NM Transportation Infrastructure Revenue Subcommittee
"Public Safety for Driverless Vehicles – The Impacts of Semi-Truck Collisions"

Presentation by Andy Young



About the Presenter
Andrew R. Young, The Law Firm for Truck Safety

Andy Young is a Managing Partner of The Law Firm for Truck Safety. He was appointed by the United States Secretary of Transportation to serve on the Federal Motor Carrier Safety Administration's (FMCSA's) Motor Carrier Safety Advisory Committee (MCSAC). He has testified before committees in the U.S. Congress, the Ohio Senate, and the Ohio House of Representatives on trucking safety issues. He was invited by the Insurance Institute for Highway Safety (IIHS) and safety advocacy groups to help organize and act as a moderator for two industry-related Truck Underride Roundtables. Andy has also served on the Vision Zero Taskforce for the City of Cleveland, Ohio. He holds an active Class A Commercial Driver's License (CDL) and owned and drove his own Peterbilt semi-tractor and 45-foot car-hauler trailer. He continues to serve as a guest faculty member teaching CDL candidates at the Great Lakes Truck Driving School. He has taught over 900 CDL students as of today's date. He is an elected officer of both the American Association for Justice's Trucking Litigation Group, serving as the 2023-2024 Chair, and the Academy of Truck Accident Attorneys, serving as the 2024-2025 Chair. These groups represent more than 1,500 attorneys who engage in litigation to advance, protect, and represent the interests of the motoring public, including truck drivers. Andy holds a national board certification in truck accident law. He is AV rated by Martindale-Hubbell and is a member of the American Board of Trial Advocates (ABOTA). He has represented truck drivers and ordinary road users in litigated matters involving more than 150 motor carriers. He has deposed countless truck drivers, safety directors, safety trainers, truck company executives, first responders, and others in search of solutions to preventable truck crashes. Mr. Young earned a BA in History from Ohio Wesleyan University and a JD from the Case Western Reserve University School of Law.


Peterbilt
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NOT FOR HIRE
NOT FOR HIRE


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RACECARS
HMS INDUSTRIES
TRUCKING
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target zero NM

ROAD TO ZERO

VISION ZERO NETWORK

Vision Zero = No Margin of Error

Torc Tests Unmanned Trucks At Highway Speeds in Texas

By Seth Clevenger
Managing Editor, Features and Multimedia

Self-driving truck developer Torc Robotics announced that it has begun validating its autonomous driving technology at speeds up to 65 mph with no one on board the vehicle in a closed-course environment.

Since May, the independent subsidiary of Daimler Truck has been conducting fully driverless truck tests on a multi-lane test track in Texas, the company revealed Oct. 29.



Torc Robotics

Schmidt

Torc said its ongoing closed-course testing of its fully autonomous truck technology is not merely a demonstration but ongoing validation of the company's artificial intelligence, system architecture, production-intent hardware and safety engineering focused on achieving a scalable commercial rollout.



test runs while sharing the track with human-driven lead and chase vehicles, he said.

Much like several other autonomous truck developers, Torc also has been using its self-driving trucks to haul freight on public highways but with a safety driver still behind the wheel as a backup.

Moving forward, Torc intends to continue validating its technology, expanding its capabilities and addressing "edge cases" — very rare scenarios the truck might encounter on the road — with the goal of finalizing a "feature complete" self-driving product by the end of 2025, King said.

From there, the company plans to begin operating with no driver aboard on public highways in Texas starting in 2026 to pave the way for a commercial launch in 2027.

