



# Economic and Social Council

Distr.: General  
21 November 2014

Original: English

## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Road Traffic Safety

##### Group of Experts on Improving Safety at Level Crossing

###### Third session

Geneva, 23-24 October 2014

## Report of the Group of Expert on Safety at Level Crossing on its third session

### Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Attendance.....	1–3	3
II. Adoption of the Agenda (agenda item 1) .....	4	3
III. Programme of Work (agenda item 2).....	5–9	3
A. A review and analysis of the economic costs of level crossing accidents based on data provided by countries .....	10	4
B. An evaluation and analysis of the safety performance of types of level crossings in UNECE member States and in selected non-UNECE member States such as Australia, India, New Zealand and South Africa.....	11–17	5
C. A summary of good practices including education.....	18–20	6
D. A survey of prevailing national legislation and/or legal arrangements at level crossings.....	21–22	6
E. A survey of technology and technological solutions to improve safety at level crossings.....	23	7
F. Identification of the key causes and possible solutions related to human factors contributing to unsafe conditions at level crossings.....	24–27	7
G. Enforcement.....	28–29	7
H. Development of a road/rail interface strategy with recommendations.....	30–32	8
I. Workshops to support the strategic plan .....	33	8
J. Future strategic and operational research needs.....	34	8

IV. “Safety at level crossings” report (agenda item 3) .....	35–36	8
V. Other Business (agenda item 4).....	37–40	9
VI. Date and Place of Next Meeting (agenda item 5).....	41	9
VII. Adoption of Report (agenda item 6).....	42	9

## **I. Attendance**

1. The Group of Experts on Safety at Level Crossing (GE.1) held its third session in Geneva from 23-24 October 2014, chaired by Mr. Martin Gallagher (United Kingdom of Great Britain and Northern Ireland). Representatives of the following member States participated: Austria, Belarus, Belgium, Bulgaria, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Spain Sweden, Switzerland, Turkey and the United Kingdom of Great Britain and Northern Ireland (UK).

2. The representatives of a non-ECE member State also participated: India.

3. The European Union (EU) and the following non-governmental organizations were represented: European Railway Agency (ERA), International Union of Railways (UIC), Operation Lifesaver Estonia, German Aerospace Center e.V. (DLR), Community Safety Partnerships Ltd. (CSP) and CogniTo Ltd.

## **II. Adoption of the Agenda (agenda item 1)**

4. The Group of Experts adopted the annotated provisional agenda for the third session (ECE/TRANS/WP.1/GE.1/5) with the addition of the topic of road traffic signals at level crossings, and how road users and rail operators respond to them, (to be discussed under item 2).

## **III. Programme of Work (agenda item 2)**

5. Following its second session, the Group of Experts, with the assistance of the secretariat, compiled and circulated a multi-dimensional questionnaire comprised of information sought from its various subgroups on the following aspects:

- Economic costs of level crossing accidents;
- Data on level crossings being collected;
- Good practices in relation to safety at level crossings;
- National legislation and/or legal arrangements at level crossings;
- Human factors impacting on safety at level crossings (including safety-related technology); and
- Enforcement.

6. As at 15 September 2014, the secretariat had received 26 responses from 22 countries (comprising 21 UNECE member States and 1 non-UNECE member State). These are Belarus, Belgium, Bulgaria, Estonia, France, Georgia, Germany, Greece, Hungary, Ireland, Italy, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Spain, Sweden, Switzerland, Turkey, and India. The secretariat had recently received survey feedback from the UK, and would make this available to the subgroups. The secretariat observed that the majority of respondents who had completed the survey were members of GE. 1.

7. The Chair summarized the survey findings:

- The wide and detailed response has enabled a representative range of discovery work by the GE.1 subgroups to be completed;

- A lack of consistency in all areas including data, policy, regulations, legislation, covered by the subgroup topics made comparative analysis by the subgroups very difficult. This has resulted in an analysis of what member States do rather than how effective the range of actions were;
- A general lack of formal measurement, base lining, benefit realisation and evaluation had made the analysis and identification of good practices problematic;
- Nothing new was submitted in terms of interventions and good practices;
- The undertaking of further discovery work would likely generate similar issues and consume valuable time and resources; and
- What has been achieved so far is a hybrid maturity assessment and capability model.

