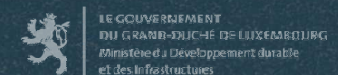
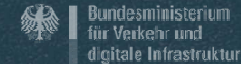


FOR SAFER CARS
EURO NCAP





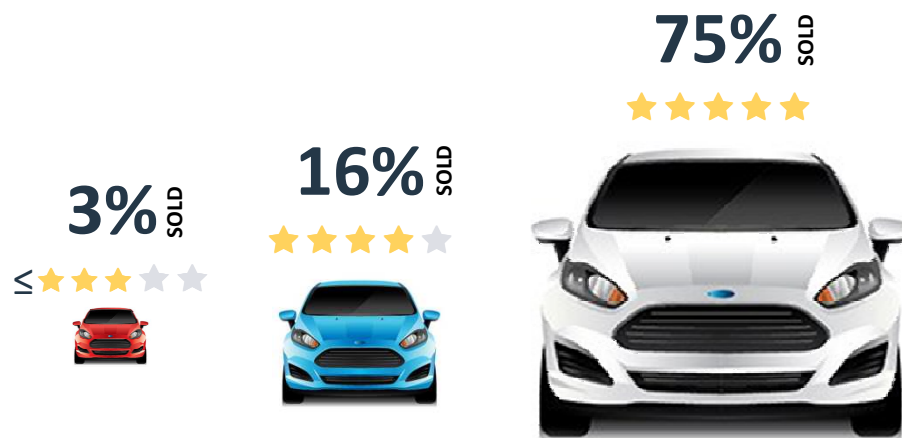
Quadricycle Safety

How do L7s fare in standard crash tests?

WP29 170th session • 15-18 November 2016 • Geneva

About Euro NCAP

- Providing impartial safety information to consumers since 1997.
- Safety ratings of over 650 car models sold in the EU are available – predominately of M1 category.
- Tests cover crashworthiness, crash avoidance & ADAS.

