International cooperation to improve the safety of European pedestrian crossings

Francesco Mazzone
Head of International Assessment Programmes
ACI – Automobile Club d’Italia

Polis Conference
Barcelona, 25 November 2008
Outline

EuroTest Initiatives
The Pedestrian Crossing Project
  - Test of pedestrian crossings
  - The awareness campaign
18 automobile FIA clubs in 17 countries put Europe to the test for the mobile consumers
A pan European independent testing programme
Independent Assessments (Safety inspections) of quality and safety of Europe’s mobility infrastructures and services
Regular and consistent benchmarking to foster a more market driven and consumer oriented mobility infrastructure
EuroTEST and Road Safety

Applying to road infrastructures the successful experience of EURONCAP

Testing
Informing
Improving

?
Why a project about pedestrian safety?

Every day, almost 22 pedestrians are killed on European roads (about 8,000 in EU-27)
Pedestrians account for 15% of all road fatalities
“Ordinary risk”: in 30% of accidents involving a pedestrian and a car travelling at 40 km/h, the pedestrian will be killed

Why a project about pedestrian crossings?

- One in four of pedestrian fatalities occur on or close to pedestrian crossings (estimate ACI)
- It’s a matter of behaviour, but safer crossings help better behaviours, and vice versa......
Some examples.....
Pedestrian Crossings Assessment Programme

A three-year Programme

- 2007:
  - statistical analysis
  - rules for pedestrians/drivers
  - pedestrian crossing design

- 2008:
  - Observatory on Pedestrian fatalities
  - Test of Pedestrian Crossings in 17 European cities
  - Survey on pedestrian traffic lights in Europe
  - Awareness Campaign “Walk safe”

- 2009:
  - Observatory on Pedestrian fatalities
  - Full-scale test of Pedestrian Crossings
  - Awareness Campaign “Walk safe”
Objectives

- To highlight the **potential risk** of using pedestrian crossings in the different countries.
- To make the users (drivers and pedestrian) aware of their **obligations**.
- To highlight, in each country, the **best and the worst pedestrian crossing design**.
- To draw the attention of European, national and regional authorities to the measures urgently required to **reduce fatalities** and accidents occurring on pedestrian crossings.
- The fatality rates are 4 times higher in Slovenia than in the Netherlands.
- Italy has the highest number of pedestrians killed on the roads (758 in 2006).
- Better ranked countries in the pedestrian fatalities analysis (Netherlands, Sweden, Norway) are also the best ones when the overall road fatalities are compared. This applies also to the worst situations...
Pedestrian fatality rates on pedestrian crossings

Year 2006

Average = 2.3
## Test of pedestrian crossings

### 17 cities

<table>
<thead>
<tr>
<th>City</th>
<th>Logo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsterdam</td>
<td><img src="logo" alt="Amsterdam" /></td>
</tr>
<tr>
<td>Barcelona</td>
<td><img src="logo" alt="Barcelona" /></td>
</tr>
<tr>
<td>Berlin</td>
<td><img src="logo" alt="Berlin" /></td>
</tr>
<tr>
<td>Bruxelles</td>
<td><img src="logo" alt="Bruxelles" /></td>
</tr>
<tr>
<td>Copenhagen</td>
<td><img src="logo" alt="Copenhagen" /></td>
</tr>
<tr>
<td>Helsinki</td>
<td><img src="logo" alt="Helsinki" /></td>
</tr>
<tr>
<td>Ljubljana</td>
<td><img src="logo" alt="Ljubljana" /></td>
</tr>
<tr>
<td>London</td>
<td><img src="logo" alt="London" /></td>
</tr>
<tr>
<td>Madrid</td>
<td><img src="logo" alt="Madrid" /></td>
</tr>
<tr>
<td>Munich</td>
<td><img src="logo" alt="Munich" /></td>
</tr>
<tr>
<td>Oslo</td>
<td><img src="logo" alt="Oslo" /></td>
</tr>
<tr>
<td>Paris</td>
<td><img src="logo" alt="Paris" /></td>
</tr>
<tr>
<td>Rome</td>
<td><img src="logo" alt="Rome" /></td>
</tr>
<tr>
<td>Stockholm</td>
<td><img src="logo" alt="Stockholm" /></td>
</tr>
<tr>
<td>Wien</td>
<td><img src="logo" alt="Wien" /></td>
</tr>
<tr>
<td>Zagreb</td>
<td><img src="logo" alt="Zagreb" /></td>
</tr>
<tr>
<td>Zurich</td>
<td><img src="logo" alt="Zurich" /></td>
</tr>
</tbody>
</table>

- 17 Cities, 215 crossings, 2 checklists (with/without traffic lights)
- Test Area defined on common criteria (tourism, traffic, dimensions, land-use)
- 12-15 crossings tested per each city, selected on the ground of traffic requirements
- 140 km walked by two teams of three ACI Inspectors
- Daily test and night test performed for each city
- Test stage: 2 July – 23 September 2008
The methodology