8. The Chair emphasized that the objective of GE.1 was to produce a strategic report and recommendations covering key important areas of level crossing safety as identified by GE.1 members. The next step for the subgroups was to identify the 'to be' place where any infrastructure or asset manager with responsibilities for level crossing safety would aspire to be. The 'to be' state — the blueprint — would improve capability irrespective of the level of national development. While the rate and scale of improvement would be linked to resources and development, there would be low cost items available, even if it was training as opposed to technology.

9. Once the 'to be' for each group has been defined and agreed upon by GE.1, the next question would be what it will take to get to the 'to be' state. These would form the basis of the recommendations in the final report of GE.1.

#### **A. A review and analysis of the economic costs of level crossing accidents based on data provided by countries**

10. On behalf of its subgroup, Poland summarized the findings and recommendations contained in Informal document No. 1. GE.1 requested the subgroup to:

- Review the available methodologies for estimating rail/road accident costs and derive a method for the estimation of costs of level crossing accidents;
- With the assistance of the secretariat, to invite the authors of the methodology prepared by the World Bank to the next session of the Group of Experts to share their ideas on the development of the methodology;
- Review the available studies that produced estimates of economic costs of casualties and to make a recommendation on their use in the absence of nationally established estimates;
- Prepare and execute a more detailed survey targeting relevant interested countries (and more specifically, GE.1 infrastructure managers) to get an overview of the typical costs incurred in level crossings accidents;
- Request from GE.1 members, papers or case studies on economic costs, and review the documents received; and
- Prepare an informal or formal paper for the next session detailing the outcomes of the above actions and proposing next steps.

## **B. An evaluation and analysis of the safety performance of types of level crossings in UNECE member States and in selected non-UNECE member States such as Australia, India, New Zealand and South Africa**

11. On behalf of its subgroup, CSP summarized the findings and recommendations contained in Informal document No. 2.

12. ERA gave a presentation on its “2014 Railway Safety Performance in the European Union” report, with an emphasis on the level crossings safety data that is collected by ERA from the member States of the European Union.

13. The secretariat made a presentation on the role and work of the Working Party on Transport Statistics (WP.6) which develops methodologies and terminology for the harmonization of statistics and the collection of data from UNECE member States and the dissemination of these data, including potential opportunities for WP.6 to assist the Group of Experts in the collection of data related to safety at level crossings. However, the secretariat required a mandate from GE.1 (or its parent body WP.1) before it could do so.

14. In light of the relevance of the European Commission’s 2003 “Safety at level crossings” report on this item, the EC was invited to provide an update on the implementation of its report by EU member States. A summary of its presentation may be found under item 3 below.

15. GE.1 discussed the types of safety performance data (i.e. Eurostat) already being collected by ERA, and the lack of uniform validated data being collected outside of the European Union region. GE.1 agreed that, the scope of the work of GE.1 was restricted to the area of level crossings safety and accidents occurring at level crossings, and did not extend to the entire railway network. Accordingly, the scope of work of GE.1 is not intended to cover unauthorized persons/points (i.e. suicides and trespassers) and the condition of railway assets.

16. In response to the suggestion of a second distribution of the survey to UNECE member States through UNECE official channels, the secretariat was of the view that this would not likely yield additional feedback, and that it would be more beneficial to focus on directing further queries to GE.1 members and their network of contacts within their national governments and relevant railway authorities.

17. GE.1 requested the secretariat’s assistance to contact the GE.1 members who had not yet completed the survey to request that they do so as soon as possible, or by latest 15 November 2014. GE.1 also requested the subgroup to:

- Finalize its analysis of the most suitable indicators of safety performance at level crossings taking account of existing approaches and data available in UNECE countries, and to propose the most appropriate benchmarking indicators;
- Collect data from available sources such as ERA/Eurostat, UIC, in relation to the identified most suitable indicators of safety performance, as well as to solicit data from GE.1 members which are not providing data to ERA (i.e. Russian Federation, Turkey, India); and
- Prepare an informal or formal paper for the next session detailing the outcomes of the above actions and proposing next steps.

