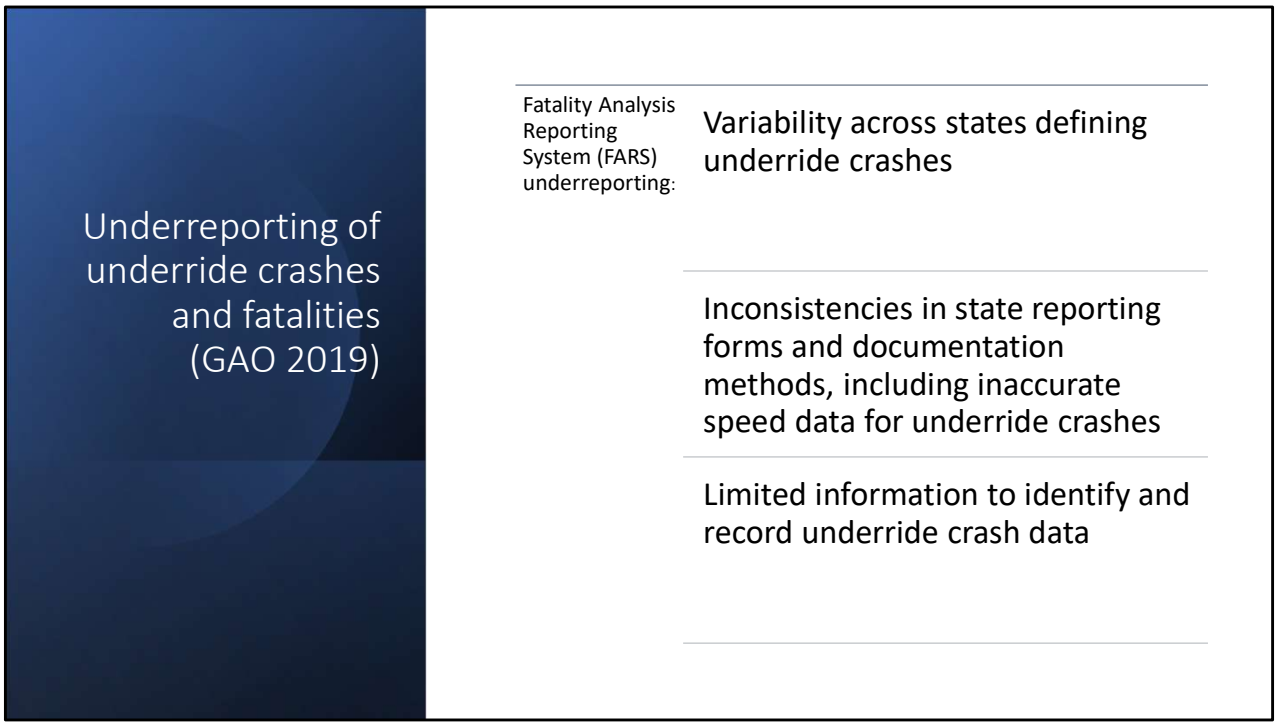
Information to Consider in NHTSA's Cost-Benefit Analysis

*Featured with optional aerodynamic side skirt

We are presenting information for you to consider during your forthcoming cost-benefit analyses for side underride
Guards.



In their 2019 report, the Government Accounting Office acknowledged underreporting of underride crashes and fatalities. The underreporting of underride crashes and fatalities is due to variability in the data collection process which limits NHTSA's and other's ability to accurately determine the frequency of such crashes. Stakeholders interviewed reported that underride crash fatalities are underreported in FARS due to several factors, such as variability across states in defining underride crashes, inconsistencies in state crash reporting forms and documentation methods including speed data, and limited information provided to state and local police on how to consistently identify and record underride crash data. These factors directly contribute to police officers incorrectly and inconsistently documenting underride crash data on the FARS crash report form.

Underreporting of underride crashes and fatalities (GAO 2019)

"*Underreporting of underride crashes would affect the quality of NHTSA's data, thereby affecting the agency's ability to accurately identify the magnitude of underride-related crashes and limiting its ability to make informed decisions on rulemaking*."

