Overview

This research, sponsored by the Rail Industry Skills Forum (RISF), reviewed the current state of driver training programmes on GB railways. It took what is already effective about the training and future-proofed it, reviewing leading practice from other safety-critical industries and exploring innovation in training practice, particularly with regards to the application of adult learning principles.

The overall structure and format of driver training in GB rail has remained largely unchanged since the introduction of the first standardised programme in 1973. This and subsequent variants were mandated through standards. The introduction of Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) provided railway undertakings with the opportunity to take a fresh look at driver training.

The research provided a foundation on which the rail industry could develop new models of driver training based on the leading practice, filtering out outdated training methods and structures, improving training efficiency, and ultimately improving the effectiveness of training for individual learners, both in the initial and refresher training contexts.

Aims

The purpose of this review was to establish the current state of driver training in GB railway undertakings and to undertake research that identified leading practice in training. This enabled the development of tools and guidance materials to help designers of driver training programmes.

Method

This research, which was delivered by RSSB, involved three phases. The first two ran concurrently:

- **Phase 1**: Establishment of current practices in driver training.
- **Phase 2**: Research into leading practice in the design and delivery of training.
Phase 3:

1. Development of a risk-based training needs analysis (RBTNA) template for driver training that can be customised by individual duty holders.
2. A pilot/case study of one company using the RBTNA template.
3. Review of training models and comparison with output of case-study RBTNA.

Findings

The project team identified themes throughout the project from which the following conclusions and recommendations have been developed. The conclusions are summarised here as ‘strengths’ and ‘areas for enhancement’.

Strengths

Basic supports are in place

Railway undertakings indicate that ongoing investment in training is taking place. This includes investment in technology, facilities, and staff. On the whole, the basic support structures for driver training are well established and in place across most organisations.
Professional and enthusiastic approach

It can generally be concluded from the research that a professional and enthusiastic approach is taken to the design and delivery of driver training. Training staff and managers are eager to learn and are willing to invest time and energy into improvements.

Comprehensive

The training is also seen to be very comprehensive, but evidence suggests the content could be rationalised.

Areas for enhancement

Training needs analysis

Driver training could benefit from being designed with a solid risk-based training needs analysis. This is likely to reduce the amount of irrelevant material in programmes by focussing on essential areas of training. While many heads of training report that they have conducted a risk-based TNA, not all follow the guidance in the RSSB Good Practice Guide to Training RS/220. Some programmes are still based on withdrawn Railway Group Standards, and are now considered out-of-date.

Training curriculum

The training curriculum and structure could be improved, as the current curriculum maintains a heavy focus on theory based learning. Adopting a more 'blended' approach may help to provide a broader representation of the practical elements of training which appear to have a smaller amount of emphasis in the current curriculum. It is likely that the curriculum will be further improved through conducting RBTNAs.

Training delivery could also be made more efficient. Some heads of training and managers believe current training courses to be too long. Interestingly, a large majority of driver trainers believe the overall duration of current courses to be satisfactory. This may be the case with the current training methods used. However, it is possible that improvements in training methods (simulator and media) will improve training efficiency and decrease training time.

Training structure

The training structure could be improved. The main problem identified with the current training structures is that many courses are very heavily theoretical in the early stages, leaving most of the practical training until the end. Often the theoretical and practical
elements are largely disconnected. The leading practice research contrasts with this approach, as it suggests that the more that the practical training can be blended with the theoretical training, the better the skill acquisition and learning outcomes. Also, learning styles are better able to be taken into account when the training methods are varied. More attention could also be focused on structuring the practical training so that learning is maximised and specific aspects of the job are adequately covered.

**Non-technical skills development**

Non-technical skills training could be improved. The findings from the various studies undertaken in this project have revealed that non-technical skills (such as decision making, communication, maintenance of situation awareness) are important for successful performance in an operational role. It is recognised that while there are instances of training for these types of skills across GB railway undertakings, there is no formal, standardised approach. Furthermore, methods such as rail resource management and error management training are generally not used. There is an opportunity to integrate improved non-technical skills training, which helps to reduce errors, and improve skill acquisition and successful task performance.

**Training staff support and development**

In order for training to target the individual's needs, trainers and instructors need to understand adult learning styles and be able to adapt their training styles and methods appropriately to both groups and individuals. Continual enhancement of the competence of trainers and instructors is vital to maintaining high standards of training delivery throughout the organisation. It is important for companies to provide trainers with the technical knowledge and qualifications to further develop their own skills, with continued support and assessments. There is also room for improvement with regards to development of behavioural skills and standardised job descriptions.

