Public Comment on 2020-27502:
Parts and Accessories Necessary for Safe Operation;
Rear Impact Guards and Rear Impact Protection

First of all, we want to thank you for taking the step of issuing a proposed rule to ensure that Rear Impact Guards are properly maintained. By doing so, you have acknowledged the importance of this safety device in protecting the lives of motorists traveling in the vicinity of commercial motor vehicles.

The simple act of including underride guards in Appendix G will hopefully, in and of itself, have a far-reaching effect. However, we want to take this opportunity to make some additional observations.

The **Purpose and Summary** section of the proposed rule indicates that, "The FMCSRs require that all CMVs be systematically inspected, repaired, and maintained to ensure that all required parts and accessories -- including rear impact guards-- are in safe and operating condition at all times." And the **History of Appendix G Requirements** mentions that "FHWA adopted new section 396.17 on December 7, 1988, which requires all CMVs to be inspected at least once every 12 months. . ." Actually, FMC Safety Regulation 396.11 states this (pdf attached):

> **§396.11 Driver vehicle inspection report(s).**
>
> (a) *Equipment provided by motor carrier.* (1) *Report required.* Every motor carrier shall require its drivers to report, and every driver shall prepare a report in writing at the completion of each day's work on each vehicle operated, except for intermodal equipment tendered by an intermodal equipment provider. The report shall cover at least the following parts and accessories:

1. *(i) Service brakes including trailer brake connections;*
2. *(ii) Parking brake;*
3. *(iii) Steering mechanism;*
4. *(iv) Lighting devices and reflectors;*
5. *(v) Tires;*
6. *(vi) Horn;*
7. *(vii) Windshield wipers;*
8. *(viii) Rear vision mirrors;*
9. *(ix) Coupling devices;*
10. *(x) Wheels and rims;*
11. *(xi) Emergency equipment.*

So, as we requested in our petition, in addition to Appendix G, *Rear Impact Guards* should also be included in all appropriate sections of the Federal Motor Carrier Safety Regulations -- or, to avoid the need for future updates, simply list "Underride protective equipment, as required." [*"The Karths' petition requested that FMCSA 'Add underride guards to Appendix G and 396.17 (Periodic Inspection),' but did not provide any supporting information."*]

Furthermore, in addition to a post trip inspection, corrective action is also required: (*3) **Corrective action**. (i) Prior to requiring or permitting a driver to operate a vehicle, every motor carrier or its agent shall repair any defect or deficiency listed on the driver vehicle inspection report which would be likely to affect the safety of operation of the vehicle.*

Section V. DISCUSSION OF PROPOSED RULEMAKING, **A. Rear Impact Guards in Appendix G**, mentions our request for FMCSA to change the definition of Out-of-Service Criteria to reflect the fact that a Rear Impact Guard in disrepair might not ***cause*** a breakdown or collision but it could ***cause*** more severe injuries or death in the event of a collision. FMCSA indicated that the North American Standard Out-of-Service Criteria are developed and maintained by CVSA and are not part of the FMCSR.

However, it should be noted that the FMCSA *could* appropriately make a revision to emphasize the importance of underride protection in 396.7:

> **§396.7 Unsafe operations forbidden.**
>
> (a) *General.* A motor vehicle shall not be operated in such a condition as to likely cause an accident or a breakdown of the vehicle.
>
> (b) *Exemption.* Any motor vehicle discovered to be in an unsafe condition while being operated on the highway may be continued in operation only to the nearest place where repairs can safely be effected. Such operation shall be conducted only if it is less hazardous to the public than to permit the vehicle to remain on the highway.

This could be revised to read:

> (a) *General.* A motor vehicle shall not be operated in such a condition as to likely cause an accident or a breakdown of the vehicle, or to allow death and/or injuries due to passenger vehicle underride upon collision.

In addition, the ***FMCSR Pocketbook*** should likewise be updated to include underride in ***Subpart G*** -- ***Required Knowledge and Skills*** for all drivers of CMVs. ***Section 383.11*** ***Required Knowledge*** should include underride hazards and equipment.

