

CASE STUDY



Analysis of a good practice case study of pedestrian crossings assessment in Europe.





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1. Introduction

“Unprotected road users” is a term describing those most at risk to road crash death and injury including pedestrians and cyclists, as they are unprotected by an outside “shell”, as vehicle passengers are.. Among these, pedestrians and cyclists are those most unlikely to inflict injury on any other road user, while motorized two-wheelers, with heavier machines and higher speeds, may present a danger to others. [...] Of the unprotected or vulnerable road users, some are more vulnerable than others, in particular the elderly, the disabled, and children.

In 2009 over 15,300 unprotected road users were killed in EU countries as a consequence of road crashes. Since 2001 a total of 169,000 pedestrians, cyclists and users of powered two-wheeled vehicles have been killed on European roads. Every year in EU more than 8.000 pedestrians alone are killed in road crashes and almost one in four fatalities happens on pedestrian crossings.

For the WHO European Region as a whole, the CIS and the EU, vulnerable road users account for 39% of road traffic deaths. This is slightly less than the global figure of 46%.

The European Pedestrian Crossings Assessment Programme, is an independent assessment process aimed at the improvement of pedestrian crossings in Europe through safety inspections and an evaluation methodology.

2. Objectives

The primary objectives of the EPCA have been to reduce pedestrian fatalities, improve users’ behaviour and highlight better crossings solutions through an international comparison.

3. Target groups

The main target groups of the initiative are:

- Road users: pedestrians and drivers in urban areas
- Local, National and European Authorities
- Road management operators of the participating cities

4. Team and key stakeholders

The Project was conceived and developed by the Automobile Club d’Italia (ACI) and implemented as part of the FIA’s EuroTEST Initiatives in cooperation with 17 Automobile Clubs from 16 European Countries (members of FIA - Federation Internationale de l’Automobile).

5. Management and financing

The project management structure was established, with a project manager, some working groups, including 12 ACI Inspectors, who performed the tests. The initiative received financial support by FIA Foundation.

6. Pre-initiative research/data

The high number of pedestrians killed in road accidents in Europe pushed ACI and its partners to start an assessment programme focused on pedestrian crossings. As in previous EuroTest surveys, a methodology was developed aimed at assessing the safety levels of individual pedestrian crossings supported by an awareness campaign targeting pedestrians and drivers.

Some statistical analysis, comparison of national rules and crossings design standards and a specific methodology were developed before to start the test campaign.

The ACI, which led the project, developed a methodology for the safety assessment of the pedestrian crossings.

In order to make the assessment as much comparable as possible among the different cities, all the tested crossings have been selected inside well defined areas of each city, according the following common guidelines:

- High tourist interest
- Good transport facilities
- Traffic criticisms nearby

Similar dimensions of the areas. Within each area, a minimum of 10 crossings were submitted to the inspections, trying to cover all the possible kind of crossings (signalized/not signalized, intersection/road link, one way/two ways roads, one lane / multi-lane per direction). Each crossing was tested both in the daylight and in the night time.

On the basis of literature review results, 25 safety factors were defined and clustered into four safety categories. The weighting process was carried on in 2008 by the CTL (Centro Ricerche Trasporti. Transport Research Center a Department of La Sapienza University in Rome, engineering) by means of cross-comparison submitted to a qualified focus group (Analytical Hierarchy Process) and endorsed by the results of in-depth surveys on serious accidents involving pedestrians. In 2009 the weighting process was refined by the ACI based on the feedbacks come from the 2008 test campaign.