Consider a range of fatality estimates when calculating the cost-benefit of underride guards

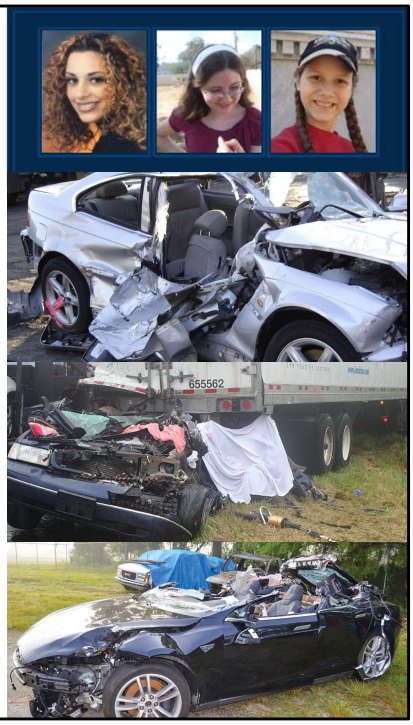
Peer-reviewed articles substantiate the problem of undercounting underride fatalities in FARS:

- Blower D. and Campbell K. 1999 [***underreporting by factor of 2***]
- Braver, et al. 1997a [***underreporting by factor of 6***]
- Braver et al. 1997b [***underreporting by factor of 2.8***]
- Brumbelow, ML. 2012 [***underreporting by factor of 3.7***]
- Padmanaban, J. 2013 [***underreporting by factor of 3.1***]
- Brumbelow, ML. 2017 pers. comm. [in 2015, **593** of 1,542 fatal crashes between large trucks and passenger vehicles were from underrides (301-side; 292-rear]

These peer-reviewed articles, demonstrate that there is substantial undercounting of underride crashes in the FARS database by factors of 2.8 to 6. As an example, Matt Brumbelow dove deeply into the 2015 data and reported that there were **593** of 1,542 fatal crashes between large trucks and passenger vehicles were from underrides. These included 301 from side underrides (I note that one of these deaths was my 16-year old son, Riley). Consequently, please consider a range of fatality estimates when calculating the cost-benefit of underride guards.

FARS underride data inaccurate

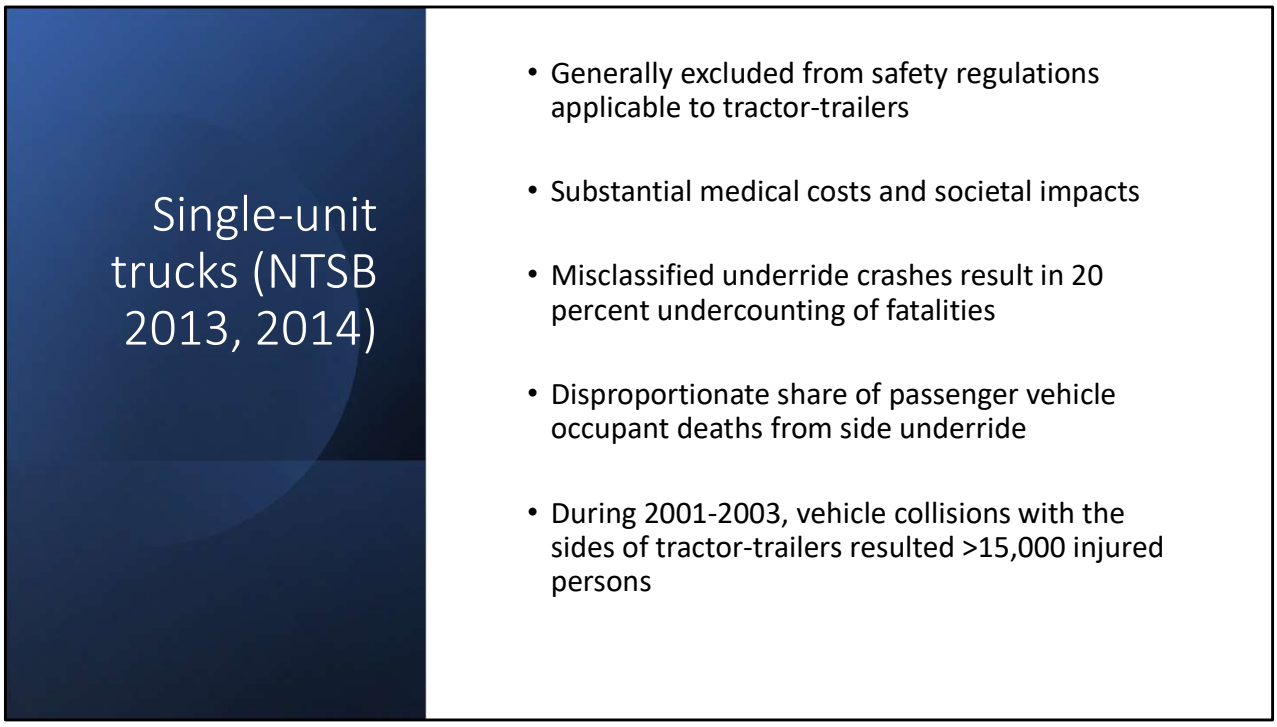
- Roya Sadigh (2004)
- Annaleah & Mary Karth (2013)
- Joshua Brown (2016)