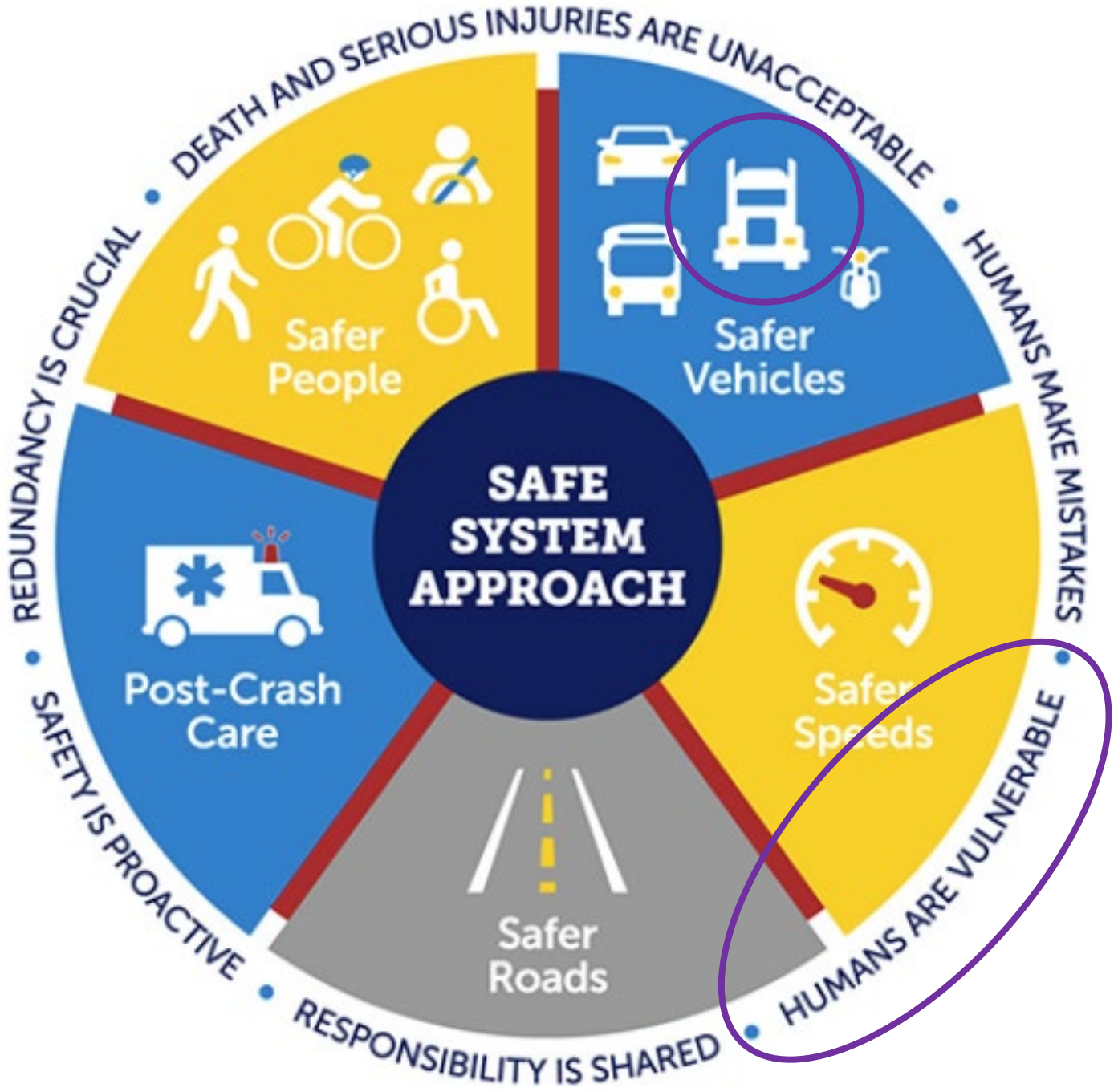
"In 2026, you'll see the Torc virtual driver running without a human in the truck, interacting with the pub-

Source: American Trucking Associations, Transport Topics – Date: 11/11/2024

Article Author: Seth Clevenger, *Managing Editor; Features and Multimedia*



“Edge Cases” = Margin of Error


DEATH AND SERIOUS INJURIES ARE UNACCEPTABLE
HUMANS MAKE MISTAKES
HUMANS ARE VULNERABLE
RESPONSIBILITY IS SHARED
SAFETY IS PROACTIVE
REDUNDANCY IS CRUCIAL
SAFE SYSTEM APPROACH
Safer People
Safer Vehicles
Safer Speeds
Safer Roads
Post-Crash Care



01 Live Dash Cam Video and Audio Played "There is nothing, I mean what can stand up to a semi besides another semi or a fricking train, there is not much. It looks like the family did all they could. They had all of their kids in proper car seats, and they were belted. The boy in the back was on the opposite side of the impact. That is just how severe some of these impacts are and there is nothing we can do."







Q: So, when you have a – a semi-truck versus car, what are – why is there a different dynamic in there?

A: Commercial motor vehicles, they're higher-profile vehicles, they don't necessarily match up to the bumpers or the main frames of passenger cars or SUVs, so if – if they get hit, they don't hit those main structures that are meant to take an impact. They go more into the soft body of the vehicle.





