Research Brief

Rail Safety & Standards Board

Developing a practical self assessment tool for measuring and managing safety culture

Background

This research followed on from RSSB research project T114 entitled 'Measurement of safety culture in the rail industry'. T114, carried out by The Kiel Centre, investigated safety culture in the UK rail industry and how to further cultural development at organisational and industry levels. It evaluated a number of methods employed by the industry to measure safety culture. In particular, it identified what has been measured and the quality of the results obtained, how good safety culture traits vary within the organisations, and what initiatives have worked (or not worked) in the past. The results helped to establish a common understanding of the subject, its terminology, and tools to assess what opportunities exist for change, leading to improvements in safety for UK railways.

T114 reviewed a variety of safety culture assessment methods and identified three as being the most relevant for the rail industry; these were:

- The existing RSSB safety culture assessment tool
- The HSE's Health & Safety Climate survey tool (HSE CST)
- The Keil Centre's Safety Culture Maturity Model™ workshop approach

Each of these methods offered differing benefits; the RSSB safety culture assessment tool scored highly on ease of use due to the support provided by RSSB in its implementation, analysis and interpretation. The other two methods had differing strengths compared with the RSSB method; and arguably provide greater insights into aspects of safety culture.

T397 (this work) sought to: update the RSSB safety culture assessment tool for the rail industry and build on the research conducted in T114; take advantage of advances in the consideration of safety culture; and link the assessment results to guidance and good practices taken from the rail and other high hazard industries. An additional consideration for the work was to develop an assessment package that rail industry companies could administer themselves with minimal support from RSSB.

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Aims

The aims of this work were:

1) To develop an enhanced safety culture measurement tool, based on the original RSSB tool, that can be used by rail companies without the need for external support

2) To incorporate practical "solutions" into the tool, so that users can determine appropriate interventions to tackle any deficiencies that are identified

3) To ensure that the tool has incorporated good practice from both the rail industry and other relevant high hazard industries

4) To consider the data collection and safety management issues - at both an organisational and industry level - to help ensure the tool forms a platform for continuous improvement within the rail industry

This led to the following specific objectives:

- To enhance the pre-existing RSSB safety culture assessment tool, particularly using the insights gained from the previous research, T114, and from consideration of the HSE Safety Climate Tool and the Keil Centre Safety Culture Maturity Model™ (SCMM™) approaches
- To develop a means of analysis and linked guidance to the safety culture survey that would provide a report for the user companies that did not require interpretation or guidance from RSSB staff
- To identify safety culture good practices from the rail and other high hazard industries for incorporation into the toolkit and linked to the guidance provided
- To ensure suitability and usability of the final toolkit for rail group members by a combination of participation and user trials during the project

Findings

This work has produced a web-based safety culture toolkit that includes:

- A safety culture questionnaire based around 11 elements (factors)
- Analysis reports enabling detailed interpretation of survey responses
- Automatically generated graphical outputs of survey responses
- Good practice guidance, taken from rail and other high hazard industries linked to the automatically generated results
- Advice and guidance on implementing the solution interventions
- Advice on the management and monitoring of safety culture and enhancement interventions
- On-line user guidance

This toolkit will replace the previous RSSB safety culture assessment tool, and is intended to primarily allow rail industry companies to assess, interpret and enhance their safety culture themselves, without requiring significant external support (either from RSSB or elsewhere).

The toolkit has had considerable rail industry input during its development and has been subjected to user trials by several rail companies (eg. Birse Rail, First Great Western, GB Rail freight, GNER, Virgin, Virgin Cross Country, Scotrail, Southern Railways). The user trials and subsequent pilot trials have been very positive and indicate that the overall toolkit:

- Has been well founded and is credible
- Is easy to use and requires little user guidance
- Assessment approach is appropriate and generates suitable, credible information
- Good practices are appropriate and provide the right level of detail

Method

Safety culture assessment tool

The pre-existing RSSB safety culture assessment tool was a simple questionnaire that had been developed as part of a safety culture assessment package by AEA Technology. It was separately analysed and interpreted by RSSB staff.

The questionnaire in the new toolkit has been developed by detailed consideration of:

- The RSSB questionnaire
- The HSE Safety Climate survey questionnaire
- The elements included in the Safety Culture Maturity Model™ developed by the Keil Centre for the HSE

The revised questionnaire has been developed to:

- Include all the key issues covered by the original RSSB survey
- Add in any significant topics covered by the HSE Safety Climate questionnaire
- Add in any significant topics revealed by consideration of the Safety Culture Maturity Model™ topics

It was agreed that the main verification of the revised questionnaire would be via the participating rail company reviews and that of RSSB's technical monitor.

Development of the safety culture assessment & development guidance

The toolkit comprises both generic and specific guidance. This has been developed from review of the latest safety culture developments and was able to take account of the major review undertaken for HMRI . It was decided that the guidance would be based on literature and models that have gained considerable use and credibility; and that would allow the users to gain maximum insights into understanding their safety culture and how to improve it.

Along with other sources, the work undertaken for the HSE by the Keil Centre leading to the model of maturity of safety culture has assisted the development of guidance on safety culture and its enhancement. It also reflects our own experience on safety culture. Consequently a five level model of safety culture development (emerging, managing, involving, cooperating and continually improving - detailed on the website, see next steps below) was chosen as the underlying model to use. This allows guidance to be based on the overall level of safety culture development of an organisation, and enables the main enablers for moving to a higher level to be identified. More detailed guidance can then be derived using the detailed safety culture elements but within the overall context of a defined development level.

Good practices

All the good practices were obtained during interviews with rail and other high hazard industry companies for the project. Those companies willing to provide information were asked for interventions that had improved any aspect of safety culture, particularly the four main categories used within the toolkit:

- Effective and appropriate safety management systems
- Demonstrable management commitment (to Health and Safety)
- Employee participation and involvement
- Organisational learning

All the good practices collected were reviewed and categorised according to their main and secondary improvement areas.

Next Steps

The supplier for this work (Greenstreet Berman Ltd) has made two recommendations for future activities. The first suggests that once the toolkit has been launched and used by the rail industry, RSSB should undertake a review and consultation within the rail industry to determine how well the toolkit meets their needs. This consultation would allow amendments and potential enhancements of the toolkit to be identified and evaluated. Any enhancements could be considered in such a review, for example, establishing a rail industry steering group to help determine future development requirements.

The second recommendation relates to the launch itself. Successful uptake of the safety culture toolkit by the rail industry will require appropriate publicising and launching. Greenstreet Berman advise that RSSB should develop a strategy for publicising and launching the toolkit that takes account of issues identified with rail companies during the development of the toolkit. It should be noted that activities planned for the launch of the toolkit include presentations at key stakeholder meetings, exhibition stand and toolkit demonstration at the 2007 ROGs Conference, and a personal invitation to the Managing Directors of RSSB Member organisations to explore and utilise the toolkit.

The RSSB Human Factors team are about to launch the tool. Once live, the website will provide a one-stop-shop for safety culture assessment, improvement and good practice exchange designed specifically for the rail industry.

It will provide organisations with a safety culture self-assessment package, guidance on safety culture improvement and the opportunity to share good practices on all aspects of safety culture across the industry. RSSB provides additional help and guidance for Railway Group Members.

Initially, usage of the toolkit will be limited to RSSB members only however non members will be able to access info on what safety culture is, and potential interventions. Non members are also able to access the good practice guidance on the public area of the site which is due to go live in the very near future.

The tool is now available and can be found at:

http://www.rssb.co.uk/expertise/human_factors/index.asp

where contact details of the RSSB Human Factors Team are available, together with other tools and guidance.

Contact

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