both individual and societal risk;...
...Member states shall ensure that the safety level of railway systems and installations is generally maintained at a level which is, as far as is practicable, continuous.
Commercial responsibilities

Example: Occupiers’ Liabilities Acts

Duty as Corporate entity

Example: Health and Safety at Work Act

Duty as Employer

Example: ROGS, CSMs

Duty as Transport Operator

RGSs (NSRs & NTRs)

Railway specific

NOT railway specific

NOT railway specific

NOT railway specific

Scope of TSD
European Regulations – Common Safety Methods

- Monitoring
- Risk Evaluation and Assessment
- Assessing conformity with the requirements for obtaining Safety Authorisations
- Assessing conformity with the requirements for obtaining Safety Certifications
- Supervision
- Assessment of achievement of Safety Targets
European Regulations – Common Safety Methods

Monitoring
- Assessing conformity with the requirements for obtaining Safety Authorisations
- Supervision

Risk Evaluation and Assessment
- Assessing conformity with the requirements for obtaining Safety Certifications
- Assessment of achievement of Safety Targets
Safety concern?

Review

Analyse

Business and other drivers

Scope problem

Analyse options

Select options

Define change

Demonstrate compliance

Determine safety measures

Define change

Implement

Make change?

No

Yes

Monitoring safety

Analysing and selecting options

Making a change

Monitor

No

Yes
The CSM on Risk Evaluation & Assessment:

- **SIGNIFICANCE TEST**
  - **RISK ASSESSMENT**
  - **SYSTEM DEFINITION**
  - **RISK ANALYSIS**
    - **HAZARD IDENTIFICATION AND CLASSIFICATION**
      - Codes of Practice
      - Similar Reference System
      - Explicit Risk Estimation
  - **RISK EVALUATION (RISK ACCEPTANCE CRITERIA)**
  - **SAFETY REQUIREMENTS (SAFETY MEASURES TO BE IMPLEMENTED)**
  - **DEMONSTRATION OF COMPLIANCE WITH SAFETY REQUIREMENTS**
Seven things you need to know
It’s the law
It’s scalable and can be applied to any change
It’s consistent with your requirements under general safety legislation.

Risk acceptance criterion in UK is to ensure safety SFAIRP.

Existing good practice
It’s consistent with your requirements under general safety legislation

ORR says:
“there is no conflict between the domestic requirements for a risk assessment to be suitable and sufficient and the level of risk assessment set out in the CSM RA”
Identify the Proposer

- The Proposer has specific duties:
  - Undertake and document the significance test
  - For ‘significant changes:
    - Appoint the assessment body
    - Produce a plan
    - Identify hazards and create a hazard record
    - Notify member state of any safety requirements derived with contradict the TSI
Identify the Proposer

The Proposer has specific duties:

For ‘significant changes’:

- Maintain the hazard record
- Ensure that risks introduced by its suppliers and its service providers, including their subcontractors, are also managed in compliance with the Regulation.
- Ensure that the risk management covers the system itself and its integration into the railway system as a whole.
Identify the Proposer

- The Proposer has specific duties:
  - For ‘significant changes’:
    - coordinate close collaboration between the different actors involved, in order to manage the hazards and their associated safety measures.
    - find a solution when agreement cannot be reached between two or more actors
    - demonstrate in the risk evaluation that the selected risk acceptance principle is adequately applied and used consistently.
    - produce a written declaration that all identified hazards and associated risks are controlled to an acceptable level.
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The previous slides were just a sub-set of what the Proposer has to do
There are a range of other specific requirements

...they won’t be in your SMS / company standards unless you specifically review them.
You must think about the process early in a project

![Graph showing project maturity and cost of new measures. The x-axis represents project maturity with three stages: definition, design, and implementation. The y-axis represents the cost of new measures, increasing as the project matures.]}
Guidance on monitoring

- Safety Assurance guidance
- SMS Principles – Moving Beyond Compliance
- Measuring Safety Performance

Guidance on the CSM RA

- GE/GN8640 Planning an Application
- GE/GN8641 System Definition
- GE/GN8642 Hazard Identification & Classification
- GE/GN8643 Risk Evaluation and Acceptance
- GE/GN8644 Safety requirements & Hazard Management
- GE/GN8645 Independent Assessment
- GE/GNxxxx Cost Benefit Analysis

Worked examples
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- Provision of signal post telephones
- Removal of fire extinguishers
- Introduction of driver only operation
- Formation of RU / IM alliance
- Final drive failures

More to follow…

Worked examples
RAC-TS – Risk Acceptance Criteria for Technical Systems
For a failure that has a **typical credible potential** to lead **directly** to:

- fatalities and/or severe injuries and/or major damages to the environment
- individual person and resulting in fatality and/or severe injury
- one or more light injuries

Then the frequency of the failure of the function does not have to be reduced further if it is demonstrated to be less than or equal to:

- 10-9 failure per operating hour
- 10-7 failure per operating hour
- 10-5 failure per operating hour
• What technical systems do RAC-TS functional failure rates apply to?

• What should be the consequence/severity categories?
  – Should there be a 10-8 category?

• What about barriers?

• How do I demonstrate that I’ve met a particular RAC-TS?
• Remember:
  – The RAC-TS is only required for mutual recognition – its is a ‘high bar’ and is not designed to be the optimum solution.

• Warning
  – The ERA proposals do not provide an answer to the question: How do I demonstrate that I’ve met the RAC-TS. Much more work is needed here.
How can RSSB help?

- Material on RGS online and [www.rssb.co.uk](http://www.rssb.co.uk)
- Taking Safe Decisions published as a consultation document at the end of July.
- Briefings underway
How can you help us?

- Spread the word
- Tell us what you think of Taking Safe Decisions, and out CSM RA guidance (risk@rssb.co.uk)