

LETTER to Members of Congress FROM ATA regarding the STOP Underrides Act, 6/19/19 (in Italics), followed by RESPONSES from Jerry & Marianne Karth and Lois Durso, 6/21/19.

I write on behalf of the American Trucking Associations (ATA), to address the trucking industry's continued safety efforts and investments; an issue area that was discussed at great lengths during the June 12, 2019 ["State of Trucking in America" hearing](#) before the Subcommittee on Highways and Transit. ATA President and CEO Chris Spear appreciated the opportunity to testify before the subcommittee on behalf of the trucking industry, highlighting the industry's unwavering commitment to safety on our nation's roads and bridges, and the safety of the motoring public.

*As you know, safety anchors the very foundation of the trucking industry, shaping our core values and decision-making. That is why **the trucking industry invests approximately \$10 billion annually in safety initiatives**, and while some of these investments are made to meet a myriad of regulatory requirements, many of them are voluntary, progressive safety initiatives adopted by our members that are **paying dividends in highway safety**. That being said, there is still more work to be done, and **we are committed to the goal of accident and fatality-free highways**.*

Response:

1. How much of the \$10 billion "safety" investment goes toward R&D or purchase of technology that protects the motoring public from injuries and fatalities due to truck crashes? What is the industry annual revenue and profit for the same time period? What % of the trucking industry annual revenue and profit is the \$10 billion Safety Initiative Spending? **2017 \$9.5 billion spent on Safety is 1.4% of their \$676.2 billion revenue.** [Trucking Industry Revenue Hit \\$676.2 Billion Last Year](#). American Trucking Associations' American Trucking Trends 2017 annual compendium of data on the trucking industry reveals that the trucking industry generated \$676.2 billion in revenue last year, making up nearly 80% of the nation's freight bill. August 15, 2017
 2. FMCSA Administrator Ray Martinez said that "One Death Is One Too Many!" Underride protection would save **many** lives by means of making truck crashes more survivable.
 3. What benefits does a truck driver and truck owner receive for the [back-of-the-envelope](#) estimated cost of \$.62/day to invest in underride protection as part of their safety initiative/CODB? You can find a long list [here](#). Here is a [FAQ on the STOP Underrides Bill](#).
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During the hearing, and further highlighted in his written testimony, Mr. Spear voiced ATA's concerns for, and opposition to, the [Stop Underrides Act of 2019](#), introduced earlier this year in both the House (H.R.1511) and Senate (S.665). However, to supplement his testimony, and also respond to troubling

*comments and testimony submitted by other witnesses at the hearing, I would like to reaffirm our opposition to the Stop Underrides Act, and **further illuminate the unintended consequences this misguided mandate would have on our industry.***

Response: It provides no tangible benefit to this conversation to label the STOP Underrides Bill as “misguided,” i.e., having or showing faulty judgment or reasoning. In fact, every single word in the bill is included for a very specific reason. It was gone over with a fine tooth comb. And every aspect of the bill will contribute toward saving lives. It was carefully thought out and written in consultation with engineers, researchers, and leg. Counsel. In fact, following the first Underride Roundtable at the IIHS, a smaller group met to hammer out details of the rear guard portion of this legislation with participation from:

Industry (trailer manufacturers); crash reconstruction experts; engineers; trial attorney; academic experts both national and international; victims; and safety advocates.

In the months following, other aspects of the needed underride rules were discussed and developed.

The Stop Underrides Act is not based on sufficient science, data or demonstrated overall effectiveness. Moreover, it disregards the significant technical issues a mandate of this nature raises, as well as the other proven technologies that exist for addressing these and other crashes, such as automatic emergency braking, camera monitoring systems, and adaptive turning assist. The bill also ignores the diversity of our industry, failing to take into account that trucking is not a one size fits all industry, and that investments in certain technologies that one company makes may not make sense, or be safe, for another. Standards for both new and in-service truck equipment should be based on sound economic and engineering principles that enhance safety, take into account real-world operations, and weigh possible unintended consequences.

