

GRSP Inf. Group on on a Pole Side Impact GTR
PSI-4-XX

Japanese Proposal and Research Plan

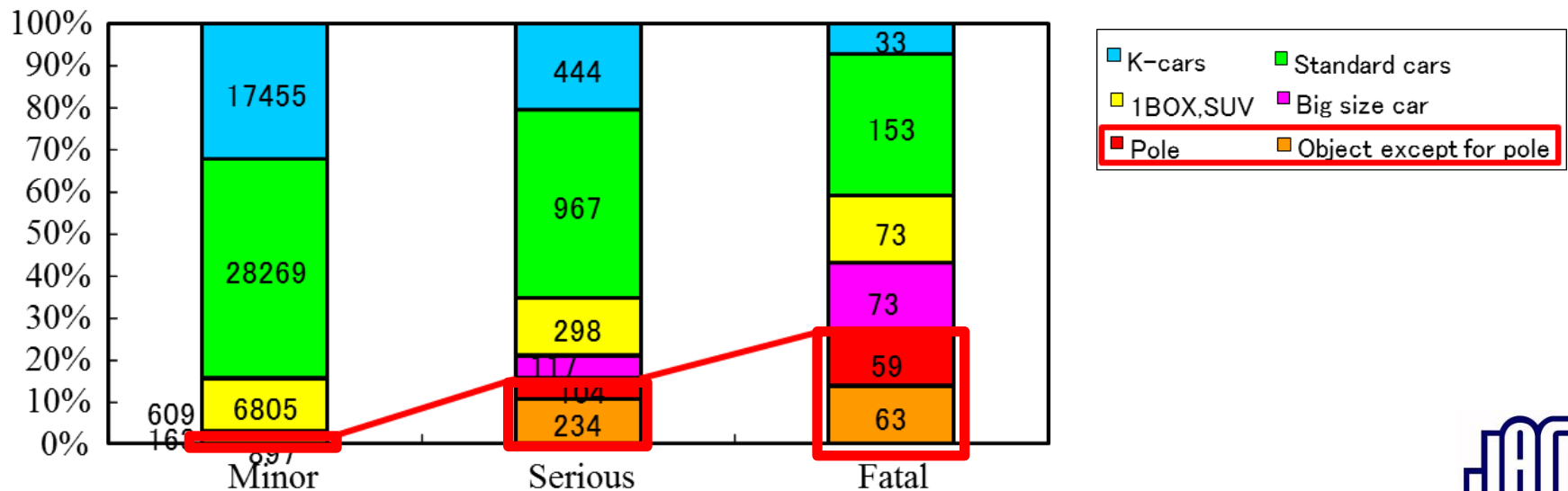
JASIC / Japan



Background

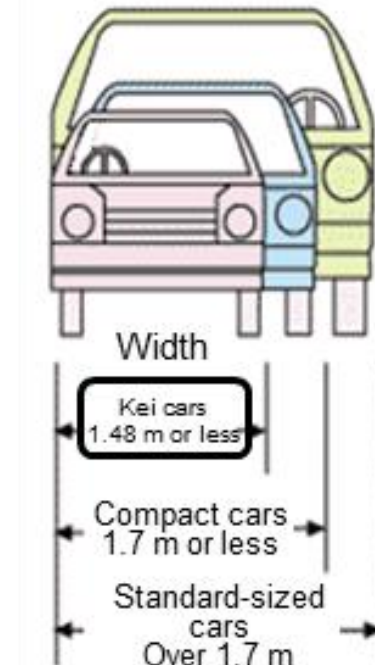
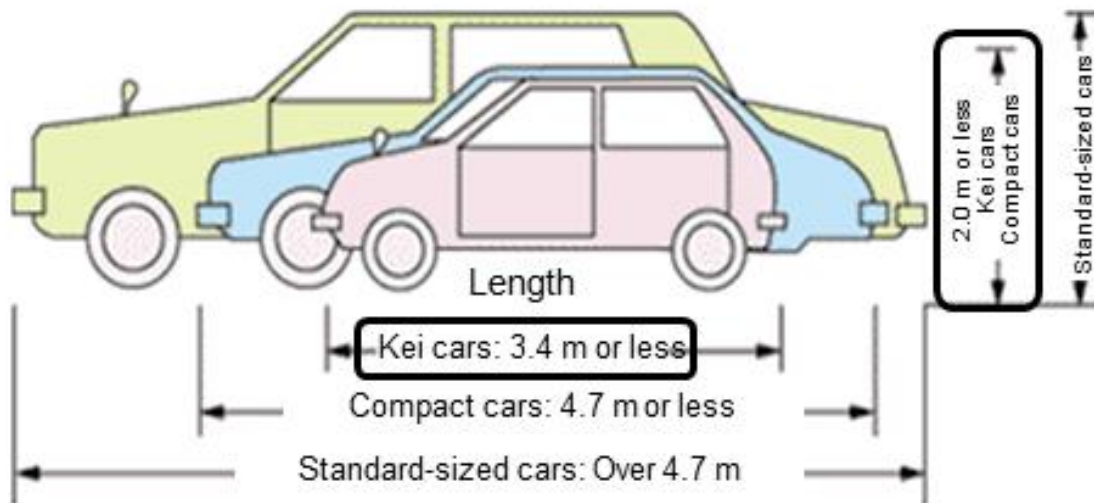
- ✓ Though number of pole side impact accidents is small, the fatal and serious injury risk of pole side impact accidents are high. So we need to introduce pole side impact GTR to vehicle regulation in Japan.
- ✓ The curtain airbag and side airbag are necessary to satisfy pole side impact GTR. And they 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.