Developed in cooperation with University “La Sapienza” of Rome

- 22 Safety factors selected from a detailed literature review grouped into 4 Safety categories (Spatial and temporal design, daylight visibility, night-time visibility, Accessibility)
- Weighting process based on cross-comparison submitted to a qualified focus group (Analytical Hierarchy Process)
- Validation of the results with in-depth investigation data records
- 4 safety indicators (one for each safety category), one overall indicator
The evaluation process

Single crossings

* From the inspections to the single results
* Qualitative evaluation for each safety category (very good to very poor)
* Qualitative overall evaluation
* Pictures supporting the single evaluation

City results

* City ranking
* Best and worst crossings
* Main deficiencies detected
The test results

- 28 crossings out of 215 (one in 8) failed the test, achieving a “poor” rating.
- Just more than half crossings (118) were rated positively. Only two crossings earned a “very good” rating. 69 crossings were considered “Acceptable”.
- Worst crossing found in Brussels (the European Capital!), the best one in London. In Rome the “least accessible” crossings.

The diagram shows the number of crossings and rating classes:

- Overall rating
- Spatial and temporal design
- Visibility Daytime
- Visibility Night time
- Accessibility

The legend indicates the following ratings:
- ++
- +
- O
- -
- --
The city comparison

Number of crossings and rating groups

<table>
<thead>
<tr>
<th>City</th>
<th>n. crossings</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>++</td>
</tr>
<tr>
<td>Oslo</td>
<td>++</td>
</tr>
<tr>
<td>Copenhagen</td>
<td>-</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>-</td>
</tr>
<tr>
<td>Helsinki</td>
<td>++</td>
</tr>
<tr>
<td>Paris</td>
<td>++</td>
</tr>
<tr>
<td>Stockholm</td>
<td>++</td>
</tr>
<tr>
<td>Wien</td>
<td>++</td>
</tr>
<tr>
<td>Zagreb</td>
<td>++</td>
</tr>
<tr>
<td>Zurich</td>
<td>++</td>
</tr>
<tr>
<td>Barcelona</td>
<td>++</td>
</tr>
<tr>
<td>Ljubljana</td>
<td>+</td>
</tr>
<tr>
<td>Berlin</td>
<td>+</td>
</tr>
<tr>
<td>Madrid</td>
<td>+</td>
</tr>
<tr>
<td>Munich</td>
<td>+</td>
</tr>
<tr>
<td>Rome</td>
<td>+</td>
</tr>
<tr>
<td>Brussels</td>
<td>++</td>
</tr>
</tbody>
</table>
The comparison among different situations is aimed at fostering improvements.
A marked finding of this survey was the very wide degree of variation in the quality of the pedestrian crossings examined in each city, as reflected in the range of ratings given. This was mainly due to the presence of obstacles reducing the visibility even in the well designed layouts!
The main deficiencies

- Pedestrian phases at traffic lights, missing refuge islands (Spatial and Temporal Design)
- Parked vehicles behind crossings, reduced sight distance for the turning vehicles (Daylight Visibility and Night-time Visibility)
- Lighting conditions and road marking visibility at night (Night-time Visibility)
- Obstacles reducing accessibility to visually impaired and disabled users (Accessibility)
- Limited adoption of advanced technology (intelligent pedestrian traffic lights, countdown devices, smart lighting systems, etc.)
The pan-European crossings...

- In Germany zebra crossings are not adopted
- In some Spanish cities zebra crossing are being deleted at signalized pedcross
- In Switzerland yellow zebra markings are used
- Different solutions for pedestrian traffic lights (colours and more ...)
- Different Behavioural rules (eg: right of way on crossings)
- Different design standards (parking bans behind crossings)

Safety ?
Available deliverables

- Overall ranking (215 crossings)
- Ranking for each safety indicator
- City outline with strengths and weaknesses
- Complete city dossiers for each tested city (single crossing results and pictures)
- Recommendations for authorities on how to make safer crossings
- Report on pedestrian traffic lights (colours, exclusive phases, transition times, mandatory red, etc.).

www.eurotestmobility.com
The awareness campaign

“Walk safe”
The pedestrian safety leaflet

* Developed by the ACI with the cooperation of all the 18 EuroTEST partners
* On-going translation in 12 languages
* Behavioural tips beyond the single national rules
* Specific sections targeted to: pedestrians, pedestrians crossing the road, drivers
* Information section on very important figures (Did you know?)
* Key tips.
Some key tips

- Always be aware of what’s going on around you.
- Make yourself visible - don’t be hidden.
- Be aware that everyone makes mistakes.

WE ARE ALL PEDESTRIANS.

For further information:
www.eurowestmobility.com
Conclusions

- Excellent experience of international cooperation aimed at improving pedestrian safety
- Large room for improvement of pedestrian crossings (visibility and accessibility as key issues!): safer crossings save lives ...
- Behavioral aspects should be targeted with growing intensity (Walk Safe Campaign)
- Common behavioral rules to be adopted Europe wide
Thank you!

Francesco Mazzone
f.mazzone@aci.it

EuroTest links:
http://www.eurotestmobility.com
http://www.eurotestmobility.com/eurotests.php
http://www.eurotestmobility.com/newsletter.php