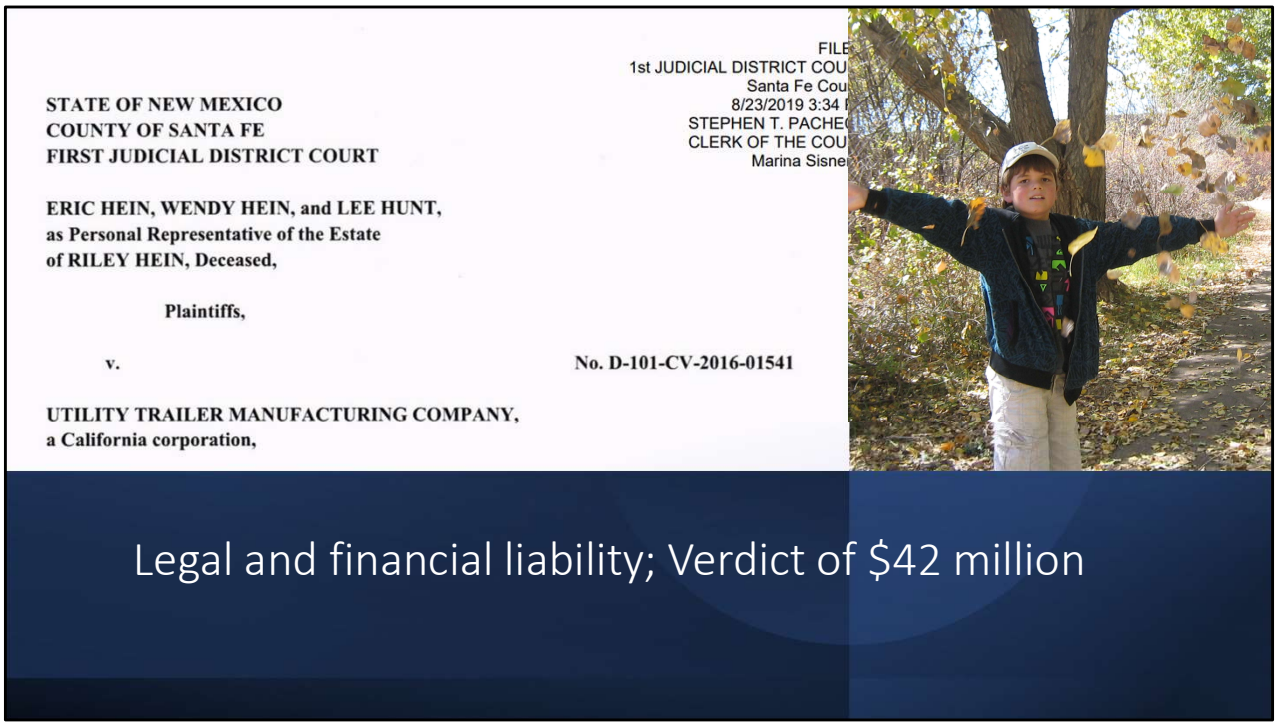
Underride undercounting has also been corroborated by our evaluation of the inaccurate FARS reports for our personal crashes, including the 2004 underride death of Roya Sadigh and the 2013 underride deaths of AnnaLeah and Mary Karth. We have observed further evidence of questionable data in our review of the FARS report for the 2016 Joshua Brown crash in which his Tesla went under the side of a tractor-trailer in Florida and was investigated extensively by the NTSB. His crash was coded as “No underride/override noted”

National Transportation Safety Board (2013) reported:

- FARS has been shown to markedly undercount the occurrence of both side and rear underrides, which calls the cost-effectiveness analysis into question
- Half of all collisions resulting in injury between passenger vehicles and the side of single-unit trucks involve underride, pose a high risk of death and injury, and could be reduced by side underride guards