We are grateful to see that, despite past actions based upon assumption of regular voluntary maintenance of Rear Impact Guards, FMCSA is now taking steps to make it a specific requirement.

> "FMCSA assumes that the majority of motor carriers currently inspect rear impact guards annually despite the absence of an explicit requirement to do so in Appendix G. According to FMCSA's Motor Carrier Management Information System (MCMIS), out of approximately 5.8 million regulatory violations identified during inspections in 2017, only approximately 2,400--or about 0.041 percent--were rear impact guard violations."

If we're going to assume that "they" would inspect rear guards, then we might as well assume that they will inspect other required equipment as well. In that case, Appendix G -- with its listing of *i) Service brakes including trailer brake connections; (ii) Parking brake; (iii) Steering mechanism; (iv) Lighting devices and reflectors; (v) Tires; (vi) Horn; (vii) Windshield wipers; (viii) Rear vision*

mirrors; (ix) Coupling devices; (x) Wheels and rims; (xi) Emergency equipment -- would be unnecessary.

It is ill-advised to make assumptions about a life & death matter. From our experience, we have found that the majority of Americans, including truck drivers, police officers, and government officials, were not fully aware of the nature of underride and thus the important function of the RIG. That being the case, then they are not likely to make it a priority to properly inspect or maintain the RIG -- especially since it is not on the Vehicle Inspection Checklist (which clearly takes its cue from Appendix G).

ANNUAL VEHICLE INSPECTION REPORT

VEHICLE HISTORY RECORD	
REPORT NUMBER	FLEET UNIT NUMBER
DATE	

MOTOR CARRIER OPERATOR	INSPECTOR'S NAME (PRINT OR TYPE)
ADDRESS	THIS INSPECTOR MEETS THE QUALIFICATION REQUIREMENTS IN SECTION 396.19. ☐ YES
CITY, STATE, ZIP CODE	VEHICLE IDENTIFICATION (✓ AND COMPLETE) ☐ LIC. PLATE NO. ☐ VIN ☐ OTHER
VEHICLE TYPE ☐ TRACTOR ☐ TRAILER ☐ TRUCK ☐ BUS ☐ (OTHER)	INSPECTION AGENCY/LOCATION (OPTIONAL)

VEHICLE COMPONENTS INSPECTED

OK	NEEDS REPAIR	REPAIRED DATE	ITEM
			1. BRAKE SYSTEM
			a. Service Brakes
			b. Parking Brake System
			c. Brake Drums or Rotors
			d. Brake Hose
			e. Brake Tubing
			f. Low Pressure Warning Device
			g. Tractor Protection Valve
			h. Air Compressor
			i. Electric Brakes
			j. Hydraulic Brakes
			k. Vacuum Systems
			2. COUPLING DEVICES
			a. Fifth Wheels
			b. Pintle Hooks
			c. Drawbar/Towbar Eye
			d. Drawbar/Towbar Tongue
			e. Safety Devices
			f. Saddle-Mounts
			3. EXHAUST SYSTEM
			a. Exhaust system leaking forward of or directly below the driver/sleeper compartment.
			b. Bus exhaust system leaking or discharging in violation of standard.
			c. Exhaust system likely to burn, char, or damage the electrical wiring, fuel supply, or any combustible part of the motor vehicle.
			4. FUEL SYSTEM
			a. Visible leak.
			b. Fuel tank filler cap missing.
			c. Fuel tank securely attached.
			5. LIGHTING DEVICES
			All lighting devices and reflectors required by Part 393 shall be operable.

