

Press Release

Findings from the DEKRA Road Safety Report 2024

Road design is and remains crucial for safety

- ▶ Rural roads continue to record the most accident victims
- ▶ Two-lane expansion as well as bushes in the verge have proven their worth
- ▶ Specially developed tool shows safety standard of roads in 84 countries

The design of roads and their verges remains one of the decisive factors in the occurrence of accidents. “Careful planning and appropriate implementation can help to prevent accidents altogether or at least minimize the resulting risks and optimize traffic performance”, says DEKRA accident researcher Markus Egelhaaf, referring to the DEKRA Road Safety Report 2024 entitled “Traffic Environments for People”. One of the challenges: Key stimuli that can lead to incorrect assessments of the route must be avoided. The goal, according to the DEKRA expert, is the self-explanatory road with forgiving traffic and side space design.

From a global perspective, rural roads have been the roads with the most fatalities almost everywhere for years. This is shown, among other things, by data collected by the International Traffic Safety Data and Analysis Group (IRTAD) of the International Transport Forum (ITF). According to the data, more than half of all road deaths in 2022 were caused by accidents on rural roads in 17 out of 25 selected countries – in Finland, Ireland, and New Zealand, the figure was as high as two thirds. In Germany, the proportion was 57% in 2022; the figure has been more or less the same for years. Only in South Korea, the Netherlands, Japan and Portugal were inner-city roads the most accident-prone. “In addition to traffic regulation measures such as speed limits or overtaking bans, improvements to the road infrastructure are often essential to counteract this on rural roads”, emphasizes the DEKRA accident researcher.

The DEKRA Road Safety Report 2024 presents the Bruce Highway in Australia as an example of a successful redesign. Large sections of the more than 1,000-miles stretch on the country's east coast have been optimized in terms of road safety in recent years. The measures of the 15-year infrastructure program, which will run until 2028, include wide median lines, intersection improvements, safety barriers and the partial freeway-like expansion with up to four lanes in both directions. The results are impressive: The number of traffic fatalities has fallen considerably on the 38-miles

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stretch between the towns of Cooroy and Curra alone. According to the Royal Automobile Club of Queensland, 22 people were killed in road accidents there between 2005 and 2009, compared to just three between 2018 and 2022. That is a reduction of 86 percent.

Good experience with 2+1 roads

There is no question that a consistent two-lane expansion with structural separation of the directional lanes can make a lasting contribution to preventing oncoming traffic accidents – especially on busy routes with a high proportion of HGVs. However, even where a complete two-lane expansion is not necessary or not possible, safe overtaking opportunities can be created. The principle of so-called 2+1 roads, developed in Sweden in the early 1990s, has proved particularly effective in this respect.

With this type of expansion, a two-lane section and then a single-lane section are provided alternately for the opposing directions of travel. The conventional 1+1 alignment in the sections in between varies in length and extends up to several miles with an overtaking ban before two lanes are available again in one of the two directions.

The experience on the stretches of road upgraded in this way has been positive: the number of accidents has fallen, as has the severity of the accidents; the overtaking bans have been met with a high level of acceptance. In Sweden, upgrading two-lane roads to a 2+1 configuration has reduced the number of accidents with fatalities or serious injuries on these stretches by 50 to 80 percent.

Targeted use of bushes and shrubs

Each road class has specific risks in terms of the occurrence and consequences of accidents. On rural roads in particular, leaving the carriageway and hitting an object on the side of the road is a critical and frequent scenario. Even though the number of fatalities in accidents involving trees and poles has decreased over the years, the percentage of tree accidents in the total number of accidents has hardly changed despite many efforts. For example, the proportion of fatalities in tree accidents across all road classes in Germany was 20 percent in 2010 and 17 percent in 2021. On non-urban roads without freeways, i.e. rural roads, the proportion was 24 percent. By comparison, in France, according to the ONISR's annual accident report, 1,733 people lost their lives on rural roads in 2021 – 37 percent of them in a tree accident. "The figures make it clear that the safe design of roadsides is of paramount importance.

Measures to minimize the consequences of accidents are particularly urgent in non-urban traffic – especially with regard to the risk of collisions next to the road.”

DEKRA has been pointing out this problem for years and calling for trees and masts in the immediate vicinity of the road to be secured by effective protective devices or for obstacles to be removed as far as possible. Where neither is possible, the permitted speed should be reduced. However, protective devices only provide optimum protection if they are positioned at a sufficient distance from the obstacle. When planting new trees next to the roadway, it is also important to ensure sufficient distance. The targeted use of bushes and shrubs could be a safety-relevant alternative for road design, especially in rural areas. In the past, DEKRA crash tests have shown that the impact on vehicle occupants in the event of a collision with bushes is around eight times lower than in the event of a collision with a tree.

Star rating for roads

In November 2017, the United Nations agreed on twelve voluntary performance targets to prevent accidents across all locations as far as possible and to halve the number of road deaths between 2021 and 2030. According to target 3, all new roads should meet technical standards that take road safety into account for all road users or achieve a three-star rating or better by 2030. And according to target 4, by 2030 more than 75 percent of journeys should be made on existing roads that meet technical standards for all road users and take road safety into account.

“There is still a lot of catching up to do in this respect”, the DEKRA accident researcher points out. This is shown, for example, by the iRAP Safety Insights Explorer, developed by the International Road Assessment Programme (iRAP), a non-profit organization with consultative status at the United Nations Economic and Social Council. The assessments in this tool cover around 370,000 miles of roads in 84 countries.

As far as the road ratings are concerned, the differences between the countries listed are sometimes immense. In the USA, for example, 30 percent of the road miles rated for the vehicle occupant category have a 3-star rating, 33 percent have a 4-star rating and 17 percent have a 5-star rating. Around 20 percent are roads with a 2-star or 1-star rating. In Kenya, only around 25 percent have a 3-star rating or better. 48 percent have a 1-star rating (details online at www.irap.org/safety-insights-explorer).

Further background information on the topics mentioned here, as well as on many other aspects relating to "Traffic spaces for people", can be found in the DEKRA Road Safety Report 2024 at www.dekra-roadsafety.com.

Caption

Especially on rural roads, leaving the carriageway and hitting a tree in the verge is a frequent and particularly critical accident scenario. The DEKRA experts call for such obstacles to be secured by effective protective devices where they cannot be removed.

About DEKRA

DEKRA was originally founded in 1925 to ensure road safety through vehicle inspection. With a much wider scope today, DEKRA is the world's largest independent non-listed expert organization in the testing, inspection, and certification sector. As a global provider of comprehensive services and solutions, we help our customers improve their safety, security, and sustainability outcomes. In 2023, DEKRA generated revenue of EUR 4.1 billion. The company currently employs around 49,000 people who offer qualified and independent expert services in approximately 60 countries on five continents. With a platinum rating from EcoVadis, DEKRA is now in the top one percent of sustainable businesses ranked.