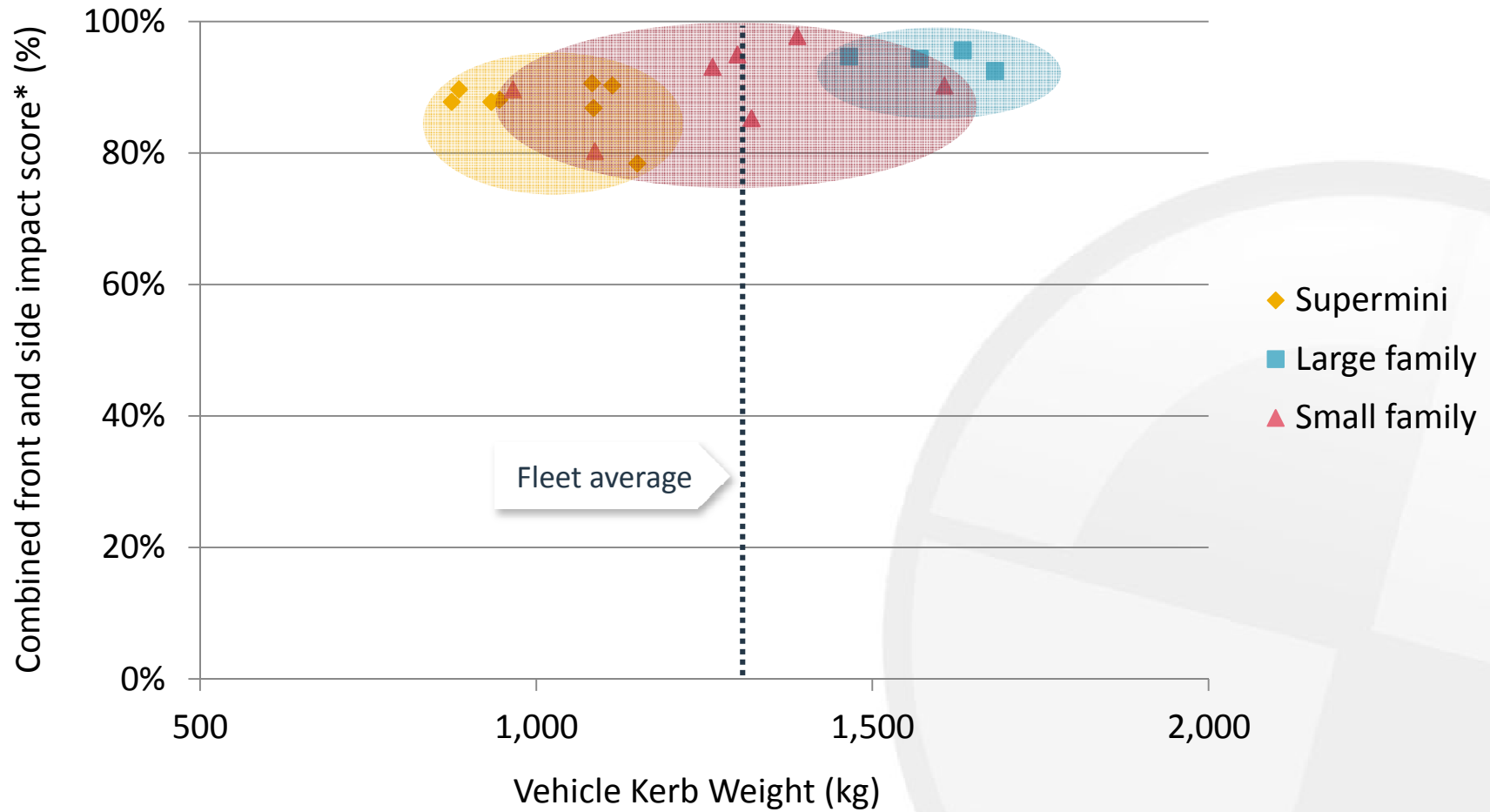


94%
of new cars sold* in
EU28 hold an
Euro NCAP safety
rating



*Passenger Car & SUV Sales , 2016 H1, 7.974.199 units

Crashworthiness vs. Weight



*Based on ODB, MDB and Pole test result. Euro NCAP, 2014.



Quadricycle Focus

- Category limited by mass and power.
 - ≤ 350 kg or ≤ 550 kg
 - Lower emissions & fuel consumption.
- Some capable of 100km/h.
 - No licence may be required if speed is limited to 45 km/h.
- New stricter emissions tests but no legislative crash test requirements.



Double Standard



2014 ★★★★★☆

Top Speed	98 km/h	150 km/h
Mass	440 kg	880 kg
Safety	Front seat belt reel assembly, reinforced doors, reinforced front and rear bumpers	High-strength cabin, front airbags, belt pretensioners, belt load limiters, driver knee airbag, side airbags, ISOFIX, SBR and ESC.
Fuel consumption*	6 L/100 km (petrol)	4.5 L/100 km (petrol)

*Source: <http://www.aixam.com/en/licence-free-car-crossover/gt-gtr>, <http://int.smart.com/en/en/index/smart-fortwo-453.html>





Testing Quadricycle Safety

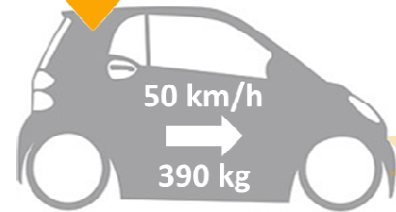
- Simplified crash tests – representing most frequent front and side accidents.
 - Front: moderate 50km/h, full width to deformable barrier.
 - Side: 50km/h, 950kg mobile trolley, no pole impact.
- Assessment
 - Driver injury risk as predicted by ATD.
 - Penalties for footwell intrusion, door opening, etc.
- Published protocol, internationally accepted criteria and limits and quadricycle-specific star rating.

Testing Quadricycle Safety

■ Simpl front

- Fro
- Sid

ΔV
60km/h



38 kJ



How realistic is a 50 km/h full-width deformable crash test?

ent

rrier.