Single-unit trucks have been excluded from safety regulations for large trucks in the past because they have been undercounted in fatality cases by about 20 percent, due to misclassification in federal and state databases. Because of this undercounting, previous single-unit truck rulemaking concluded that mandating effective underride protection would not be cost-effective. The injuries, hospitalizations, emergency department visits, and fatalities resulting from single-unit truck crashes have widespread societal implications including long-term disability, suffering, and substantial medical costs. Take into account, single unit trucks share a disproportionate amount of passenger vehicle occupant deaths. Additionally, recognize the fact that NTSB research has indicated that passenger vehicle collisions with the sides of tractor-trailers resulted in more than 15,000 injured persons during 2001-2003.

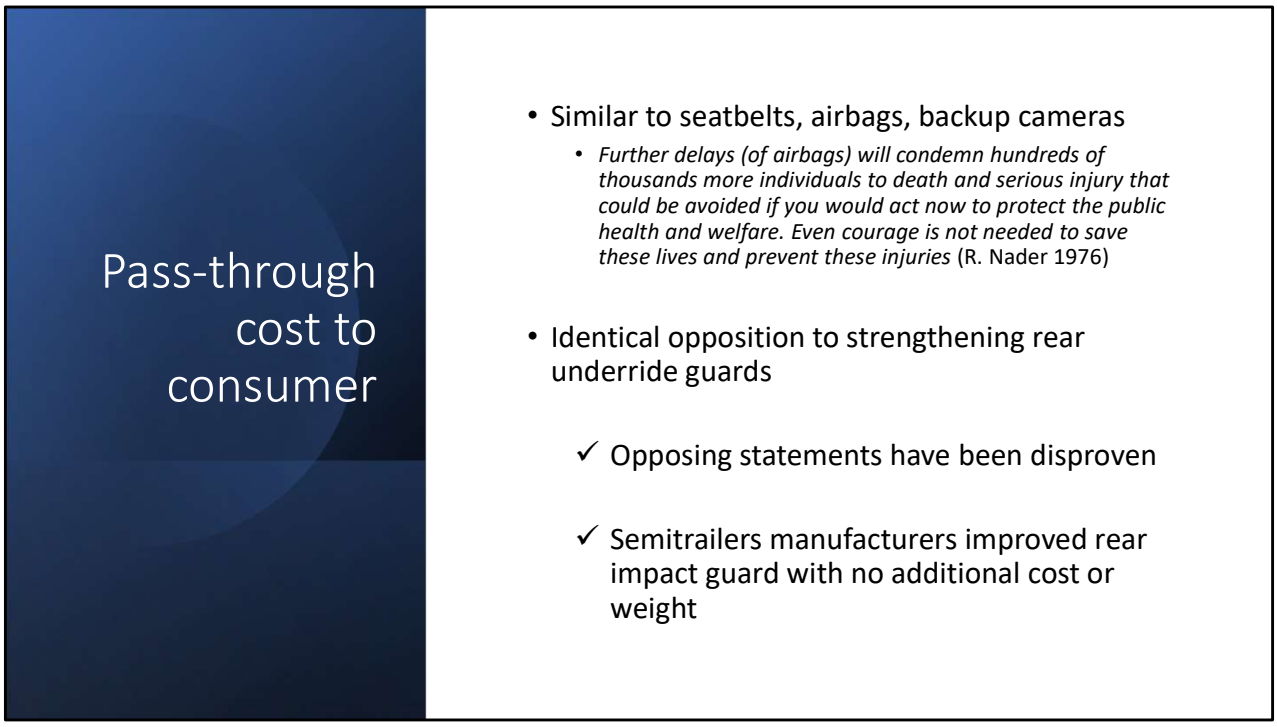


Factor in the legal and financial liability that is best exemplified by the jury verdict in my son Riley's death from a side underride collision in 2015. In August 2019, after a 2-week trial in Santa Fe, New Mexico, the jury reached a $42 million verdict against the Barkandi Express Trucking Company and Utility Trailer Manufacturing Company. Of this, the judgement against Utility Trailer Manufacturing Company was $18.9 million and $23.1 against the trucking company. The jury found that Utility Trailer Manufacturing Company was negligent in Riley's death because they ignored basic facts: hundreds of people continue to die every year from semitrailer side underride collisions and their semitrailer lacked a side underride guard to prevent Riley's death.