Response: It would help if the ATA would define exactly what they mean by “sufficient.” We already have plenty of [data](#). How much of which kind of data is going to be enough? Click here to see documentation of [underride statistics](#). This [site](#) shows underride crash testing videos.

In the written testimony provided by [Andy Young](#), a fellow witness at last Wednesday’s hearing, Mr. Young stated that the cost arguments raised by ATA, and others opposing the Stop Underrides Act, must be “taken into perspective”. ATA has reviewed the figures provided in Mr. Young’s testimony, and has applied those very figures provided to real-world operations, considering the real-world impacts if this requirement were mandated. In his testimony, Mr. Young states that there are 11.7 million registered trailers in existence, as reported by the Federal Highway Administration in 2012.¹ The

testimony further states that trailer orders, in 2019, are projected to reach 324,000 trailers. By these projections, the testimony concludes that “combining all new trailer orders with currently registered trailers puts the total number of commercial trailers in the United States at well over 12 million.” **Equipping the estimated 12 million trailers with a side underride guard, identified in Mr. Young’s testimony as costing approximately \$2,900 including shipping, would equate to approximately \$34.8 billion spent on underride guards. That staggering figure would result in what is likely the largest unfunded mandate on a private sector industry in U.S. history. Furthermore, when combined with the expected cost of labor in installing these guards, would exceed the industry’s annual net revenue, essentially putting trucking out of business, and grinding our economy to a screeching halt. Even if the cost of this unproven technology was phased in over a few years as the Stop Underrides Act directs, it would indisputably divert industry resources away from crash avoidance technologies with wide-ranging benefits in all types of crashes to focus on a narrow type of crash and very specific countermeasure unproven in real-world applications.**

Response:

1. Stating an approximate total cost to the industry for installing the underride protection required by the STOP Underrides Bill is misleading without providing details as to the formula. First of all, not all 12 million trailers will require underride equipment as some trailers are already low and underride is not a danger. Also, the cost of the side guard currently on the market, the AngelWing, is based on very low production. The price-reducing power of mass production, as well as competition, are a given.
2. I’d like to present a figure which should be even more **staggering** in that it involves the value of people who have died due to underride. The number of Underride Deaths in 1994-2015* (FARS data) = 4,201 Take those 4,201 deaths which represent 4% of the total truck crash deaths reported by FARS to be due to underride. Convert it to a more realistic estimate of 27% of truck crash deaths which are likely due to underride. That would be **28,362** people who died between 1994 and 2015 due to preventable truck underride. Imagine! Now let’s take that one step further. Multiply those 28,362 underride deaths by \$9.6 million — the **DOT Value of a Statistical Life**. That equals **\$272,275,200,000!** Like the ATA figures, these are estimates -- estimates which should cause us to take note. These are people who could have survived a truck crash thanks to underride protection.
3. The statement is made that the cost of the guards would exceed the annual net revenue. Yet, in the next sentence, they admit that the STOP Underrides Act allows for the technology to be phased in over a few years. Phasing in means that the calculated cost of underride technology would not be all spent in one year; so there is no reason to compare the cost to an **annual** net revenue.
4. Using the figure from Mr. Spear of \$676.2 Billion annual revenue times the three years for implementation included in the bill, that would be \$2 trillion of revenue for 3 years. At an estimated cost of \$35 billion, that would be 1.75% of the annual revenue going toward the implementation of the STOP Underrides mandate. Once the mandate is in motion, we fully expect that the cost of the equipment will decrease as more competition is in place and a larger volume for manufacturing is in place.)
5. I’m afraid that I can’t dispute the next statement until I have some facts to dispute. Exactly

which industry resources are now being put toward crash avoidance technologies? In what way? By whom? Please specify exactly which resources will be taken away from crash avoidance technologies. What is now being put toward them? What will be required to be put into underride protection technology?