Vehicle to Vehicle Crash **Incompatibility** aka the **Bumpers Do Not Match Up**




FIRE



Example: Vehicle to Vehicle Crash **Compatibility** aka the **Bumpers Match Up**



Example: Vehicle to Vehicle Crash **Incompatibility** aka the **Bumpers Do Not Match Up**

2013 TOP SAFETY PICK

2014 Jeep Grand Cherokee

MIDSIZE SUV / 4-DOOR SUV






Jeep


Jeep








WEST
GRAND CHEROKEE




Jeep

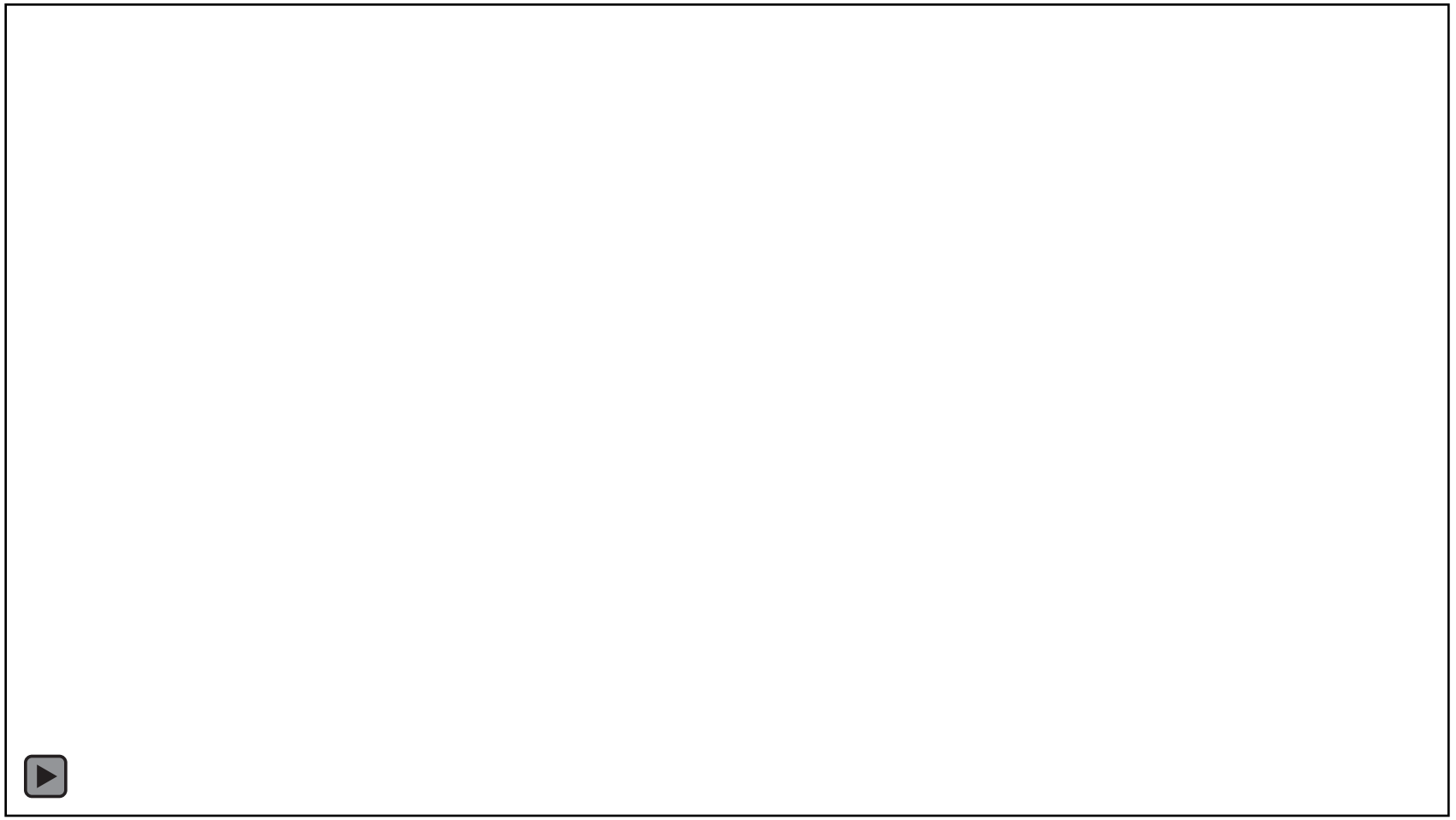



UTILITY
DOT-C2


PLEASE
DO NOT TOUCH
VEHICLE!