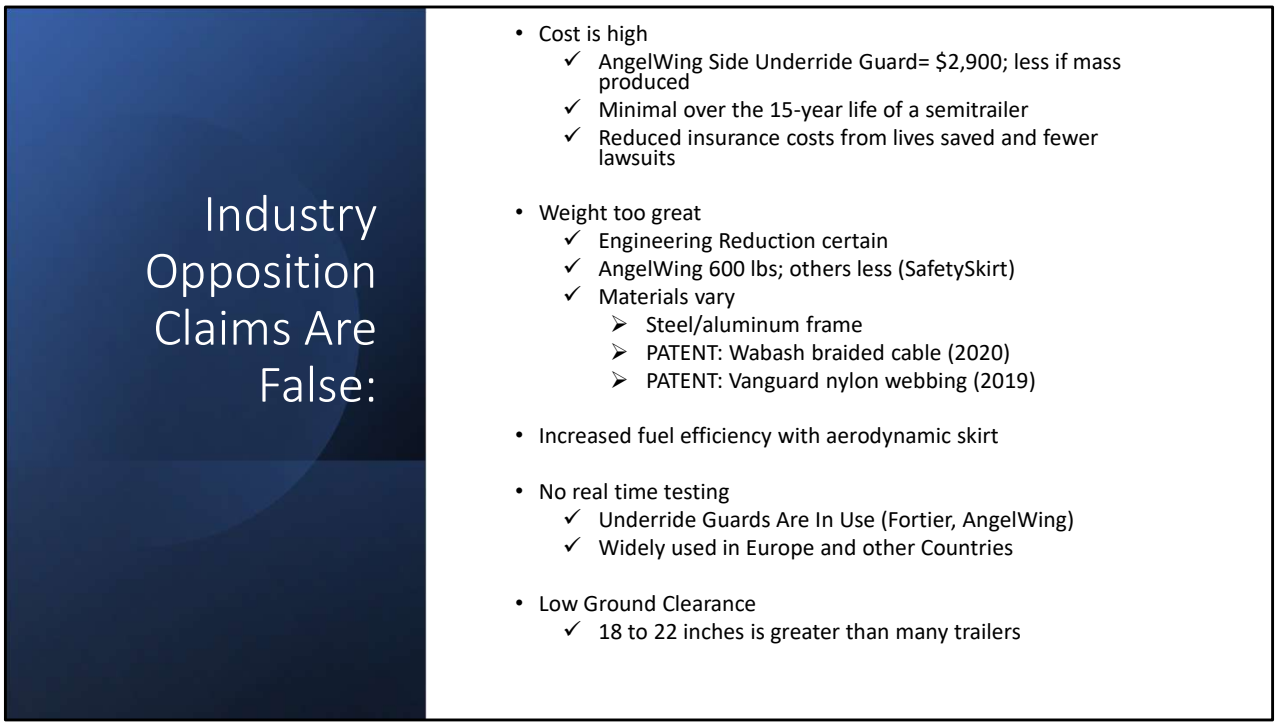
Trucker Legal liability

Trucker charged with manslaughter for underride crash that killed three Livermore, CA teens: Rahul Brar, 18; Shej Kumar, 16; and Ian Ericksen, 16 (April 20, 2021)

Also consider the legal liability and affect to truckers….these may include manslaughter charges and potentially jail time, PTSD, and a long term affect on their career from deaths that could have been prevented.

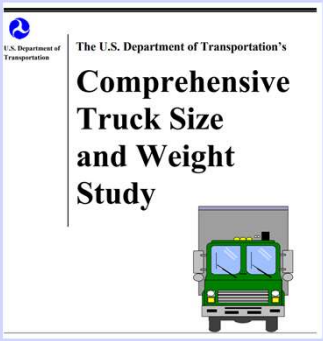


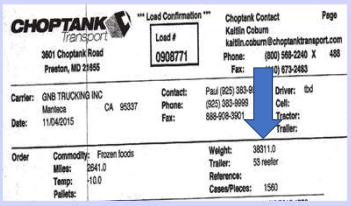
The costs of side underride guards are insignificant in relation to the cost of a trailer. Similar to other safety measures, for example in passenger vehicles (e.g., seatbelts, airbags, backup cameras), underride guards would be a pass-through cost to the consumer. The regulatory framework for underride guards is remarkably identical to airbags, which developed in the United States largely because auto manufacturers were not paying enough attention to producing safer vehicles (see Aubaum and IIHS 2005). Even though the trucking industry was opposed to rear underride guards in 1971 (citing weight, cost, and operational concerns), rear underride guards are now standard and are manufactured with aluminum some with no additional weight or cost.