6. Yes, underride protection is a *very specific countermeasure*. It is to specifically provide motorists and vulnerable road users protection from violent death which might occur if they collide with any of the millions of trucks on the road. For any reason. If a collision with a truck occurs, what else will protect them from injury? Certainly not any of the crashworthy features built into their vehicle.
7. *Unproven in real-world applications* does not describe the improved rear underride guard designed and manufactured by Stoughton Trailers. Just ask [Terry Rivet](#) if one of those new guards saved his life on [March 2, 2017](#), *during a massive pileup of cars and trucks on the snowy New York State Thruway. . . at least 20 vehicles, possibly more than 30, were involved*. I already know what he'd say. Maybe we should ask him if Stoughton Trailers should have waited for the new design to work in a real-world applications before putting them on trailers.
8. In contrast, in January 2018, there was another pile-up of dozens of vehicles in white-out conditions in New York, and the only fatality was from a rear truck underride crash. Unfortunately, due to the fatality, we cannot ask that driver how he feels about limiting safety spending to future crash avoidance technology or about the fact that the trailer he happened to be behind happened to be one of the millions with a too-weak rear underride guard. [Edward Torres](#), *64 of Elba, was traveling behind a tractor trailer that came to an abrupt stop because of the accident ahead. Torres also was unable to stop and struck the rear of the tractor trailer. Police said he was transported by ambulance to Erie County Medical Center, where he was pronounced dead.*
9. Thousands of people have already died from going under the side of a large truck. So, from that real-life data, we know that **going under a large truck** is pretty much a bad thing to do for your health. And we know that the contraptions which engineers have thrown together which have actually been successful at stopping a car in a crash test (compared to a duplicate crash test without such a contraption) have been pretty good at protecting the dummies in the car.

*As you are also aware, in April the Government Accountability Office (GAO) published a report², requested by Members of Congress, reviewing the topic of underride crashes. Through a yearlong investigation, including numerous interviews with State and Federal Government, Local Police Departments, Foreign Governments, and over 29 industry groups, including those supportive of this mandate, **GAO concluded that more study should be conducted by DOT on this issue—study that can examine the possibilities of unintended consequences that no parties involved with this issue wants to see. ATA agrees with GAO's findings and recommendation for additional research on side underride guards. Our industry's unwavering commitment to safety should not be impeded by hastily mandating a technology that government experts report requires greater study.***

Response:

1. Yes, the GAO concluded that more study should be conducted. A long answer can be found [here](#). A short answer is that more work can be done to improve data collection on underride and we can do more research (called for in the bill) to make sure that the underride protection is the best possible, but that does not need to be done before mandating that we move forward with requiring this protection be installed on large trucks.
2. There could be [volumes](#) written about what a poor choice of words it is to say that Congress would be **hastily** mandating the STOP Underrides Act. In fact, this legislation is so very long-overdue. It has long been known that the danger of side underride existed when cars and trucks shared the road evidenced by a 1915 [patent](#) for a safety device for the side of motor vehicles to protect “non-occupants of vehicles.” On [March 19, 1969](#), the U.S. DOT published a rulemaking document for rear underride guards which stated that they intended “after technical studies have been completed, to extend the requirement for underride protection to the sides of large vehicles.” On [August 26, 1989](#), the Insurance Institute for Highway Safety (IIHS) published a report about front underride/override and how front underride protection on trucks could protect motorists. In 2010, the [NTSB](#) issued a front underride protection safety recommendation after a truck rode over three vehicles and many other countries have a [FUP standard](#).
3. In 2002, the TMC of the ATA published a forward looking document in which they predicted that there would be underride regulations for straight trucks (box or single-unit trucks) by 2005 and side and front underride regulations by 2006. By that evidence alone, the industry has been anticipating these regulations for 17 years. NHTSA contracted for research to be completed by a transportation institute [Texas A&M virtual side underride study](#) which was published in April 2018. Crash tests have been done by engineers for decades. See this ATA/TMC 2002 paper: [A Brief Look at the Far Horizon An Exploration of What’s to Come for Trucking](#)
4. What may make it seem hasty is that, now that we finally have appropriate legislation backed by years of research and petitions, there is no longer a valid reason for delaying any longer.