### **C. A summary of good practices including education**

18. On behalf of its subgroup, Finland summarized the findings contained in Informal document No. 3. It highlighted that there was a wide range of good practices and what was a good practice in one country is not necessarily a good practice in another country. Finland also emphasized that most good practices examples provided through the survey had not been evaluated. It also shared its level crossing research tool which is comprised of nearly 40 measures to indicate the safety impact of a level crossing measure.

19. India gave a presentation on its unique level crossing situation and challenges including the theft of level crossing warning devices and the challenge of raising awareness in a nation with many different languages. It shared its Vision 2020 plan of eliminating all unmanned level crossings in India within 10 years.

20. GE.1 requested:

- its members to send national case studies and examples of evaluated good practices to this subgroup. It also requested this subgroup to undertake research on evaluated good practices, which could potentially be compiled into examples to be included in good practices related to safety at level crossings in the Consolidated Resolution on Road Traffic (R.E.1);
- other subgroups to send examples of good practices in their respective areas to this subgroup; and
- this subgroup to prepare an informal or formal paper for the next session detailing the outcomes of the above actions and proposing next steps.

### **D. A survey of prevailing national legislation and/or legal arrangements at level crossings**

21. On behalf of its subgroup, ERA summarized the findings and recommendations contained in Informal document No. 4. The discussion of GE.1 revolved around the usage of the St. Andrew cross and other signs indicating the presence of a level crossing, as well as the responses by people to such signs. Belgium referred to the complementary work being undertaken by the Group of Experts on Road Signs and Signals (GE.2) in relation to the collection of road signs being used by Contracting Parties to the 1968 Convention on Road Signs and Signals (many of whom are UNECE member States and members of GE.1), and emphasized that it was important not to duplicate the work of GE.2. The secretariat also drew the attention of GE.1 to articles 33 to 36 of the 1968 Convention on Road Signs and Signals which state what, how and where level crossings signs in Contracting Parties should look like and be situated.

22. GE.1 requested the subgroup to:

- explore available information in studies and to contact GE.1 members for specific detailed information it may require;
- enquire on the details concerning legal arrangements on accident costs reimbursement in the countries in which GE.1 members indicated that such arrangements exist;
- through the secretariat, contact GE.2 with the view to coordinate complementary work in respect of the inventory of level crossings-related traffic signs under the 1968 Convention on Road Signs and Signals presently being undertaken, and the information concerning the usage of such signs in Contracting Parties;

- identify whether there are aspects under this item that could be proposed for harmonization or other recommendation within UNECE member States, and if relevant, within attending non-UNECE member States; and
- prepare an informal or formal paper for the next session detailing the outcomes of the above actions and proposing next steps.

## **E. A survey of technology and technological solutions to improve safety at level crossings**

23. As the Group of Experts did not receive Informal document No. 5, it agreed to defer discussion on this item to its next session.

## **F. Identification of the key causes and possible solutions related to human factors contributing to unsafe conditions at level crossings**

24. In place of Informal document No. 6, GE.1 received a presentation from the subgroup comprised of Austria, German Aerospace Center and Cognito Ltd. Based on the survey results, the subgroup observed that, according to survey responses, human factors had been identified as a key factor behind level crossing accidents. It also found that tools and solutions to date have a technological focus, and may not take into account human factors. In addition, tools and solutions were often based on impressions of singular incidents, as opposed to being approached from a structured, theory driven methodology. The subgroup advised that it was working on the development of a level crossings toolbox to identify and evaluate solutions for different level crossings situations, and that it would present this model, at the next meeting.

25. To facilitate its work, and the development of the model, the subgroup requested that GE.1 members send them level crossing accident reports. The subgroup would also approach the Austrian accident investigation body for level crossing accident reports in Austria. Italy, Belgium and ERA indicated that they were willing to find and send such reports, which were to be used anonymously, without reference to the persons involved or other identifying factors.

26. GE.1 requested:

- Italy, Belgium, ERA and other interested members to send level crossing accident reports to this subgroup;
- this subgroup to continue and finalize its development of the above-mentioned level crossings toolbox; and
- this subgroup to prepare an informal or formal paper for the next session in relation to the model, its analysis of the accident reports it would be receiving, and to also propose next steps for its work.