OK	NEEDS REPAIR	REPAIRED DATE	ITEM
			6. SAFE LOADING
			a. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall onto the roadway.
			b. Protection against shifting cargo.
			c. Container securement devices on intermodal equipment.
			7. STEERING MECHANISM
			a. Steering Wheel Free Play
			b. Steering Column
			c. Front Axle Beam and All Steering Components Other Than Steering Column
			d. Steering Gear Box
			e. Pitman Arm
			f. Power Steering
			g. Ball and Socket Joints
			h. Tie Rods and Drag Links
			i. Nuts
			j. Steering System
			8. SUSPENSION
			a. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position.
			b. Spring Assembly
			c. Torque, Radius or Tracking Components
			9. FRAME
			a. Frame Members
			b. Tire and Wheel Clearance
			c. Adjustable Axle Assemblies (Sliding Subframes)

OK	NEEDS REPAIR	REPAIRED DATE	ITEM
			10. TIRES
			a. Tires on any steering axle of a power unit.
			b. All other tires.
			11. WHEELS AND RIMS
			a. Lock or Side Ring
			b. Wheels and Rims
			c. Fasteners
			d. Welds
			12. WINDSHIELD GLAZING
			Requirements and exceptions as stated pertaining to any crack, discoloration or vision reducing matter (reference 393.60 for exceptions).
			13. WINDSHIELD WIPERS
			Any power unit that has an inoperative wiper, or missing or damaged parts that render it ineffective.
			14. OTHER
			List any other condition(s) which may prevent safe operation of this vehicle.

INSTRUCTIONS: MARK COLUMN ENTRIES TO VERIFY INSPECTION: ✓ OK, X NEEDS REPAIR, NA IF ITEMS DO NOT APPLY, _____ REPAIRED DATE

CERTIFICATION: THIS VEHICLE HAS PASSED ALL THE INSPECTION ITEMS FOR THE ANNUAL VEHICLE INSPECTION IN

As to the reportedly low numbers of rear impact guard violations, again, if it is not on the checklist, then one would naturally not *expect* to see violations issued consistently by inspectors, who have not previously been charged or encouraged to inspect them.

The proposed rule, in **Section V. DISCUSSION OF PROPOSED RULEMAKING, A. Rear Impact Guards in Appendix G**, refers to the August 27, 2018 petition from CVSA. FMCSA includes a quote from that petition:

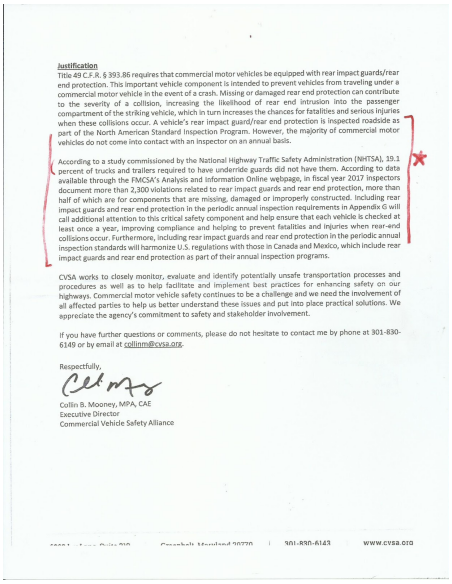
The petition stated:
"A vehicle's rear impact guard/rear end protection is inspected roadside as part of the North American Standard Inspection Program. However, the majority of commercial motor vehicles do not come into contact with an inspector on an annual basis…

"According to data available through FMCSA's Analysis and Information Online webpage, in fiscal year 2017 inspectors document[ed] more than 2,300 violations related to rear impact guards and rear end protection, more than half of which are for components that are missing, damaged or improperly constructed. Including rear impact guards and rear end protection in the periodic inspection requirements in Appendix G will call additional attention to this critical safety component and help ensure that each vehicle is checked at least once a year, improving compliance and helping to prevent fatalities and injuries when rear-end collisions occur. Furthermore, including rear impact guards and rear end protection in the periodic annual inspection standards will harmonize U.S. regulations with those in Canada and Mexico, which include rear impact guards and rear end protection as part of their annual inspection programs."

However, in the above quote, the proposed rule *leaves out* one very telling sentence, from the CVSA petition, which appears immediately after the ellipsis:

"According to a study commissioned by the National Highway Traffic Safety Administration (NHTSA), 19.1 percent of trucks and trailers required to have underride guards did not have them."