*Advocates for mandating side underride guards have reiterated that these devices have been tested. ATA is only aware of testing that has been completed on a closed course, at well below highway speeds, during **perpendicular side impact crashes** into a stationary trailer. Earlier this year at Audi Field, ATA witnessed firsthand that these crash tests were successful in stopping the vehicle from penetrating underneath the side of the trailer within a controlled test environment. What we have not witnessed, nor do we know what may happen, is the results of a crash during a realistic highway scenario—at **highway speeds**, with a moving truck and trailer, and with other traffic present. For instance, a **concern remains that a side underride guard may successfully stop the passenger car from going underneath the trailer, however, the potential for that car to bounce off the trailer and strike other vehicles is a concern that should be researched.***

Response:

1. Let's examine **possible secondary impacts due to deflection by side guards**. A side guard STOPS a car from going **underneath** a trailer. Success! No Passenger Compartment Intrusion (PCI)! No [mechanical asphyxia](#) from [blunt force trauma](#), instant death or horrific injuries which no parent or loved one would want someone to go through. No [LeFort](#) facial fractures or [blunt facial trauma](#) (meaning just about every bone in your face is broken) because the truck collided with your face. No [petichiae](#). No [carotid artery dissection](#) or [cerebral artery infarct](#) and strokes, or profound [neurological](#) and [brain injury](#). No being scalped ([avulsion](#)) in the blink of an eye as your world (and your family's) is shattered with no warning. No prognosis for functional recovery being grim or non-existent. No going to the morgue to identify your loved one. No watching your loved one die in the hospital due to catastrophic injuries. No "closed casket crash." (Guess what. . . I'm describing what my daughters went through while their 15 year-old brother helplessly looked on and tried to comfort his younger sister who was fighting for her life, and their father's experience in the aftermath.) No being a paraplegic or quadriplegic.
2. Instead, you have the potential unintended consequence that, once the tragedy is averted, you may have the protected vehicle crash into one or more other vehicles -- causing extensive damage to every one of them. You may have some totalled vehicles, but the passengers are thankfully likely to benefit from the crashworthiness features of today's passenger vehicles -- crumple zone, airbags, and seatbelt tensioners. Some of the occupants might require some recovery time from their injuries, but few are likely to die as a result.
3. The crashes which may occur, **because a side guard did what it was supposed to do**, will never be as deadly as when a car goes under a truck. All the other unintended collisions will have the benefit of the crashworthiness features of the car to protect the occupants from the type of catastrophic injuries which occur when a truck hits a human being.
4. *"Arguing that allowing underride with a high and heavy truck is somehow better than engaging an underride guard just doesn't make sense, and runs contrary to the benefits clearly demonstrated in IIHS testing and elsewhere. Any collision with an underride guard that might be considered severe should be envisioned without an underride guard and would certainly have even worse consequences since the car's front crumple zone, airbags and seat belts are bypassed. In an underride the crush to the car occurs higher at head and neck level. Any underride collision not severe enough to result in passenger compartment intrusion is one well within the vehicle's capacity to protect the occupants if it were to engage an underride guard instead."* Perry Ponder
5. Perry Ponder also cautions that, *the danger of subsequent "follow-on" collisions isn't lessened by the exclusion of a side guard, as evidenced by side underride collisions where **the car comes out the other side** after the roof and passenger's survival space is annihilated* This [video](#) demonstrates how a car can go completely under a trailer & out the other side. & in [Tesla crash](#)
6. Perry raises the question, **Do we exclude safety countermeasures due to the slim chance of a secondary impact?** *Do we prohibit guardrails on bridges and allow cars off the highway and into the water due to the possible redirection of the car? Do we allow them to fly off the cliff on a mountain road? Of course not. Redirection of the car away from danger is the purpose of*

guardrails. . . including a side guardrail on a trailer.

