



VISION ZERO CANNOT END AT THE CURB

How to Fix Our Massive Mobile Manslaughter Machines



Twenty-two-year-old Portland, OR, resident Danielle Sale raised money for the homeless as a young child, participated in annual multiple sclerosis fundraiser walks, but never got a chance to launch her promising medical career.

Emily Dunn, a 23-year-old San Francisco woman who had just moved to Atlanta, was passionate about the entertainment industry and had founded an artist relations and hospitality company. An avid traveler, she visited 35 countries, but won't make it to the 36th.

And then there's 89-year-old Margaret McCluskey of Vancouver, WA, a retired journalist and Peace Corps volunteer who had just written a letter to the local newspaper praising her city transit system. She will never see her 90th birthday.

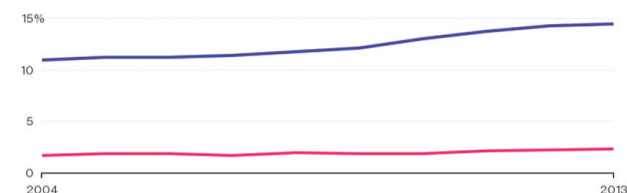
All of the people above were tragically struck and killed by buses in crosswalks.

More Americans are walking and bicycling to work, but more pedestrians and cyclists are now involved in traffic accidents. According to a Government Accountability Office report pedestrians accounted for 14 percent of traffic deaths in 2013, up from 11 percent in 2004. One pedestrian is struck and killed by a bus almost every week in America.

Growing Danger

Pedestrian and cyclist deaths make up an increasing share of total U.S. traffic fatalities

■ Pedestrians ■ Cyclists



Source: GAO

Bloomberg

Blind spots

The subsequent investigations of the tragic deaths above proved that each of these victims died needlessly because the buses that hit them had blind spots so large that the drivers didn't see them.

While transit is still a very safe mode of travel for those on board a bus, crosswalks have become mine fields for transit buses – and blind spots are the reason why. While Vision Zero initiatives like safer speed limits, protected bicycle lanes, pedestrian plazas, and intersection redesigns

will go a long way to preventing some collisions, cities will never reach their goal of achieving zero traffic fatalities and injuries unless we expand and apply the engineering principles of these initiatives to the vehicles that use our roadways, especially buses.

The transit industry today is in the same position the airline industry was in years ago when it began to implement a spectrum of safety innovations that revolutionized air travel. Global analysis of the risk of flying six miles above the ground at 600 miles per hour made air travel safer than sitting at home in your favorite chair.

Risk Reduction

Risk reduction is about culture and engineering. It's about the determination to follow bad outcomes back to their root causes – the cultural and engineering failures that produce dangerous collisions.



The industry has acknowledged that bus blind spots and pedestrian deaths is a nationwide problem.

In 2008, the Transit Cooperative Research Program (TCRP) released a groundbreaking report, warning U.S. transit systems about blind spots, noting that bus components, including side mirrors and the massive pillar on the left side of the windshield, obstruct the driver's view.

'Came out of nowhere'

According to the report, often when asked what happened following a bus-and-pedestrian collision, operators report that they "just did not see the pedestrian," or that the pedestrians seem to have come from "out of nowhere."

All North American transit buses in service today have several enormous and unnecessary blind spots created by pillars, bad placement of mirrors and other design defects.

The photo (page 2) from the driver's seat of a bus common to transit systems across the U.S. A pedestrian standing to the left of the mirror is copied 19 times across the blind spot. This is the path in a left turn. The graphic demonstrates how much of the driver's view is blocked by the pillar and the mirror.

The structural engineer who designed this bus, having seen the problem, estimated that making the obstruction narrower than the spacing of the eyes, the point at which one eye or the other sees all angles, would cost less than \$300 per bus at the time of manufacture.

Unfortunately, despite knowing the risks, transit systems from coast to coast continue to order buses with these lethal hazards.

