RAILSAFE

Education, Qualification and Certification

www.ewf.be/railsafe

Summary report on pilot courses

RAILSAFE is a LEONARDO DA VINCI
Community Vocational Training Action Programme Project

RAILSAFE/REP/PU/TWI/TJJ/070806/4

1. Introduction

Pilot courses were conducted in five countries: Germany, Sweden, Portugal, the Netherlands and the UK. As far as possible, all courses were conducted in accordance with the RAILSAFE Guideline [(1)] in terms of the course curriculum (theoretical and practical) and the examination, leading to the award of a Diploma for a European Aluminothermic Welder. The training materials, examination question banks and practical examination regimes developed under the project were also used. A key feature of the exercise was to seek feedback from participants on the effectiveness of the courses and examinations.

The courses were conducted at various times during the first half of 2007.

2. Objectives

The objective of the pilot courses was to verify the effectiveness of the RAILSAFE system developed in Work Packages 1 to 4 of the project.

3. Pilot course delivery

Students were selected on the basis of them satisfying the course access requirements stated in the RAILSAFE Guideline [(1)], *i.e.*

'For entry to the course, appropriate health, physical and mental capability is assumed. The participants are required to have knowledge and skills on health and safety, track construction, cutting and grinding as specified by the RANB.
The minimum age is 18 years. Participants must have a spoken and written command of the language in which the course is offered.'

The pilot course centres were provided with copies of the RAILSAFE Guideline [(1)] and were asked to organise a course in compliance with the Guideline.

The centres were also provided with training materials developed under the RAILSAFE project and asked to use those materials where applicable on the pilot courses. As there are variations in the requirements of national rail authorities, the centres were also permitted to use their own training materials relating to any such specific requirements.

With regard to examinations, the centres were provided with: the bank of multiple choice questions; an example of a practical test regime; and the Practical Test Specification form, all of which were developed under the project. For the reasons regarding national requirements indicated above, centres were permitted to deviate from the standard materials but they were asked to keep any deviation to a minimum.

Table 1 summarises the conditions of the pilot courses. From this it can be seen that a total of 38 students participated in the pilot courses. Although all the students met the access conditions set out in the Guideline, there were some variations in terms of experience in aluminothermic welding. It is also clear from Table 1 that there is a significant amount of content in terms of specific national requirements that needs to be fulfilled both for training and for examinations. This generally arises from the national railway authority's specifications and from the national versions of the process suppliers' process manuals that are designed to meet those specifications.

	Name of Training Centre	Dates of Pilot Course (including examinations)	% of own national training materials used (on average)	% of own national exam questions used	No of students	Background of students
Germany	SLV Hannover	26 February – 16 March 2007	15%	36%	11	Track experience but no experience in welding or cutting
Sweden	Järnvagsskolan, Ängelholm	16-27 April 2007	50%	40%	6	4 Swedish, 2 Norwegian All had worked in track aluminothermic welding under supervision for several years
Portugal	Theoretical part: ISQ, Porto Salvo Practical part: Ferrovias Construções SA, Aguas de Moura	12-30 March 2007	35%	55%	8	Current aluminothermic welders
Netherlands	VolkerRail Contracting BV Dordrecht	17 April – 4 May 2007	40%	40%	9	Mixed levels of rail welding experience One student was the Manager of the Welding Department
UK	Carillion Rail, Crewe	16 April – 4 May 2007	30%	None	4	Track experience but no training or experience in welding or cutting

Table 1 Main Features of Pilot Courses

With the exception of the one in Sweden, all the courses were conducted in accordance with the above. In the case of Sweden it was only possible to deliver the RAILSAFE materials in parallel to an existing nationally approved advanced aluminothermic welding course. As a result it was not possible to conduct the course exactly in accordance with the RAILSAFE Guideline. However, the RAILSAFE training material was used and useful feedback was obtained from the exercise.

Feedback on the courses and the examinations was sought and received from the students and the instructors.

4. Pilot course outcomes

Examination results

These are summarised in Table 2. As can be seen, the pass mark was very high with only two candidates failing to meet the overall standard. However, the degree of difficulty of the practical examination varied somewhat due to national requirements. For example, in Portugal where the failures occurred, the standard was set at the highest level of alignment in EN 14730-2. In the UK the students were evaluated against a lower standard commensurate with the UK requirements for being approved as an 'Assistant Aluminothermic Welder'.

	Number of students	**Theoretical exam passes**	**Practical exam passes**	**Diplomas awarded**	**No of database entries**
Germany	11	11	11	11	11
Sweden	6	6	6	6	6
Portugal	8	6	7	6	6
Netherlands	9	9	9	9	9
UK	4	4	4	4	4

Table 2 Examination results

4.2 Feedback

Opinions were sought on all aspects: the content of the course, the teaching materials, the facilities and equipment, safety aspects, competence of teachers and the examinations. In general terms the feedback obtained from students and instructors was very positive. The teaching materials were particularly highly rated.

In terms of improvement suggestions, a summary of the feedback obtained from each of the pilot course centres is shown in Table 3.

From Table 3 it can be seen that the most common suggestion was to improve the duration of the practical part of the examination. As a result changes to the RAILSAFE Guideline were made as indicated in Table 3.

The action taken on other improvement suggestions are also indicated in Table 3.

	Feedback received	Action taken as a result of feedback
Germany	More time should be allocated to practical training in rail grinding.	This can be done at the discretion of the training organisation.
	More time should be allocated to practical training generally.	*
Sweden	More training required to deal with forces in the track.	Added to Section 1.2 of the RAILSAFE Guideline
	Some aspects of the RAILSAFE training material were not in accordance with national requirements.	This can be dealt with by individual training organisations.
Portugal	Practical training should be extended by one more week.	*
	Course has too much theoretical training.	Considered but decided not to change the Guideline [(1).] The view of the partners is that welders must have an amount of theoretical knowledge in order to understand the reasons for the precise procedures they are following. Departure from these procedures can result in defective welds.
Netherlands	A gap between the theoretical and practical parts would be useful in order for students to gain experience.	The RAILSAFE Guideline was changed to accommodate this.
UK	More time should be allocated to the practical part of the course.	*

*It was determined that the reason for the comment was that the training organisations concerned tried to cover more than one process in the practical part. The Guideline was changed to make it clearer that the duration of the practical part is designed for one process supplier only.

Table 3 Improvement suggestions from pilot courses

Conclusions

The pilot courses achieved the objective of verifying the effectiveness of the RAILSAFE system with some useful improvements to the Guideline being identified.

Further work would be desirable in order to better delineate harmonised European training/examinations and specific national requirements for training/examinations.

Reference

[(1)] RAILSAFE Guideline - 'Minimum Requirements for the Education, Training, Examination, Qualification and Certification of a European Aluminothermic Welder (EAW)' - RAILSAFE/GUIDE/PU/SLV/TB/060227/14

INVENTORY OF ANNEXES FOR PILOT COURSES (WP 5)

1 CVs of students

2 Training material

3 Theoretical exam papers

4 Completed practical test specifications and 'check list' for practical test

5 Copies of diplomas

6 Copies of completed feedback forms