7. In April 2018, NHTSA published results of a Texas A&M side underride study, ***Computer Modeling & Evaluation of Side Underride Protective Device Designs***. *The objective of this research study was to evaluate the design requirements and safety performance of SUPDs. . . SUPDs were successfully designed for oblique angle impacts of different severity. The impact conditions involved a Toyota Camry passenger car impacting the SUPD at a speed of 50 mph and angles of 30, 22.5, and 15 degrees. Impact simulations were used to evaluate the performance of the SUPDs for impacts along the length and near the ends of the systems.*
8. Underride protection may protect gas tanks from being ruptured and truck steering mechanisms from damage so truck drivers can maintain better control in a collision. Read more [here](#).
9. The AngelWing side guard was successfully tested at 47.2 mph. See the crash test [here](#).

*Another example of an unintended consequence was provided in comments filed with the National Highway Traffic Safety Administration (NHTSA) in May 2016, the Truck Trailer Manufacturers Association (TTMA). **TTMA's comments noted a European trailer manufacturer's experience with trailer failures due to the increased rigidity in the trailer structure from added frame supports for side underride guards. The trailers were less flexible when operated over uneven road surfaces or on surfaces that produced twisting forces, which led to the trailers becoming disabled during highway use, presenting safety risks to other motorists.** The TTMA comments also point out that there would be a **significantly increased likelihood of high-centering of the side guards on steep changes in highway and street levels, such as elevated railroad crossings, and at warehouse docking wells.** High-centering incidents already occur when operators of low frame trailers misjudge clearance heights at railroad crossings, which can result in tractor-trailers becoming stranded on railroad tracks. If all commercial vehicles were to have substantial side underride guards, as this bill requires, high-centering incidents would likely become more frequent.*

Response:

1. ATA is referring to concerns about the kinds of damage experienced by owners of Krone trailers in Europe. A side guard developed by the [Krone](#) company in Europe had problems with causing cracks over time in the trailer floor. This has been pointed to by many in the industry as “proof” that no side guard can be designed which will not damage the trailer and cause other safety problems. Please take some time to review [this deposition](#) and an [excerpt](#) which includes questioning of a Krone representative.
2. You will find that although it was not a technical success, the company chose not to continue developing it due to economic reasons because safety was not their original motivation. At the time they were the only ones trying to stop cars from going under the side of trucks in Europe and they chose not to continue on that path. However, he was not implying that it would have been impossible to make corrections had they tried.
3. Krone embarked upon a complete curtain-sided trailer redesign, which happened to have a low

frame. Clearly the connections and the members weren't designed/constructed adequately and they had problems. Mr. Sanders says that this experience is not indicative of what will happen when a side guard is added to an existing US-style box trailer.

4. It should be noted that Krone did not design a side guard to go on the side of a trailer, instead they designed a new type of trailer which had side underride protection. It was the trailer design which had technical problems -- not a side guard which caused structural problems to an existing trailer design.
5. Also, it is my understanding, from the deposition, that Krone had a working relationship with Wabash Trailers in the U.S. at the time when they were working on the trailer which had a side guard on it. Although Krone made the decision not to continue development of side underride protection on their trailers, Wabash Trailers themselves did R&D work on side guards. In fact, they have showcased their prototype side guard at truck shows in the U.S. in 2017 and 2018. And they have a [side guard patent](#) issued in the U.S. on March 14, 2019.
6. Concerns about high-centering on elevated railroad crossings. The engineers who have worked on trying to solve the side underride problem are engineers who love to solve problems. They think about every aspect of the problem. They listen to truck drivers and motor carriers.
7. Here is a reaction to that concern from [Perry Ponder](#), an engineer and designer of the AngelWing side guard: A 2002 Study by the University of West Virginia showed that trailers and trucks must be much lower to the ground than an underride guard to hang up on regulation railroad crossings and driveway and dock slopes. One need look no further than how low semi-tractors are to the ground, or low-boy trailers. or car hauling trailers, to dispel the notion an underride guard at 16 to 18 inches from the ground cannot operate safely over the road. [Development of Design Vehicles for Hang-Up Problem](#).
8. This problem is not unique to trucks with side guards. Solutions for the industry as a whole are already being [addressed](#). In fact, the FRA has a [database](#) of railroad crossings -- hopefully that could be made use of to allow truck drivers to plan their trips to avoid hazardous crossings.
9. In addition, the NTSB has investigated high profile grade crossing crashes and *recommended that high-profile grade crossings have clearer, less ambiguous signage so that drivers of all types of vehicles can better determine if their vehicle could safely traverse the crossing*. The [agency's report](#) *called for criteria to determine when an existing high-profile grade crossing should be modified or closed, and for better communication between all the entities involved in the maintenance and safety of grade crossings*.
10. There is discussion of using GPS "[geo-fencing](#)" technology to enable trucks to avoid getting stuck under low bridges. Could the same be done for avoidance of out-of-conformance railroad crossings?

