

## Note on House of Commons Transport Committee report on Safety at Level Crossings

1. On Day 6 of the Inquiry, the Inspector referred to paragraph 15 of the House of Commons Transport Select Committee 'Safety at level crossings'<sup>1</sup> and raised the following question:

Paragraph 15 of the report states that analysis of Network Rail and DfT data shows that having a level crossing on the walk doubles the risk, so is it fair to say that replacing the level crossing with a walk makes an equivalent total risk? For example if a walk risk is 1, a walk plus a level crossing is a risk of 2, so is a walk plus a walk would be a risk of 2?

2. Paragraph 15 (on page 10) of the Report states:

“Unlike crossing a road, where motorists can swerve and brake and vehicles are lighter than trains, the consequences of being struck by a train are almost always very serious, if not fatal. **Analysis of Network Rail and Department for Transport data (see Annex) shows that if an average walking trip includes a level crossing, the fatality of risk to a pedestrian is about double the risk of an average walking trip without a level crossing. Overall, there is an increase of around 8% in the risk of a fatality during an average car journey that includes a level crossing, compared with one that does not. We recommend that the Office of Road and Rail Regulation adopt an explicit target of zero fatalities at level crossings from 2020.**”

3. Table 1 from the Annex to the report is shown below.

**Table 1: Journeys and fatalities with car and walk as main mode (2012)**

|                                                      | Source         | Car       | Walk     |
|------------------------------------------------------|----------------|-----------|----------|
| <b>Road journeys</b>                                 |                |           |          |
| (a) Trips/person/year with given main mode           | NTS0409        | 614       | 212      |
| (b) Km/person/year with given main mode              | NTS0410        | 8359      | 243      |
| (c) Average length of trip with given main mode (km) | (b)/(a)        | 13.61     | 1.146    |
| <b>Road fatalities</b>                               |                |           |          |
| (d) Road fatalities per billion person-km            | RAS53001       | 1.3       | 23       |
| (e) Road fatalities per billion trips                | (c)*(d)        | 17.70     | 26.36    |
| (f) Road fatalities per single trip                  | (e)*1E-09      | 1.77E-08  | 2.64E-08 |
| <b>Level crossing traverses</b>                      |                |           |          |
| (g) LC vehicle or pedestrian traverses per year      | NR LC database | 12.38E+08 | 2.43E+08 |
| (h) Average car/van occupancy                        | NTS0905        | 1.56      |          |
| (i) LC person-traverses per year.                    | (g)*(h)        | 19.31E+08 | 2.43E+08 |
| <b>Level crossing fatalities</b>                     |                |           |          |
| (j) LC Fatalities per year 2003/04-2012/13j          | ASPR Chart 187 | 2.6       | 7.3      |
| (k) LC fatalities per person-traverse                | (j)/(i)        | 1.35E-09  | 3.01E-08 |
| <b>LC /road fatalities comparison</b>                |                |           |          |

4. The 8% increase in risk for an average car journey, referred to in paragraph 15 of the report, seems to be based on a calculation that compares a baseline figure for the number of fatalities incurred on a road trip with the number of fatalities incurred on a vehicle traverse of a level crossing.

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<sup>1</sup> NR-INQ-12 2.6.18

5. A calculation to compare the risk for an average walking journey to one that includes a pedestrian traverse of a level crossing shows an increase of 114% in risk. This is based on a calculation that compares a baseline figure for the number of fatalities incurred on a walking trip (based on an average length of 1.146km) – shown in the table in Annex 1 as 2.64e-08 - with the number of fatalities incurred on a pedestrian traverse of a level crossing – shown in the table in Annex 1 as 3.01e-08.
6. The baseline figure for a walking journey is based on an average trip length of 1.146km. The data is based on DfT National Travel Survey statistical tables. The Select Committee report does not attempt to calculate statistics for longer or shorter journey lengths.
7. Looking at the figures included within the Table in Annex 1, it would be reasonable to assume that the total fatalities (road and level crossing) for a walking trip that included a traverse of a level crossing would be the fatality risk of the walking trip (2.64e-08) plus the fatality risk of traversing the level crossing (3.01e-08), which is 5.65e-08. If the level crossing was removed from that journey the total fatalities would reduce to the baseline figure of 2.64e-08 for an average walking trip, approximately halving the risk. I have assumed that this is what lies behind the Select Committee's finding in paragraph 15 of the Report that where a walking trip includes a level crossing, the risk is about double that of a walking trip which does not include a level crossing.
8. The House of Commons Transport Committee report on Safety at Level Crossings is clear regarding the fact that if an average walking trip includes a level crossing, the fatality of risk to a pedestrian is about double the risk of an average walking trip without a level crossing. The report does not, however, set out a methodology for assessing the risk if the level crossing is replaced with additional road walking. On that basis, I do not consider it can be said that if the risk of a walk is 1, and the risk of a walk including a level crossing is 2, that if you remove the level crossing and replace it with an additional length of road walking, that the risk of that alternative journey is also 2.
9. As set out in paragraphs 5 to 7 above, the analysis which sits behind the Select Committee's findings in paragraph 15 of the Report carried out is based on an average walking trip of 1.146km. The walk risk is based on the length of the average walk. In theory, to assess if an additional walk to replace the level crossing traverse would take the pedestrian beyond the length of the average walk (ie the 1.146km), and hence increase the risk, the specific details of the origin and destination would need to be known together with the length of any additional sections of road walking.
10. In conclusion, I do not consider the Select Committee report can be read as supporting the suggestion that removing a level crossing and adding a road walk to a walking trip equates to the same risk as a walking trip that includes a level crossing. I think the most that can be taken from the Report is the Select Committee's finding that the risk of a walk which includes a level crossing is around double that of a walk which does not include a level crossing.