2009 CHEVROLET
MALIBU


PLEASE
DO NOT TOUCH
VEHICLE
CHEVROLET
MALIBU
INSURANCE INSTITUTE
FOR HIGHWAY SAFETY
CF517003

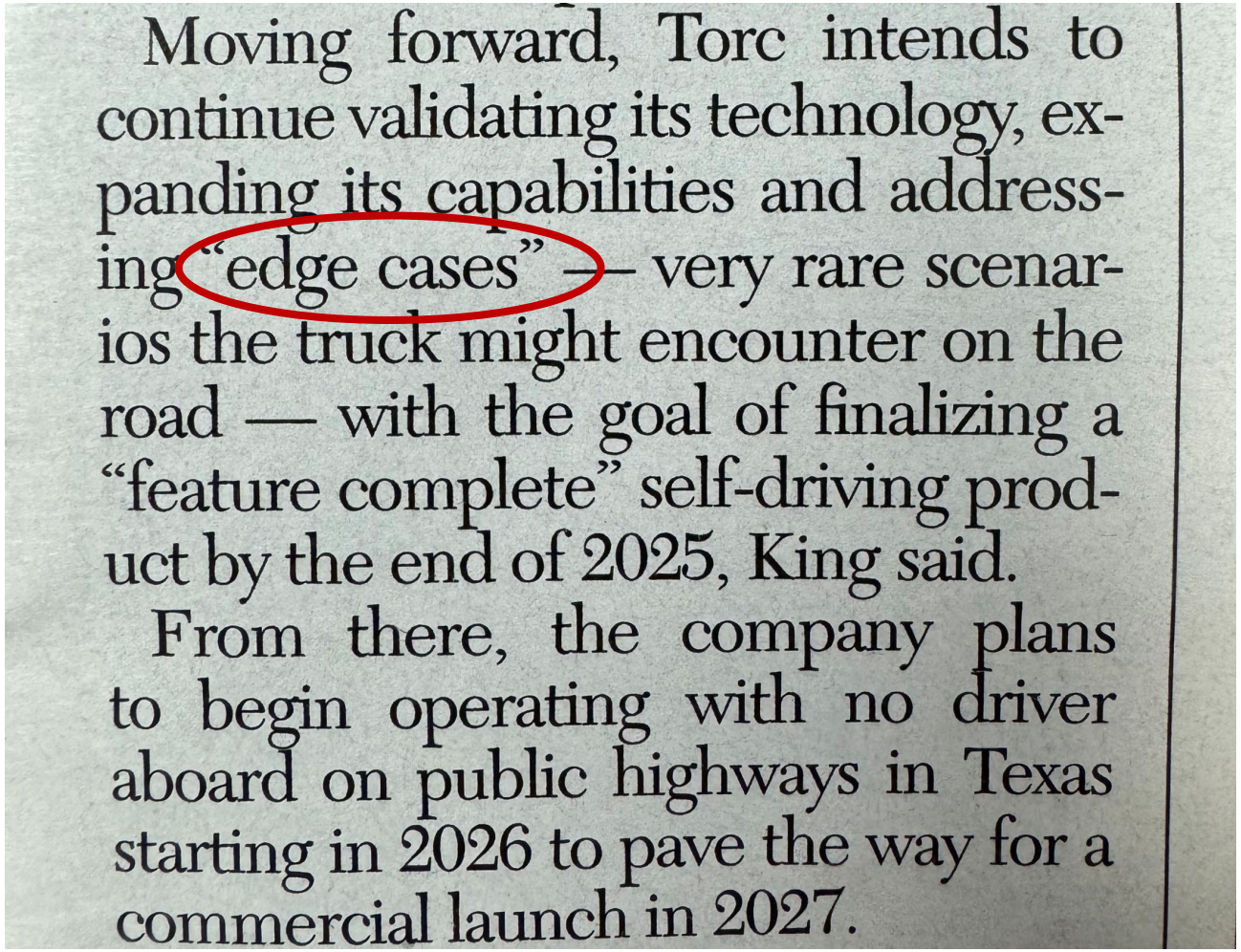



AirFlow
"It's what's behind this skirt that saves lives"
ANGELWING


2009 CHEVROLET
MALIBU
INSURANCE INSTITUTE
FOR HIGHWAY SAFETY


DRAFT
IIHS

“Edge Cases” = Margin of Error
Vision Zero = No Acceptable Margin of Error



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Defensive Driver Training

SMITH SYSTEM
Drive Different. Save Lives.

