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**Economic Commission for Europe****Inland Transport Committee****Working Party on Transport Statistics****Sixty-ninth session**

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Item 4 (d) of the provisional agenda

**Data collection, methodological development and harmonization of transport statistics: road traffic accident statistics and rail traffic accident statistics****Statistics of Safety at Level Crossings****Note by the secretariat****I. Background**

1. At its sixty-seventh session in 2016, the Working Party decided to send a pilot questionnaire on level crossing accidents, at the request of the UNECE Group of Experts on Improving Safety at Level Crossings (WP.1/GE.1) based on its draft safety assessment report (ECE/TRANS/WP.1/GE.1/2016/2), which subsequently was adopted by the Global Forum for Road Traffic Safety (WP.1) in 2017 and became document ECE/TRANS/WP.1/2017/4.
2. The Working Party may recall that the questionnaire was not sent out after the sixty-seventh session due to a lack of resources. At the sixty-eighth session the Working Party confirmed that the questionnaire should be sent out in 2017.
3. The secretariat distributed the questionnaire, in English, French and Russian, to all member States not covered by the database of the European Union Agency for Railways (EUAR) in July 2017, setting a deadline of September 2017. The EUAR database covers all 28 European Union Member States, plus the former Yugoslav Republic of Macedonia, Norway, Switzerland and Turkey.
4. The distributed questionnaire was somewhat smaller than the one proposed in ECE/TRANS/WP.1/2017/4. Derived indicators, numbers that were simply calculated using two other indicators from the questionnaire, were removed for simplicity.
5. As of January 2018, responses had been received from ten countries, namely Albania, Armenia (without relevant data), Azerbaijan, Canada, Georgia (only covering

some level crossing infrastructure), Israel (without relevant level crossing data, but with more general railway statistics), the Republic of Moldova, the Russian Federation, Serbia and the United States of America.

### **Documentation**

ECE/TRANS/WP.1/GE.1/2016/2, ECE/TRANS/WP.1/2017/4

## **II. Data Availability from the Questionnaires**

6. The following paragraph describes data availability in the received questionnaires. In addition, it makes comparisons between these data and data from two other sources: the pilot questionnaire on rail accidents that was sent out earlier in 2017; and the responses to the questionnaire sent out by WP.1/GE.1 in 2016 (where available).

7. Albania provided data only on numbers of people killed at level crossings and numbers of people seriously injured at level crossings. They reported that three people died at level crossings in 2016 and fourteen were seriously injured. No other source (neither rail accident statistics nor a previous WP.1/GE.1 questionnaire) was available to compare these data to.

8. Azerbaijan provided a comprehensive level of data, specifically:

(a) Number of level crossings, with a complete breakdown between passive and active level crossing (and then broken down between manual, rail-side protected, automatic with user-side warning and automatic with user-side protection);

(b) Total number of fatal accidents at level crossings, broken down between passive and active level crossing. Out of nineteen fatal level crossing accidents between 2010 and 2016, fifteen happened at passive level crossings;

(c) There was only one reported serious accident at level crossings for 2010-2016, therefore these data seem to be not available;

(d) The total number of all railway accidents at level crossings was provided, split between passive and active level crossings;

(e) Total numbers of people killed and seriously injured at level crossings. This was broken down between motor vehicle users and others. Out of 28 deaths at level crossings during the reporting period, 22 were motor vehicle users.

No other source (neither rail accident statistics nor a previous WP.1/GE.1 questionnaire) was available to compare these data to.

9. Canada provided a comprehensive level of data, specifically:

(a) Number of level crossings, with a complete breakdown between passive and active level crossing (and then broken down between automatic with user-side warning and automatic with user-side protection; no manual or rail-side protected crossings were reported);

(b) Total number of fatal accidents, significant accidents, and all accidents at level crossings; these were broken down in the same way as the number of level crossings;

(c) Total number of persons killed, and persons seriously injured, at level crossings; no breakdown by level crossing type given for these two indicators;

Data were compared against the rail accidents dataset, and the data collected by WP.1/GE.1, and were identical.