*The Stop Underrides Act also fails to consider **numerous complicating factors such as engineering tradeoffs involving weight, strength, and effectiveness of side guards**. This is not an issue of the added weight to the trailer requiring companies to transport less freight, but rather serious concerns for the **potential to degrade the structural ability of a trailer over time**. As referenced in Mr. Young's testimony, trailers often see a lifespan of over 15 years. Without further study, it is impossible for us to*

*anticipate the effects of this added weight. Furthermore, the bill raises significant operational issues related to ground clearance, **moveable trailer axles**, and the **diversity of truck and trailer designs**. For example, the **ridged specified design of side underrides would not work well with tank and bulk trailers that are cylindrical in size and require underbelly accessibility; flatbed trailers, which unloaded, are naturally curved to suppress weight; and intermodal trailers that are shipped and locked onto specific designed chassis for hauling**. Simply put, these glaring operational concerns do not suggest real world applicability, nor justify an industry-wide mandate.*

Response:

1. The Angel Wing has been on the market since 2012 withstanding 700,000 actual road miles traveled with no structural integrity issues. It has been tested at a Utility durability track with no issues.
2. This is not a one size fits all bill which some seem to think it is. Rather than detailed specifications which every truck must fulfill, the bill is instead based on the requirement that each truck meet a performance standard: be able to pass a crash test proving that it can prevent underride and passenger compartment intrusion (PCI).
3. If the design of a truck/trailer already ensures that a car will not go under it upon impact, then, of course, they can apply for an exemption. There is no need to require changes when the goal of safety will have already been met.
4. The bill actually gives engineers the freedom to solve the underride problem in innovative ways. For example, the side underride problem has been solved by both AngelWing and TrailerGuard -- in two unique ways.
5. The TrailerGuard System's SafetySkirt is an innovative design making use of polyester webbing combined with a side skirt and an aluminum reinforcement attachment to the rear underride guard. It both strengthens the rear and also provides underride protection at the sides of a truck. It can be seen [here](#) Aaron Kiefer patents: Underride Guards US 9,463,759 B1 October, 2016
<https://patentimages.storage.googleapis.com/a8/ff/df/6b96c29c8ff5b8/US9463759.pdf>
Underride Guards US 9,908,493 March, 2018
<https://patents.google.com/patent/US9908493B1/en>



- 6.
7. The two systems were successfully tested at the March 26, 2019, D.C. Underride Crash Test Event. Videos can be seen [here](#).
8. The industry has brought up concerns that there are some types of trucks on which a side guard could not be installed. See photos of the AngelWing installed on a flatbed trailer.
- 9.

10.



11.



12. The picture below is not an Angel Wing but shows that side guards are possible on tanker trailers.

13.



ATA continues to believe that the most effective improvements to road safety should be directed at preventing the crash from happening in the first place. The Stop Underrides Act focuses on mitigation after the crash has already taken place. Our focus should be on crash avoidance that can be achieved by enhancing vehicle-to-vehicle (V2V) connectivity. As such, ATA has been a leading member of the Safety Spectrum Coalition, which includes the National Safety Council, in the

effort to preserve the 5.9 GHz spectrum for vehicle safety use, which will have significant implications for connectivity crash avoidance. In NHTSA's January 2017, V2V Notice of Proposed Rulemaking for light-duty vehicles, the Agency estimates that four safety applications enabled by the proposed rule could avoid or mitigate 89% of light-duty vehicle crashes.⁴ NHTSA is currently also conducting research on V2V for heavy vehicles, and estimates that 70% of crashes involving trucks occurred in scenarios that could be addressed by V2V systems.

