Japanese Proposal and Research Plan

JASIC / Japan
Background

☑ Though number of pole side impact accidents is small, the fatal and serious injury risk of pole side impact accidents are high. So we need to introduce pole side impact GTR to vehicle regulation in Japan.

☑ The curtain airbag and side airbag are necessary to satisfy pole side impact GTR. And they are also effective for other side impact.

Number of Side Impact Accident (2005-2007)
Japan vehicle categories

- In Japan, there are 3 categories for passenger vehicles. The smallest vehicle category is Light-motor-vehicle, commonly known as Kei cars in English. It refers to automobiles with a size of 3.4 m in length, 1.48 m in width, and 2 m in height or less, respectively, and a displacement of 0.66 liter or less.

Source: Japan Mini Vehicles Association web site
Situations of Kei cars in Japan

About 30% of passenger cars are Kei cars in Japan.

Some reasons why Kei cars are popular are as below:

1. Small width
   
   Japanese land area being so small, there are lots of small parking places and narrow roads (less than 4.0m road). Kei cars are easier to park in small parking and drive such narrow roads than larger cars.

2. Light weight (About 750 kg – 950 kg)
   
   Most Kei cars have better fuel consumption and made less using material than larger cars. So Kei cars are more ecological and economical.

Many people need Kei cars in Japan
Matter for Kei cars in Pole Side Impact

Comparison of the size of Kei cars and Standard-size cars

As for the distance of the door outer and the seat center, K-car is 87.5mm smaller than Standard-size car.

We think that it is difficult for Kei cars to have enough performance for pole side impact test, because of the small space between the door outer and passenger.
Japanese Proposal

Option 1. Vehicles which have width under [1500 mm] are exempted from the scope of this regulation.

Option 2. Pole test speed is between [26 km/h] to 32 km/h. And vehicles which width is less than [1500 mm] meet the requirement of a pole test at velocity [26km/h].

Reason)
As for the delta V of single vehicle side impact accident data in Japan, the difference of cover area of 26km/h and 32km/h is less than 10% and similar. And many of Kei cars are used around users’ house and not so many users drive in high speed.

So we think it appropriate to propose that the test speed of Kei cars are lower than that of standard-size cars.
Japanese Test Plan

We now plan test series shown below to confirm the performance of Kei cars for pole side impact tests.

Test vehicle: Kei car

Dummy: World SID AM50

Test 1: 32 km/h, 75°
Test 2: 26 km/h, 75°

We will test 2 different speeds and confirm the performance of Kei cars.
Is there any question?
APPENDIX
### Category of cars in Japan (for reference)

<table>
<thead>
<tr>
<th>Category</th>
<th>Overall length x Overall width x Overall height</th>
<th>Displacement/Carrying Capacity</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light automobiles</td>
<td>3.4 m x 1.48 m x 2 m or less</td>
<td>0.66 liter or less</td>
<td><img src="Image" alt="Light_car_1" />, <img src="Image" alt="Light_car_2" /></td>
</tr>
<tr>
<td>Light trucks</td>
<td>3.4 m x 1.48 m x 2 m or less</td>
<td>0.66 liter or less (For trucking purposes)</td>
<td><img src="Image" alt="Light_truck_1" />, <img src="Image" alt="Light_truck_2" /></td>
</tr>
<tr>
<td>Compact cars</td>
<td>4.7 m x 1.7 m x 2 m or less</td>
<td>2 liters or less (Excluding diesel types)</td>
<td><img src="Image" alt="Compact_car_1" />, <img src="Image" alt="Compact_car_2" /></td>
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</tr>
<tr>
<td>Standard-sized cars (Carrying 10 persons or less)</td>
<td>Cars any of which standard values exceeds those for compact automobiles</td>
<td><img src="Image" alt="Standard_car" /></td>
<td></td>
</tr>
</tbody>
</table>