Two checklists were developed for crossings at road intersections and for pedestrian crossings at road link. Using the checklist, the following four theme blocks were checked:

Crossing system - Weighting: 23%

- Crossing distance (from sidewalk to sidewalk)
- Pedestrian-vehicles conflict points
- Pedestrian refuge islands (crossing islands)
- Exclusive pedestrian signal phase
- Green phase and Transition phase (between green and red phase) efficiency
- Red phase duration
- Pedestrian countdown signal
- Road surface maintenance
- Crossing markings maintenance
- Crossing signs maintenance

Daylight visibility - Weighting: 26%

- Minimum approach sight distance (distance needed for a driver to recognize the presence of a pedestrian waiting to cross at the pedestrian crossing)
- Visibility of Pedestrian crossing signs (for drivers)

- Visibility of road markings (for drivers)
- Pedestrian crossing width
- Specific traffic direction markings (e.g. triangles/arrows or "Look left/Look right" road markings)

Night-time visibility - Weighting: 32%

- Lighting conditions
- Minimum approach sight distance in the night time (distance needed for a driver to recognize the presence of a pedestrian waiting to cross at the pedestrian crossing)
- Visibility of Pedestrian crossing signs at night time (for drivers)
- Visibility of road markings at night time (for drivers)

Accessibility - Weighting: 19%

- Presence of dropped or ground level kerbs
- Presence of tactile paving (for visually impaired people)
- Presence of acoustic devices (for blind or partially sighted pedestrians)
- Presence of obstacles (parked vehicles, utility poles, signs, holes, etc.) that could be a hazard for approaching pedestrians or pushing them to cross outside the crossings
- Sidewalk width.

The differences between crossings with and crossing without traffic lights were considered in the evaluation process (different evaluation degrees).

The crossings were rated on the basis of a points system with the following ratings: Very good, Good, Acceptable, Poor and Very poor.

After two years of tests focused on the central areas of the main European cities, in 2010 the ACI experts analysed three different areas, derived from a combination of the above mentioned guidelines:

- Central areas (commercial/tourist land-use, high public transport coverage)
- Semi-peripheral areas (high density of schools, average public transport coverage)
- Peripheral areas (residential land-use / low public transport coverage)

Within each area, a number of 15 crossings have been submitted to the inspections, trying to cover all possible kinds of crossings (signalised/not signalised, intersection/road link, one-way/two-way roads, one-lane/multi-lane per direction). The inspections were performed directly by the ACI technical experts (two teams of three units), who travelled to 18 European cities, walked for about 210 km along the 270 crossings tested between 9 June and 13 October 2010. Each crossing was tested both during daylight and at night time.

A methodology for the safety assessment of the pedestrian crossings has been developed based on the feedback received from the campaigns conducted in 2008 and 2009. A new assessment of accessibility was introduced, in order to take into account the specific requirements of three disabilities groups: wheelchair users, visually impaired and deaf people. Specific indicators were improved and fix taking into account specific needs for the different vulnerable users. Dedicated meetings took place with association in order to understand the technical solution which can

better fit wheelchair users, visually impaired and deaf people (sometimes they give solutions that do not accommodate all those groups).

7. Components of the initiative

The main component of the EuroTest - Pedestrian Crossings Assessment is assessing the safety levels of individual pedestrian crossings supported by an awareness campaign targeting pedestrians and drivers. Over the last three years (2008, 2009, 2010), 46 cities in 23 European countries were put to the test, by ACI inspectors together with the EuroTest consortium partner clubs. A total of 66 tests have been conducted as some cities were retested 2 or 3 times. About 800 pedestrian crossings were tested (from 10 to 15 per each city) and 660 km were covered.

8. Main deliverables

The initiative was composed from:

- Overall ranking of about 800 tested crossings
- Full report of each tested crossing with single assessments and supporting pictures
- Cities dossiers
- Awareness Campaign “Walk safe” – Leaflet
- Awareness Campaign “Walk safe” – Educational Video
- Recommendations for local, national and European Authorities
- <http://eurotestmobility.com/eurotest.php?itemno=389&lang=EN>
- Special report on traffic lights for pedestrians

Promotional videos are available on: www.youtube.it/AciRoadSafety

Main deliverables are available on: www.eurotestmobility.com