DRIVE

DRIVER _____ INSTRUCTOR ___

DATE ___/___/___ VEHICLE _____

AIM HIGH IN STEERING®
[ ] Eyes lead the vehicle properly.
[ ] Sees and evaluates relevant information from among distant objects
[ ] Adjusts eye lead distance to speed.
[ ] Keeps vehicle rolling by adjusting for conditions.
[ ] Eyes properly elevated arou

GET THE BIG PICTURE®
[ ] Following distance consistentl
[ ] Makes and executes decision
[ ] Avoids being unnecessarily b
[ ] Speed is neither too fast nor t
[ ] Uses knowledge to make drivi

KEEP YOUR EYES MOVING®
[ ] Scans mirrors frequently.
[ ] Scans major and minor inters
[ ] Moves eyes at least every two
[ ] Checks mirrors prior to slowin
[ ] Avoids staring while evaluatin

LEAVE YOURSELF AN OUT®
[ ] Maintains proper space around the vehicle.
[ ] Adjusts space to avoid unsafe intrusion by other drivers.
[ ] When stopped, leaves appropriate space in front of vehicle.
[ ] Consistently selects lanes to minimize danger and maximize space
[ ] Keeps up to date with current size and shape of space cushion

MAKE SURE THEY SEE YOU®
[ ] Seeks eye contact and communicates when conditions suggest the
[ ] Effectively times use of the turn indicators.
[ ] Appropriate speed and communications when changing lanes.
[ ] Brakes early to activate brake lights.
[ ] Vehicle positioning promotes seeing and being seen.

MAKE SURE THEY SEE YOU®
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Vehicle Crash Incompatibility
Truck Driver Ran a Red Light with AEB
Truck speed drops to 35mph at impact = fatality





(Dash Cam Barbon 01235)

Demand Safety

For Your Drivers



DETROIT™ ASSURANCE

Radar Equipment

The Detroit Assurance radar system uses two cab-mounted modules to monitor and interpret the movement of other vehicles:

Standard Equipment:

But --- it is not! Freightliner gives a “delete credit” option to delete AEB
So, will OEMs really do the right thing to help New Mexico to “Target Zero!”

- Bumper-Mounted Radar detects objects ahead of the vehicle
- The Video Radar Detection Unit (VRDU) which commands the ABS, transmission and other engine computers

Crash Incompatibility: Do OEMS try to fix it?

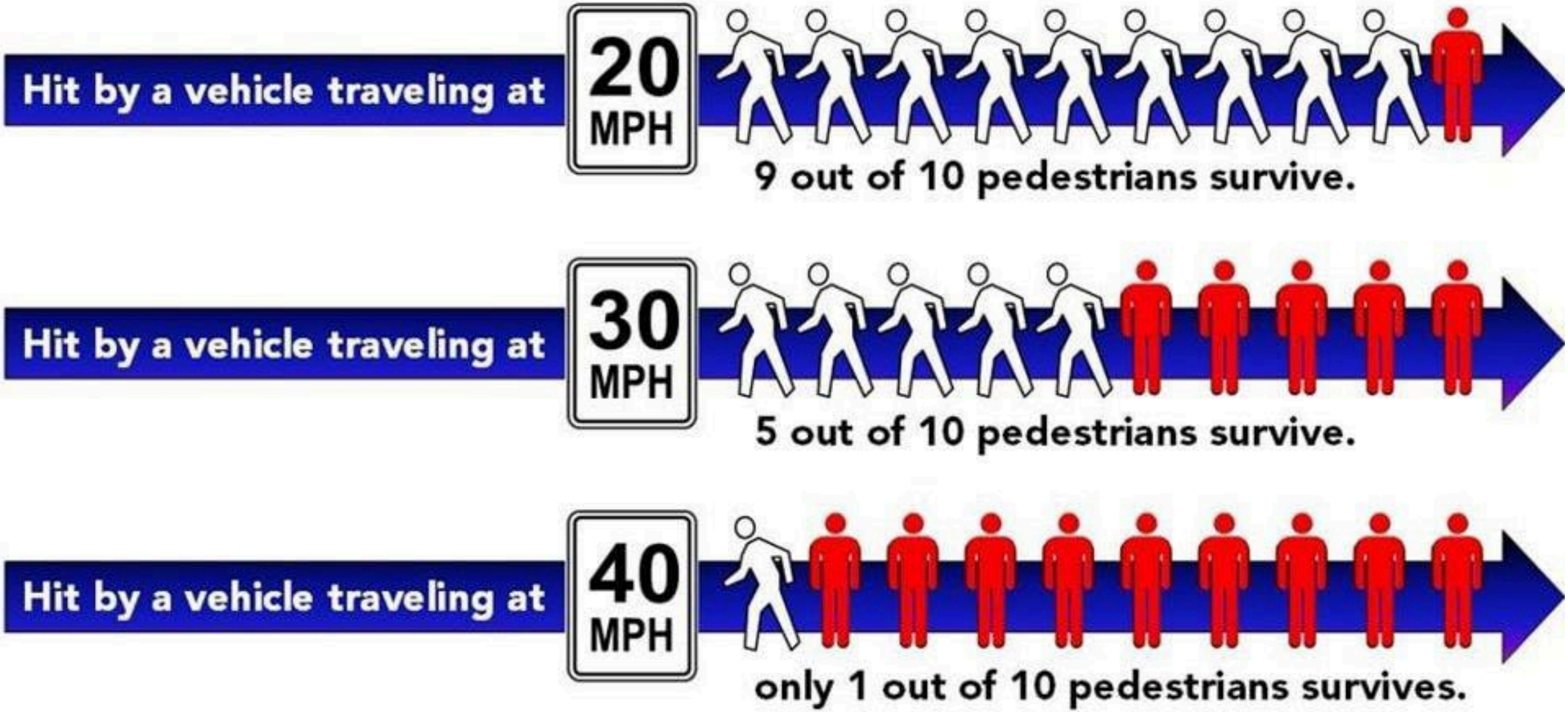
Regulation	United States	European Union
Automatic Emergency Braking	X	2012
Speed Limiting Devices	X	1992
Side Underride	X	1989
Front Override	X	2003

