

Across the globe, countries are working to make their roads safer. Here, **Arthur M. Dinitz** sheds light on the technological innovations contributing to making the roads safer in the USA and elsewhere

Reconsidering safety

Countries throughout the world are seeking ways to increase safety and compliance with traffic laws on roads and highways, reducing the number of fatal or serious injury crashes into road side signs and streetlights, improving traffic flow and pedestrian safety with traffic calming methods and clearly defined preferential lanes and areas that have proved to increase visibility and reduce unauthorised use, which, in turn, boosts safety especially in cities with high traffic flow.

Breakaways

The history of 'breakaway' posts for signs and streetlighting goes back 50 years in the United States. In the 1960s, roadside hazards were identified as a major cause of fatalities and serious injuries. It became evident that if the obstacle could not be removed it should be made breakaway – or if it could not be made breakaway, it should be protected.

Sign supports are often located immediately adjacent to roadways and are subject to impact by errant vehicles and must yield or breakaway if struck. Since the 1970s in the United States, omni-directional breakaway couplings as the post support has become the standard for many states, and thousands of lives have been saved.

Global interest in breakaways is increasing. In Israel, highway safety support structures have been used for over 20 years. Dozens if not hundreds of accidents have been witnessed with no fatalities or serious bodily harm injuries reported on light poles using omni-directional breakaways. New Zealand, Australia and Canada have begun to use omni-directional breakaways and there is increasing global interest in this technology.

Up until now, in Europe, the use of energy absorbing posts has been the only form of yield supports used. However, as seen in many of the crash tests in the US, these energy absorbing posts, at high speeds, can entrap the vehicle and cause 'yaw', causing overturns and serious bodily harm.

Saving lives

Research suggests 70% of one vehicle fatalities involve cars leaving the roadway and either overturning or colliding with fixed objects. Breakaways for ground mounted signs and luminaries can significantly decrease the severity of these accidents and resulting fatalities.

One of the key issues to ensuring greater safety in transport is to identify and treat hazardous locations and objects. By using omni-directional breakaway supports that are designed to break away quickly and cleanly upon impact, with consistent, predictable behaviour, regardless of the vehicle's angle of impact, reduced property damage and saving lives will result.



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Since then it has become apparent that other safety devices and systems for transportation infrastructure was needed including ones to protect pedestrians as well as vehicular traffic.

Cycle lanes and bus lanes

As part of a world-wide effort to reduce greenhouse gases, more and more people are using bicycles as a means to travel around urban areas. Along with this increase in bicycle use the close proximity of bicycles and vehicles has caused engineers and planners to reconsider the safety of both types of users.

Coloured pavements can also inform riders of bus route locations while alerting motor vehicle operators of the special use lane and prohibiting stopping or parking in the those lanes. In cities around the world bus lane violations are being reduced with colour pavement overlays.

Crossings

In the USA over 4,000 people are struck by motor vehicles each year and many cities have been dedicating their resources to reducing this figure. Choosing the proper material will result in durable, cost-effective solutions.

Known for their high durability, increased wet-night visibility, skid resistance and optimal colour stability, contrast area markings based on cold plastic (MMA, methacrylate resin) are increasingly being used to apply bright crosswalks to high traffic areas. The contrasting colours of these crosswalks alert drivers and have been proven to significantly reduce the number of pedestrians hit while crossing through traffic each year.

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