The Truck Trailer Manufacturers Association and Owner Operator Independent Drivers Association has inaccurately claimed for years that the benefits do not outweigh the potential costs for side underride guards. The current cost of an AngelWing Side Underride Guard, is about $2,900.00, which includes shipping anywhere in the US or Canada. If this, or a similar guard, were mass produced with the semitrailer, the cost is likely going to be much less. Moreover, the cost will likely be offset with the savings brought with the fuel efficiency because the side guard would also be installed with a fuel-efficient skirt. Additionally, insurance cost would likely be less for trailers with side underride guards because they will save lives and limit lawsuits. The weight of a set of Anglewing side underride guards is currently about 600 pounds; however, other braided cable or nylon webbing like SafetySkirt designs that were recently developed, by engineers -- including one from a trailer manufacturer -- are about half of this weight. Future engineering, after underride guards are mandated, will undoubtedly bring about further innovations in reducing guard weight. Underride guards are in use: Fortier and Angelwing. Ground clearance is a non-issue as many trailers have only inches of clearance (auto carriers) and a guard would maintain 18 to 22 inches of clearance.

Most Freight hauled in Semi-trailers "Cubes out before it weighs out" (FHWA; Journal of Commerce 2018)



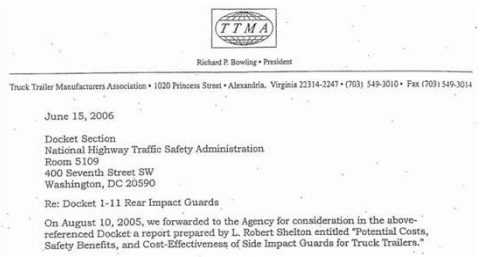


- ***Cargo space fills before reaching the 80,000 pound limit (e.g., fully loaded trailer that killed Riley was 7,000 lbs less than maximum permitted)***

About 80 to 90 percent of freight hauled in semitrailers

Lobbying tool: Shelton Cost-Benefit Report (2006)

- Submitted to NHTSA in 2006
- Undercounted fatalities (only **5 lives** saved by SUG)
- Faulty and misleading conclusion ($47 million per life saved)
- Reviewed by District Court jury in *Hein* v. *UTM* (2019; Sievers 2020)
- Discontinue its use



TTMA

Richard P. Bowling • President

Truck Trailer Manufacturers Association • 1020 Princess Street • Alexandria, Virginia 22314-2247 • (703) 549-3010 • Fax (703) 549-3014

