

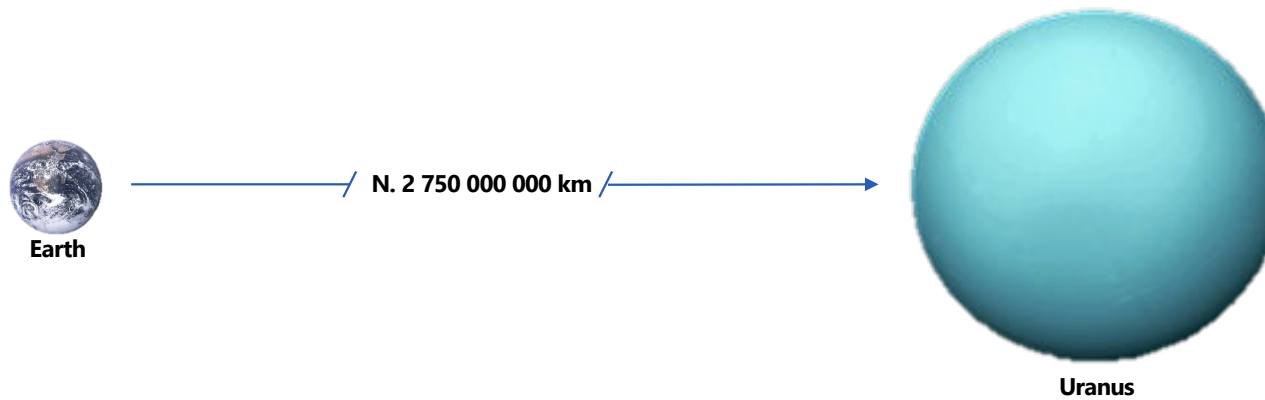
A blue-tinted, close-up photograph of a car's front end, focusing on the headlight and grille. The image has a strong blue color cast and is used as a background for the text.

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Safety Issues of Future Road Traffic

Digital Technologies for Road safety

Current passenger cars are safe*



One fatal crash per a trip to Uranus (illness attacks and suicides excluded)

* Koisaari, T., Utriainen, R., Kari, T., & Tervo, T. (2020). The most difficult at-fault fatal crashes to avoid with current active safety technology. *Accident Analysis & Prevention*, 135,105396

But they are not getting much safer

2009-2013
99 injury crashes /
billion kilometers*



ICE MY~2007

2017-2021
100 injury crashes /
billion kilometers**



ICE MY~2015

* Koisaari, T., Kari, T., Vahlberg, T., Sihvola, N., & Tervo, T. (2019). Crash risk of ESC-fitted passenger cars. *Traffic injury prevention*, 20(3), 325-331.

** Koisaari, T., Kari, T., Vahlberg, T. (2023). Crash risk of battery and hybrid electric passenger cars. *In progress*.

Not all new vehicles are safer...

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Picture: www.Telia.fi

...and not all safe vehicles are new

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Picture: Anthony D'Amato

People are not too keen on safety...

(and vehicle manufacturers know that)

Seat belt was invented 170 years ago*, it was introduced to cars some 100 years later*, and, still, one can drive without using it.

...and they do not act as planned

Autopilot*

Limitations


Many factors can impact the performance of Autopilot components, causing them to be unable to function as intended. These include (but are not limited to):

- Poor visibility (due to heavy rain, snow, fog, etc.).
- Bright light (due to oncoming headlights, direct sunlight, etc.).
- Damage or obstructions caused by mud, ice, snow, etc.
- Interference or obstruction by object(s) mounted onto the vehicle (such as a bike rack).
- Obstruction caused by applying excessive paint or adhesive products (such as wraps, stickers, rubber coating, etc.) onto the vehicle.
- Traffic signs that do not conform to standard recognizable formats, such as digital or temporary speed signs.
- Narrow or winding roads.
- A damaged or misaligned body panel.
- Use of gray or aftermarket glass.
- Interference from other equipment that generates ultrasonic waves.
- Extremely hot or cold temperatures.

Warning

The list above does not represent an exhaustive list of situations that may interfere with proper operation of Autopilot components. Never depend on these components to keep you safe. It is the driver's responsibility to stay alert, drive safely, and be in control of the vehicle at all times.

* Tesla Model S owner's manual



The screenshot shows a YouTube video player interface. At the top, there is a search bar with the text "tesla backseat". The video player itself shows a first-person view from the back seat of a Tesla, looking forward at the driver's seat and the road ahead. The driver is sitting in the back seat, which is a clear violation of traffic laws. The video player includes standard controls like play/pause, volume, and a progress bar showing 0:11 / 1:50. Below the video, the title "Tesla Driver Pulled Over for Sitting in the Back Seat" is visible, along with the channel name "Inside Edition" and a "Tilaa" button. There are also icons for likes (29 t), comments, and shares (Jaa).

Youtube / Inside Edition / Original footage: Param Sharma

X-factor

Covid-19, war in Ukraine, ...

Future traffic will be automated, connected and electric, but what will it look like if cyber threats materialize?

Traffic safety is getting better, but what is
the rate of progress?

Thanks!



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