27. In relation to the issue of solid red lights and flashing red lights, and how road users and rail operators respond to them, and level crossing related road signs and signals, the UK indicated that the issue had been picked up under the discussions of GE.1 under item 2(d) and that it would join that subgroup and provide contribution.

## **G. Enforcement**

28. In place of Informal document No. 7, GE.1 received a presentation from the subgroup comprised of France and the United Kingdom of Great Britain and Northern

Ireland. The presentation summarized the type of violations and violation detection tools being used in the countries of GE.1 members, as well as some limitations of their present enforcement systems as indicated in the survey responses. The subgroup indicated that it wished to undertake a specific survey within GE.1 for further enforcement related information.

29. GE.1 requested the subgroup to:

- Undertake a specific survey within GE.1 for further enforcement related information;
- include the matter of private crossings, regulatory enforcement, and variations in the nature and levels of sanctions in punitive and corrective measures, in its further analysis; and
- prepare an informal or formal paper for the next session detailing the outcomes of the above actions and proposing next steps.

## **H. Development of a road/rail interface strategy with recommendations**

30. The Group of Experts agreed to replace the words “supporting action plan” in the title of this item with “recommendations”. It also agreed that the ultimate strategy would cover the identification of future strategic and research needs.

31. The Group of Experts received a presentation from Ireland on a level crossing safe system model (LCSSM) comprised of 10Es and involving a process of continual improvement: expectations, economics, engineering, environment, ergonomics, enable, education, encourage, enforce, emergency preparedness.

32. The Chair observed that many of these elements had been raised in the discussions, and work of the various subgroups, though some elements were missing. After discussion, it was agreed to circulate the LCSSM to GE.1 members, and to obtain their opinion at the next session, on whether GE.1 should include the LCSSM as part of the identification of good practice, or to go further and include this as part of a stronger recommendation.

## **I. Workshops to support the strategic plan**

33. The Group of Experts agreed to delete this item from its work programme given its limited resources and time constraints.

## **J. Future strategic and operational research needs**

34. The Group of Experts agreed that this item would flow from item 2(h) above, and accordingly, should be part of the road/rail interface strategy with recommendations to be proposed by the Group of Experts.

## **IV. “Safety at level crossings” report (agenda item 3)**

35. The European Commission made a presentation on its December 2003 “Safety at level crossings” report. It also took the opportunity to give an overview of its current road safety priorities, projects and funding. It emphasized the significance and importance of ERA to the work of EC on railways and railway safety.



36. The highlight of the presentation of EC was its account of what it considered to be the seven most relevant recommendations from its 2003 report – namely, to reduce the number of level crossings in operation; the use of in-vehicle information systems to warn drivers; to merge or cross-reference its separate rail and road accident databases; to systematically include information on contributory user behaviour in accident reports; to establish a common classification system for level crossings across the EU; to improve and automate the enforcement of traffic rules; and to increase user awareness using information campaigns. It reported good progress on all of the above recommendations over the past ten years, and in particular that it had now fully integrated its rail and road accident databases, and agreed on a common classification of level crossings in Europe.

## **V. Other Business (agenda item 4)**

37. The Group of Experts viewed, and expressed its appreciation for, the Russian Federation’s new short film on raising awareness of specific dangers and worst behaviours around level crossings.

38. The Group of Experts also viewed and appreciated the short film produced by the Ministry of Transport of the Swiss Confederation, the UIC and the UNECE on “Saving lives at level crossings” on the occasion of ILCAD 2014.

39. The secretariat advised that the deadline for the submission of formal documents for the fourth session (for the timely translation into the UNECE official languages) was 20 November 2014.

40. UIC advised that the date of ILCAD 2015 was 3 June 2015.

## **VI. Date and Place of Next Meeting (agenda item 5)**

41. The Group of Experts was informed that its fourth session will be on 29-30 January 2015 in Geneva.

## **VII. Adoption of Report (agenda item 6)**

42. The Group of Experts adopted the report of its third session.

---