June 15, 2006

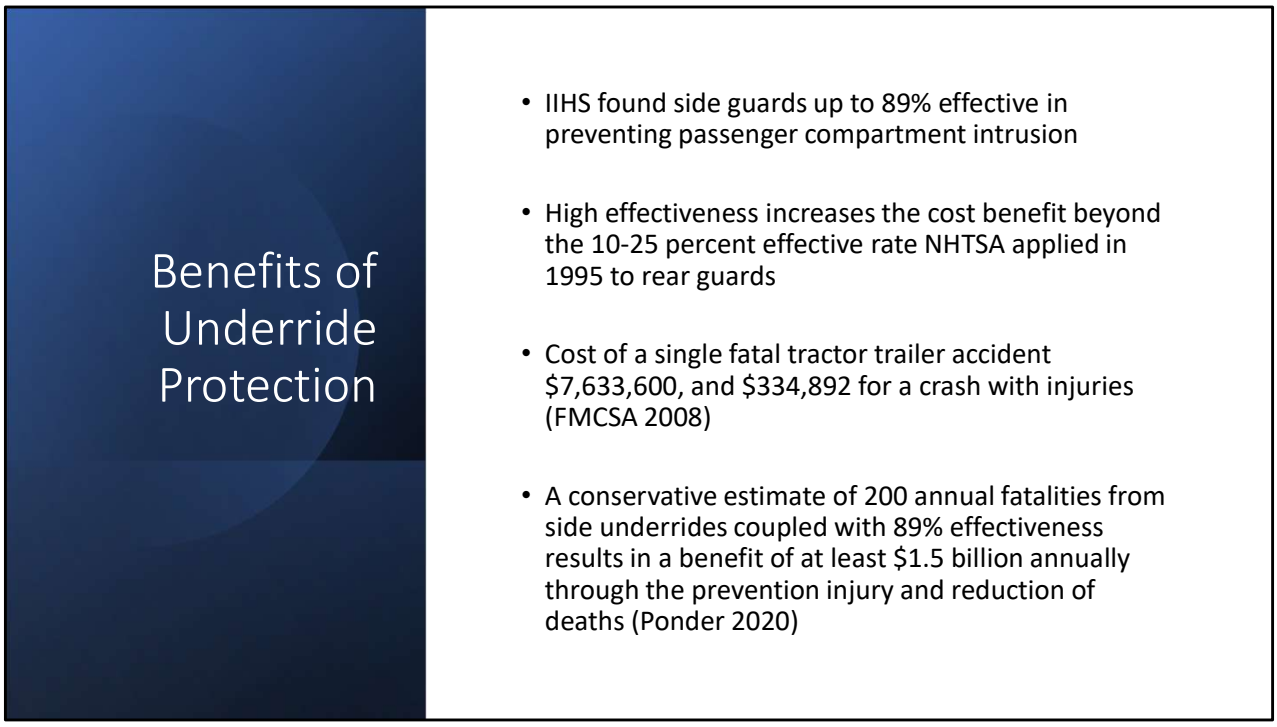
Docket Section
National Highway Traffic Safety Administration
Room 5109
400 Seventh Street SW
Washington, DC 20590

Re: Docket 1-11 Rear Impact Guards

On August 10, 2005, we forwarded to the Agency for consideration in the above-referenced Docket a report prepared by L. Robert Shelton entitled "Potential Costs, Safety Benefits, and Cost-Effectiveness of Side Impact Guards for Truck Trailers."

The TTMA hired a former NHTSA official, Robert Shelton, to create a report that included a bogus cost-benefit analysis of a hypothetical Federal side underride guard requirement. This report contains faulty and misleading analysis of crash speeds and undercounts underride fatalities to provide a shaky foundation for Shelton's analysis of the benefits of side underride guards. The Shelton Report was submitted to NHTSA in 2006 during a public comment period on rear guards. They have continued to submit the erroneous Shelton (2006) report on multiple occasions during public comments,

and its members have attempted to use the report in defending lawsuits, to create the appearance that side underride guards would create an unjustifiable economic burden on the trucking industry (please see the review in Sievers 2020). Therefore, because the unpublished Shelton report (2006) contains misleading information such as only 5 lives would be saved by SUGs and conclusions, such as the cost per life saved would be $46 million. We are asking NHTSA to discontinue relying on it for any cost-benefit analyses concerning rear, front, or side underride guards.



In 2020, Perry Ponder submitted comments and information to you regarding effectiveness of side underride guards and cost benefits of the guards. He detailed that guards were 89 percent effective in preventing passenger compartment intrusion. This is much greater than the 10-25 percent effective rate used by NHTSA in a 1995 analysis on rear guards. Consider that the FMCSA calculated single fatal tractor trailer accident $7,633,600, and $334,892 for a crash with injuries. Using some simple math with the low-ball industry estimate of 200 annual fatalities from side underride and the effective rate of 89 percent, achieves a benefit of $1.5 billion through the prevention injury and reduction of deaths. This cost benefit does not include any of the following input.

Cost of purchasing and maintaining underride protection should be appropriately compared to benefits:

- Lives saved (use of a range of underride fatality estimates)
- VSL recently updated to $11.6 million
- Catastrophic injuries prevented (short-term medical costs to lifetime disability)
- Truck driver benefits (e.g., avoid PTSD, negative impact on their career, and jail time)
- Financial impact of a lost family member
- Fuel efficiency leading to reduced operational costs
- Job creation from mass production of safety equipment
- Less damage to structural integrity of trailers, including the protection of fuel tanks and reduced fiery crashes
- Less time to conduct crash investigations without fatalities involved
  - ✓ Truck drivers quickly get back on the road
  - ✓ Shorter traffic back-ups
- Decreased potential for lawsuits

Questions?


Forever Loved, Always Missed
RILEY ERIC HEIN
1999-2015
"We didn't realize we were making memories,
we just knew we were having fun"
Winnie the Pooh