10. Georgia only provided the number of level crossings, which was 30 in 2016. This would appear to be a rather small number, given the hundreds or thousands of level crossings reported in countries with similar lengths of train lines, perhaps only referring to active level crossings.

11. The Republic of Moldova provided total number of level crossings, all of which were classified as passive. They reported 242 000 level crossings, which was assumed to be 242. In addition, total number of fatal accidents were provided, together with total number of all railway accidents at level crossings, total number of persons killed at level crossings, and total number of persons seriously injured at level crossings.

12. The Russian Federation provided infrastructure information, with level crossings broken down between active and passive, all the active ones being classified as automatic with user-side protection. Total number of all railway accidents at level crossings, and total number of people killed and people seriously injured at level crossings, were provided for the last two years (2015 and 2016), broken down by victim type. The infrastructure data agree completely with those reported to GE.1. The number of fatalities (58 in 2016) was much larger than that of total rail accidents reported in the other questionnaire, and judging by the breakdown of the level crossing data it would appear that victims who were motor vehicle users have been excluded from the rail accident statistics. Data for number of level crossings and number of fatalities agree with those in the GE.1 data collection.

13. For Serbia, the number of active and passive level crossings were given, together with total number of all railway accidents at level crossings, total number of persons killed at level crossings, and total number of persons seriously injured at level crossings. No breakdown of these accidents was given by type of victim. The data agree with the rail accident figures provided from the other questionnaire.

14. For the United States, level crossing numbers were provided, but a crucial detail is that around 40 per cent of level crossings are private crossings. The passive and active crossings breakdown was given, but these numbers only apply to public crossings and thus only make up around 60 per cent of the total. In addition, the total number of railway accidents at level crossings and total numbers of persons killed at level crossings were given. Data were broadly comparable with the rail accident statistics database and the GE.1 report.

### **III. Discussion of Data Availability**

15. The following paragraphs describe the level crossing data availability by theme, and discuss more anecdotally what data would be expected to be available.

16. Level crossing characteristics: most countries (seven out of ten) reported at least some information on the number of level crossings, and it would be expected to be widely available through infrastructure management data. As six countries can split this further into passive versus active, these data are well available and the Working Party may continue to ask for this information.

17. The total number of accidents, and number of significant accidents at level crossings: it is customary in both road safety data and rail safety data to report the type of location, both of which include level crossings. It is thus unsurprising that these data were reported for six of the ten countries. Breaking these numbers of accidents down by type of level crossing, in particular the different listed types of active crossing, proved harder for many countries (with only two countries managing this), reflecting the same pattern as the EUAR countries.

18. The number of fatalities and injuries again are typically available from basic (rail and/or road) safety data, although pedestrian and cycling accidents, in particular those that do not result in a fatality, may suffer from under-reporting. The breakdown of these by type of user would also be expected to be collected through the usual road and rail safety mechanisms (at least those victims who were considered road users or rail users). Seven of the countries could provide data on at least fatalities, whereas only Azerbaijan could provide the victim data broken down.

19. Just from this data collection some basic analyses of safety can be made. For example, in the United States and Canada around 65 per cent of level crossing accidents occur at active level crossings, while in Azerbaijan the figure is just 7 per cent. And the clear majority (90 per cent) of the deaths at level crossings in Russian Federation happen to motor vehicle users. If this dataset is to be continued and disseminated, then further general trends and cross-country comparisons could be made.

#### **IV. Summary**

20. The results received from the questionnaire were briefly presented to WP.1 in March 2018 for information. WP.1 welcomed this data collection and encouraged WP.6 to continue the collection, and to report back with a more in-depth briefing at a future session.

21. The Working Party may wish to take note of data availability for level crossing safety, and consider whether the secretariat should continue to collect these data, temporarily or permanently, in the current format or amended. The Working Party may wish to disseminate these data for the entire ECE region, in combination with the EUAR data. The Working Party may wish to encourage other member States who are not covered by EUAR data and did not respond to this questionnaire to provide data in the future.

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