Response:

1. Many in the traffic safety community who are working [toward zero deaths](#) embrace a safety philosophy which encompasses multi-faceted strategies to achieve that goal. A [safe systems](#) approach. Both crash avoidance **and** crash mitigation/underride protection (to reduce deaths and injuries) technologies help us move toward that goal. Both/And not Either/Or
2. The [Road to Zero Coalition](#), [National Safety Council](#), [Consumer Reports](#), [Truck Safety Coalition](#), [Road Safe America](#), [National Sheriffs Association](#), [Commercial Vehicle Safety Alliance](#), [Advocates for Highway & Auto Safety](#), along with many engineers and individuals support the goals of the STOP Underrides Act.
3. Supporters of [Road to Zero Coalition Priority Statement on Truck Underride](#):

- AAA, [aaa.org](#)
- Advocates for Highway and Auto Safety, [saferoads.org](#)
- American Association of Motor Vehicle Administrators, [aamva.org](#)
- American Association of State Highway and Transportation Officials, [transportation.org](#)
- Commercial Vehicle Safety Alliance, [cvsa.org](#)
- Global Automakers, [globalautomakers.org](#)
- Governors Highway Safety Association, [ghsa.org](#)
- Institute of Transportation Engineers, [ite.org](#)
- Insurance Institute for Highway Safety, [iihs.org](#)
- Intelligent Car Coalition, [intelligentcarcoalition.org](#)
- International Association of Chiefs of Police, [theiacp.org](#)
- MADD, [madd.org](#)
- National Association of City Transportation Officials, [nacto.org](#)
- National Association of County Engineers, [naco.org](#)
- National Association of State Emergency Medical Service Officials, [nasemso.org](#)
- National Safety Council, [nsc.org](#)
- Vision Zero Network, [visionzeronetwork.org](#)

4.

Collisions between cars and trucks **can be deadly even at low speeds** due to the underride (and Passenger Compartment Intrusion) that occurs.

So even if side guards were **not** able to prevent underride at higher than 35 mph (which the AngelWing side guard can, plus a rear guard has been proven at 40 mph), there would still be

many lives saved -- including those collisions in which crash avoidance technology was able to **reduce** the speed at impact but **not** totally prevent a collision.

No matter what speed it happens at, if a car collides with a truck, underride is likely to occur and deadly passenger compartment intrusion. In other words, crash avoidance technology by itself will never be able to stop all underride deaths.

**Crash Avoidance + Underride Protection
Both/And is much better than Either/Or.**

*Crash avoidance technology just lessens impact severity by **slowing** the vehicle down - not necessarily **avoiding** the crash.*

- *WITHOUT UNDERRIDE PROTECTION, underride and PCI can happen at just 15 mph.*
- *WITH UNDERRIDE PROTECTION, the reduced speed would lead to an increased effectiveness rate of side guards.*

Lowering speeds in a crash is a good thing, and even more of a good thing when an underride guard is present. Perry Ponder

Currently, AEB on cars does not reliably detect large trucks: *Autobrake systems that reliably detect large trucks could prevent underride crashes. Twelve percent of U.S. passenger vehicle occupant deaths in 2017 were in crashes with large trucks, and 1 in 5 of these deaths occurred when a passenger vehicle struck the rear of a large truck.*

<https://www.iihs.org/api/datastoredocument/status-report/pdf/54/2>

“IIHS tests indicate that current ACC systems aren't ready to handle speed control in all traffic situations. . . . Apart from questions about whether the systems perform as drivers expect, one of the many factors to consider is how much of the driving task can safely be handed over to technology without drivers checking out altogether?”