Vehicle Crash Incompatibility
Semi-truck 8 mph – resulting in a fatality

The 2014 Kia is struck by a 2025 Freightliner, operated by [redacted]. An engine control module download was done with the assistance of Sebastian Van Nooten of Ambassador Forensic Engineering. The data for an engine control module is a little different than an air bag control module. This report I examined the sudden deceleration report and found the semi-truck was traveling at 60 miles per hour with the cruise control activated. When the sudden deceleration is recorded, the brake is activated and the truck starts to slow, and Alan was on the brakes for approximately 5 seconds and slows the truck to 8 miles per hour.

Semi-truck 8 mph – resulting in a fatality
Car traveling at 21.74mph




Hit by a vehicle traveling at
20 MPH
9 out of 10 pedestrians survive.
Hit by a vehicle traveling at
30 MPH
5 out of 10 pedestrians survive.
Hit by a vehicle traveling at
40 MPH
only 1 out of 10 pedestrians survives.

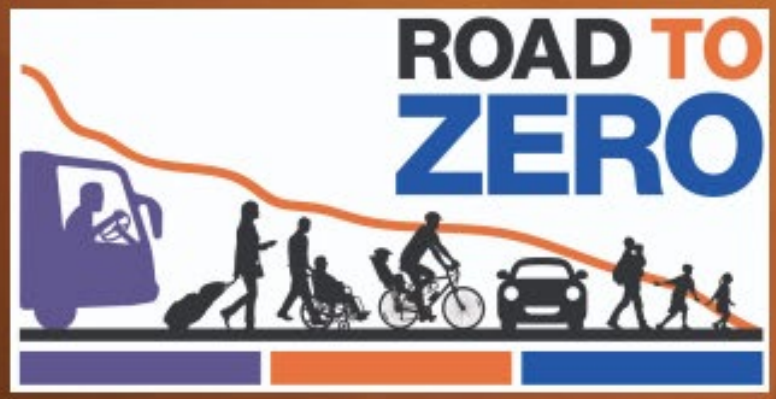

AJ CYCLES
Boughton
IntacoVa
AJ CYCLES
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CamCares
GivetotheMax
VISION
ZERO
CLEVELAND
www.VisionZeroCLE.org
HYDREX
BEST
EQUIPMENT


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RESPONSIBILITY IS SHARED
SAFETY IS PROACTIVE
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SAFE SYSTEM APPROACH
Safer People
Safer Vehicles
Safer Speeds
Safer Roads
Post-Crash Care

target zero NM

ROAD TO ZERO



VISION ZERO NETWORK