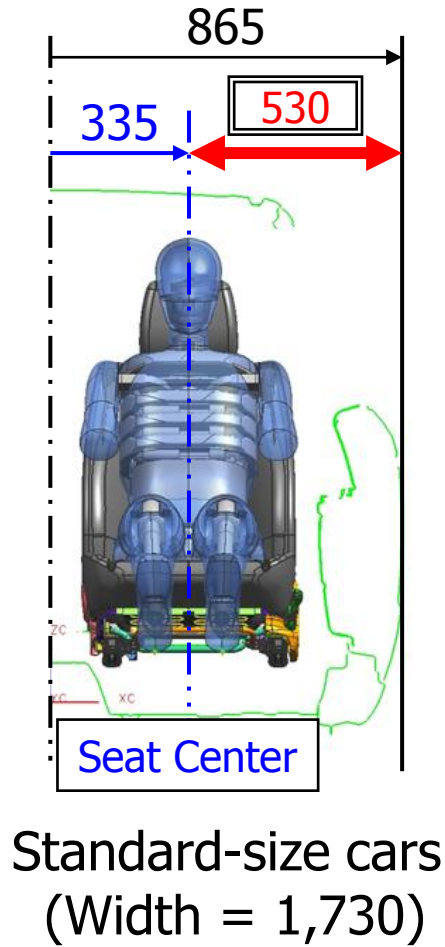
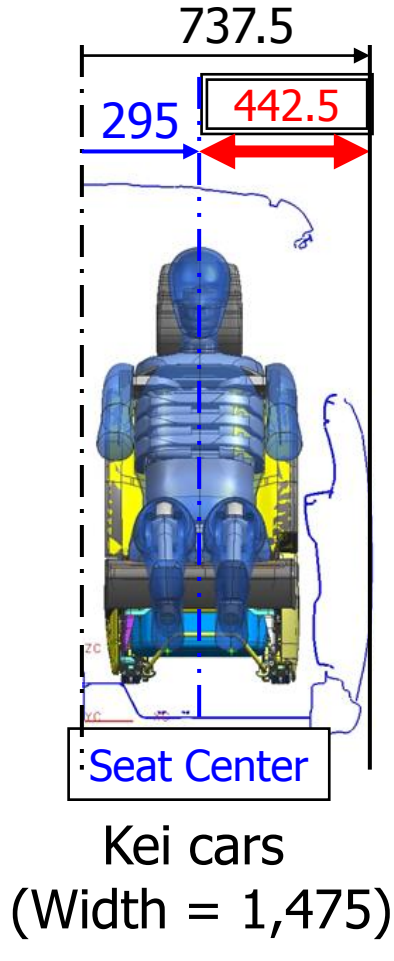
2. Light weight (About 750 kg – 950 kg)

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.



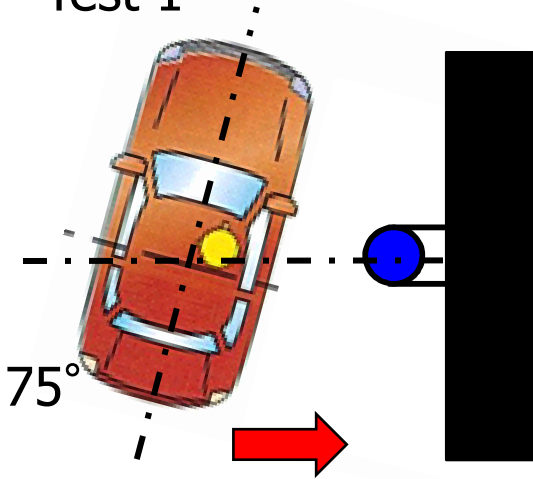
Japanese Test Plan

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

Test vehicle : Kei car

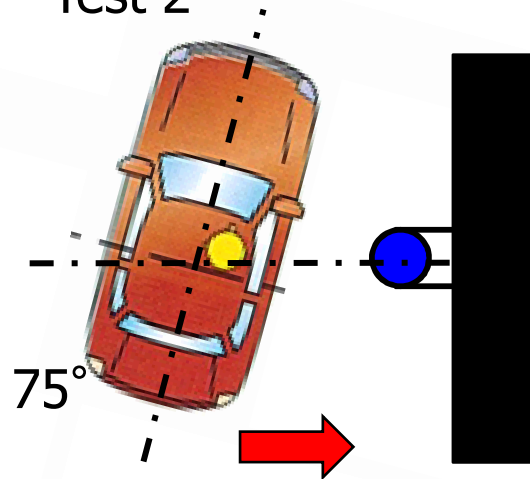
Dummy : World SID AM50

Test 1



32 km/h

Test 2



26 km/h

Test Vehicle













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)

Category		Overall length x Overall width x Overall height	Displacement/Carrying Capacity	Examples	
Light automobiles	Light cars	3.4 m x 1.48 m x 2 m or less	0.66 liter or less		
	Light trucks	3.4 m x 1.48 m x 2 m or less	0.66 liter or less (For trucking purposes)		
Compact automobiles	Compact cars	4.7 m x 1.7 m x 2 m or less	2 liters or less (Excluding diesel types)		
	Compact trucks	4.7 m x 1.7 m x 2 m or less	2 liters or less (Excluding diesel types/For trucking purposes)		
Standard-sized automobiles	Standard-sized cars (Carrying 10 persons or less)	Cars any of which standard values exceeds those for compact automobiles			

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