"Designers are struggling with trade-offs inherent in automated assistance," says David Zuby, IIHS chief research officer. **"If they limit functionality to keep drivers engaged, they risk a backlash that the systems are too rudimentary. If the systems seem too capable, then drivers may not give them the attention required to use them safely."**

Real-world crashes involving vehicles with Level 2 automation demonstrate the matter isn't settled"

"Driving automation could reduce crashes by eliminating some of the potential for human error," says IIHS Senior Research Scientist Ian Reagan. **"But given the low use of the systems and the fact that most vehicles on the road today still don't have these features, we don't expect to see these crash reductions any time soon."**

<https://www.iihs.org/news/detail/is-automation-used-where-its-intended>

Many underrides occur due to factors which can't be overcome by collision avoidance technology, e.g., weather and road conditions. It may be many years before the full passenger vehicle and CMV fleets will be totally equipped with collision avoidance technology, as well as having 100% connectivity. **Meanwhile, underride protection could be saving lives.**

Deb Hersman, when she was President of the National Safety Council, made this statement:

*NHTSA estimates that 94% of all fatal crashes have an element of human error. Therefore, if we are to eliminate or reduce the number of fatalities on our roadways, advances in vehicle technology must be part of the solution. However, **it will likely be decades before we have meaningful fleet penetration of fully automated vehicles.***

*Last month, the NSC and the National Transportation Safety Board (NTSB) hosted a full day event with dozens of expert panelists focused on *Reaching Zero Crashes: A dialogue on the Role of Advanced Driver Assistance Systems (ADAS)*. While there is a great deal of excitement about highly automated vehicles (HAVs), automated vehicles and their potential to save lives, it is important to recognize that many legacy technologies represent the building blocks for fully automated vehicles. Greater consumer acceptance of the dozens of safety technologies that are available today would lead to more rapid adoption of them, saving lives and preventing injuries.*

*As an example, Electronic Stability Control (ESC) is a technology that uses automatic computer controlled braking of individual wheels to help the driver maintain control in risky driving scenarios. ESC primarily mitigates single vehicle, loss of control crashes in which drivers would run off the road. For passenger cars as well as light trucks and vans, it is estimated that ESC systems have saved more than 4,100 lives during the 5-year period from 2010 to 2014, **but incorporation into vehicles on the road remains slow.** The following charts from the Highway Data Loss Institute (HDLI) reveal how slowly ADAS technologies are achieving penetration in the US fleet **due to normal turnover of inventory**—with the average age of cars in the US fleet being 11.5 years old.*

*Electronic stability control has been available for decades and was mandated on all new passenger cars by the 2012 model year, but in 2015 only 40% of registered vehicles were equipped with ESC. Despite a clear life-saving benefit, **full fleet penetration of this technology is not predicted until the 2040s.** Deb Hersman, NSC president at the time of her testimony,*

[Automated & Self-Driving Vehicle Revolution: What is the Role of Government?](#)

The basic underride problem is that the bottom of trucks is higher than car bumpers -- so if collision avoidance technology does not totally prevent a collision, the car slides under and **the first point of impact** is at the windshield. You can imagine what happens next.

See what happens when collision does occur into the rear of a truck which **is** and **is not** equipped with an effective rear underride guard:

[The difference a well-designed rear underride guard can make](#)

[Benefits of side underride guards for semitrailers](#)

[Truck Front Underrun Protection System Crash](#)

Based on the testimony provided at last weeks hearing, we felt it necessary to further communicate our concern for, and opposition to the Stop Underrides Act. As you can see, our concerns are very broad in scope, and not solely an issue of the economic impact. The technical concerns, unintended consequences, diversity of operations, vehicle/trailer designs, and consideration of alternative technologies have brought us to the position we reiterate today. Nevertheless, ATA and the trucking industry remain dedicated in a commitment to improving the safety of our nation's roads and bridges, and look forward to our continued work with your respective Committees, Congress, the Administration, enforcement, and other interested parties on the shared the goal of enhancing highway safety.

Thank you for your thoughtful consideration, and leadership on this critical issue.

Dan Horvath, Vice President, Safety Policy, American Trucking Associations