■ Asses

- Dri
- Per

ΔV
60km/h



85 kJ



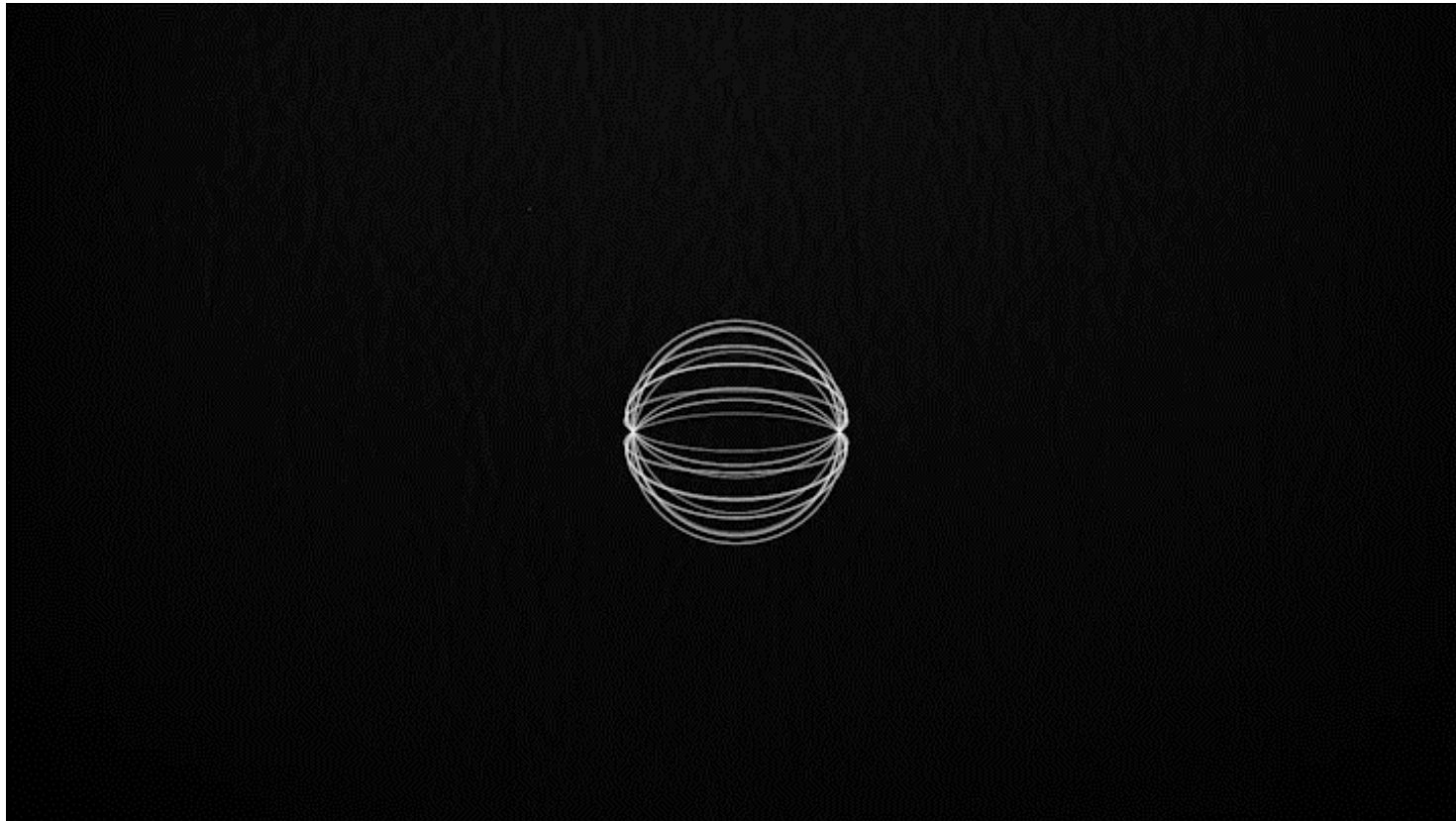
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Test Campaigns – Heavy Quadricycles

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">2014</p>	 <p>Renault Twizy 80 Top speed: 80 km/h Mass: 474 kg Production: France</p>	 <p>Ligier IXO JS LINE 4P Top speed: 70 km/h Mass: 465 kg Production: France</p>	 <p>Tazzari ZERO Top speed: 100 km/h Mass: 542 kg Production: Italy</p>	 <p>Club Car Villager 2+2 Top speed: 40 km/h Mass: 541 kg Production: USA</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">2016</p>	 <p>Microcar M.Go Family Top speed: 95 km/h Mass: 425 kg Production: France</p>	 <p>Aixam Crossover GTR Top speed: 98 km/h Mass: 440 kg Production: France</p>	 <p>Chatenet CH30 Top speed: 100 km/h Mass: 390 kg Production: France</p>	 <p>Bajaj Qute Top speed: 70 km/h Mass: 400 kg Production: India</p>

Results



Find detailed results: <http://www.euroncap.com/en/ratings-rewards/quadricycle-ratings/>



Main Findings

- All vehicles performed poorly – 0-2 on a 5 stars “quadricycle” rating.
- Tests revealed fundamental safety concerns.
 - Some showed poor structural integrity.
 - Dummy readings indicated a high risk of fatal or serious injuries.
- However addressing the most common shortcomings would not be impossible.



Conclusion

- Tests demonstrate that the crashworthiness of heavy quadricycles is sub-standard.
- Failing to roll out appropriate safety legislation for quadricycles is unnecessarily putting lives at risk.
- Quadricycle manufacturers are urged to invest more in safety and hold themselves accountable.
- Substituting vehicles of category M1 by lighter but fundamentally less safe L7s is not a productive strategy for Europe - nor anywhere else.

Global Perspective

“

QUADRICYCLES HAVE SIGNIFICANT POTENTIAL FOR SALES IN MARKETS ACROSS THE WORLD AND IT'S ESSENTIAL THAT MINIMUM SAFETY STANDARDS ARE PUT IN PLACE AND THAT CONSUMERS ARE MADE AWARE OF THEIR SAFETY SHORTCOMINGS, ESPECIALLY WHEN COMPARED WITH SIMILARLY SIZED PASSENGER CARS. WE WILL BE URGING ACTION ON QUADRICYCLE SAFETY THROUGH EFFECTIVE REGULATION IN THE UN WORLD FORUM.”

DAVID WARD
DIRECTOR GENERAL OF GLOBAL NCAP





Nový vůz je výhodnější než ojetý. Nemusím se starat o servis mám garance a na auto si vydělám sám.
Ondřej, Praha

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- Splátky od 2500 Kč měsíčně a akontací od 59 900 Kč
- Zajišťujeme zpětný výkup mopedaut
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