**Communication, feedback and recording**

Improvements could be made in the area of communication, feedback and recording across training staff, particularly for instructors. In general, the communication between instructors and training centres appears to be poor. The issue of morale has been identified as a problem among training staff, which could be traced back to communication problems. Finally, the recording documentation that is used for trainees' performance is not seen
by instructors to be as useful as it could be. All of these findings reveal a pattern that suggests improvements could be made in the area of communication, information flow, and feedback across training staff.

**Deliverables**

**Previously published:**

*History of Driver Training*

This provided an overview of the British railway industry's processes for ensuring competent train drivers, from the 19th to the 21st century. It was developed to provide the historical context to the current training programmes. Development of the first train drivers and the historic importance of voluntary adult learning processes are discussed, together with technical, educational, and political influences on the driver's work and training needs. It concludes with a discussion about current use of training technologies and future directions.

*Technical Report*

This study involved a technical literature review in the area of leading practice in training. The aim of this paper was to review the recent literature on training methods and approaches to training that can be used in relation to driver training. It provides an overview on the various theories and applications of training and includes a literature review on leading academic studies.

*Adult Learning and Innovation Report*

This report looked at how leading practice identified in literature, including that about other industries, can be utilised to enhance driver training, in a way that is operationally viable. Seeking to build on what is already effective about training, the report aims to act as a springboard for companies to embrace innovation, with suggestions on various approaches and techniques.

*Cross-Industry Leading Practice Report*

The Cross-Industry Leading Practice Report documented the findings of an interview survey which involved training experts from a range of industries, who were identified by industry representatives as having a 'good reputation'. The survey consisted of 25 topic areas related to training design and delivery (eg training needs, trainer delivery, and transfer of training) and these were grouped into six core themes for analysis: risk-based training, non-technical skills development, the trainer, skill acquisition, transfer of training and skill retention, culture and
media/methods/structure. In addition to this, internet searches of empirical evidence and case studies of leading practice in training were also conducted. These findings supplemented survey findings for the core themes but were limited in number.

**Phase 1 and 2 Summary Report**

This report summarised the findings from Phases 1 and 2, particularly the results of the Phase 1 surveys of HR/Ops directors, heads of training, driver trainers, driver instructors, and newly-qualified drivers. It compares the results to the findings of the other Phase 1 and 2 outputs and suggests options for improvement.

**Published at the end of the research:**

*Phase 3 Summary Report*

This report details the research process and findings across the three work packages that formed Phase 3 of the project: the development of a methodology and template for RBTNA, piloting of the methodology and template to develop an RBTNA case study, and use of the case-study to inform a comparison with existing training models. It examines whether the conclusions reached in Phases 1 and 2 of the project are borne out by the data from the case-study RBTNA and makes recommendations for next steps to be taken by the industry.

*Risk-Based Training Needs Analysis (RBTNA) - Guide to the Process and Template*

This document outlines the RBTNA process and template developed as part of Phase 3 of the project, including details of how the generic elements of the template should be customised to suit individual duty holders’ operations, and how to complete the other elements of the RBTNA.

**Not being published:**

*Individual company reports*

Each GB railway undertaking has been provided with a company specific report, which provides the industry findings from Phase 1 of the research. The company's individual results have been plotted against the industry average. All survey data has been anonymised for these reports.
Implementation activities

The three phases of this project have provided a solid base of evidence on which the industry can decide whether there is a case for developing and piloting new models of driver training. This decision, along with the task of widening and monitoring use of the RBTNA template, is to be overseen by an industry implementation group.

A project has already been scoped by the RISF and Train Operators Skills Group to apply the RBTNA template to other roles and to assess its implications for competence management activities. This is being progressed for the industry by RSSB.

Leading practice identified by this project will be incorporated into a review of RSSB good practice guides in the area of Workforce Development. Feedback about the format of these guides will inform this review which has been agreed by the Train Operations Standards Committee and which will also be undertaken by RSSB.

The implementation group will support the aim of translating the appetite to improve training and competence management into tangible safety and business benefits, building on what is already good about existing models, whilst continually enhancing their effectiveness and efficiency through taking a learner-centred, competence-based approach.

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