Instead of eliminating the problem, as has been done in Europe, North American transit agencies attempt to solve the problem by training operators to bob and weave in their seat – the so-called “rock and roll” method – to attempt to see around the pillars and mirrors, which does nothing to solve the problem.

‘Moving blind spots’

Due to the huge steering wheel, many operators simply cannot lean far enough in the seat to see past the roughly foot-wide blind spot.

More importantly, leaning does not eliminate the huge blind spot. As the driver “bobs and weaves” and the bus goes around the turn, pedestrians too often move with the blind area, remaining unseen until it is too late.

As a person walks off the curb and moves forward, he or she stays in the blind spot. The bus moves with the pedestrian so the driver never sees them coming.

Imagine if a defect was found in bus engines causing engines to catch on fire. You can bet your life savings that transit agencies and the federal government would be up in arms, holding congressional hearings and calling for recalls to fix the defect no matter what cost.

While none of us would buy a car with so stark a hazard, the response of transit systems is to say the vehicles currently

meet federal standards. Astoundingly, those standards do not require being able to see out the windshield. The Federal Transit Administration has the authority to issue regulations in the area of safety, and the agency must initiate a federal rulemaking to address these issues as soon as possible. However, the slow moving federal bureaucracy cannot continue to put off acting when lives are lost on a weekly basis.

Engineering solutions are available

The good news is that the engineering solutions are available today, and transit agencies and bus manufacturers could address these problems immediately.



European designs have simply eliminated the problem. Their pillars are narrower than the space between the eyes. The bonded windshield has no seals blocking the view, and the mirror presents no hazard. Root cause analysis has recognized the obvious need for unobstructed vision, and engineering – the most basic element in the process of creating safe bus designs – has eliminated the problem.

Our obligations to safety culture, and global analysis of risk, do not stop at the pillar and fatalities outside the bus. Better controls and far more secure cabins for the drivers result in far fewer victims in and out of the driver's seat, as well as lower costs for agencies.

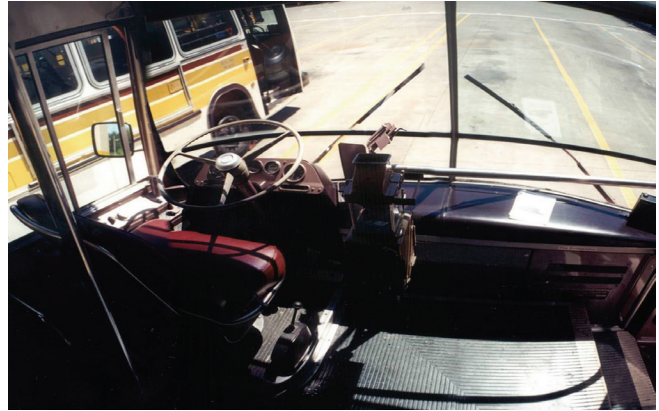
For example, European driver security barriers, or shields, which are positioned outside sight lines to the windshield and right mirror, are made of tempered glass that can be opened or closed at the touch of a button. These are left open most of the time, but can be rapidly closed to block assaults of drivers by passengers. The result is a safe driver area with clear vision, fewer unnecessary fatalities, and fewer industrial injuries.

To prevent needless imminent tragedies, any new U.S. vehicles should have low-mounted, reasonably-sized left side mirrors and “A” pillars which allow operators, regardless of size, to adequately view pedestrians crossing in front of the bus and an overall drivers’ area which eliminates blind spots to the greatest extent possible.

Changes are not hard

These changes are not hard; the engineering is trivial. Weigh our obligations to make these changes to save lives, and they are priceless. As the photos demonstrate, the answers are available today. Look and ask: how hard is it for the greatest nation on earth to do what many European cities do today or what we did here half a century ago?

Each one of these senseless deaths has multiple victims: the person struck by the bus, their traumatized family and friends, and the bus operator whose life will never be the same. It’s time to take the blindfolds off of bus drivers so they can fulfill their mission to move America safely!



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