We do not know when this study was conducted. Nonetheless, it is disturbing that this statistical red flag apparently did not catalyze agency action to address a glaring lack of adherence to a decades-old safety regulation -- no matter when the study was completed (apparently some time prior to 2018).



Justification
Title 49 C.F.R. § 393.86 requires that commercial motor vehicles be equipped with rear impact guards/rear end protection. This important vehicle component is intended to prevent vehicles from traveling under a commercial motor vehicle in the event of a crash. Missing or damaged rear end protection can contribute to the severity of a collision, increasing the likelihood of rear end intrusion into the passenger compartment of the striking vehicle, which in turn increases the chances for fatalities and serious injuries when these collisions occur. A vehicle's rear impact guard/rear end protection is inspected roadside as part of the North American Standard Inspection Program. However, the majority of commercial motor vehicles do not come into contact with an inspector on an annual basis.

According to a study commissioned by the National Highway Traffic Safety Administration (NHTSA), 19.1 percent of trucks and trailers required to have underride guards did not have them. According to data available through the FMCSA's Analysis and Information Online webpage, in fiscal year 2017 inspectors document more than 2,300 violations related to rear impact guards and rear end protection, more than half of which are for components that are missing, damaged or improperly constructed. Including rear impact guards and rear end protection in the periodic annual inspection requirements in Appendix G will call additional attention to this critical safety component and help ensure that each vehicle is checked at least once a year, improving compliance and helping to prevent fatalities and injuries when rear-end collisions occur. Furthermore, including rear impact guards and rear end protection in the periodic annual inspection standards will harmonize U.S. regulations with those in Canada and Mexico, which include rear impact guards and rear end protection as part of their annual inspection programs.

CVSA works to closely monitor, evaluate and identify potentially unsafe transportation processes and procedures as well as to help facilitate and implement best practices for enhancing safety on our highways. Commercial motor vehicle safety continues to be a challenge and we need the involvement of all affected parties to help us better understand these issues and put into place practical solutions. We appreciate the agency's commitment to safety and stakeholder involvement.

If you have further questions or comments, please do not hesitate to contact me by phone at 301-830-6149 or by email at collinm@cvsa.org.

Respectfully,

Collin B. Mooney, MPA, CAE
Executive Director
Commercial Vehicle Safety Alliance

Following the discussion of the CVSA petition, the proposed rule states that, beyond our November 1, 2018 petition, we *did not provide any supporting information*:

"The Karths' petition requested that FMCSA 'Add underride guards to Appendix G and 396.17 (Periodic Inspection),' but did not provide any supporting information."

Nothing could be further from the truth. In addition to numerous other Public Comments and communications with FMCSA, NHTSA, and DOT officials, on May 15, 2018 (AnnaLeah's birthday), we emailed FMCSA administrators with detailed information about rear guard maintenance recommendations.

Regarding **Rear Impact Guard Labeling**, while the placement of the label either on the forward- or rearward-facing surface of the horizontal member of the guard will not impact the *function* of the guard itself, giving the label better *visibility* to the truck driver and owner could influence their attentiveness to the guard's condition. After all, the message clearly warns of its importance:

Failure to comply with Federal Motor Vehicle Safety Act Standards FMVSS 223/224 (US) or FMVSS 223 (Canada) could result in injury to occupants of another vehicle in the event of a rear end collision with the trailer which, if not avoided, could result in death or serious injury.

Should this be out of sight or in clear view?

VIII Regulatory Analyses . . . "The Agency does not expect this proposed rule to result in incremental costs or **benefits** beyond the baseline established in the FMCSRs." *Actually*, there *are* benefits which may occur from the RIGs being properly maintained. The IIHS has proven that the RIGs which were designed by the eight major U.S. trailer manufacturers to meet the 1998 federal standard were too weak to prevent underride at the outer edges of the guard. However, if a passenger vehicle strikes a trailer at the center of the RIG, it has a better chance of performing as intended. However, an improperly maintained RIG is likely to be weakened and might not perform successfully. Thus, keeping RIGs properly maintained may lead to more lives being saved than if they are *not* properly maintained. That's a *benefit*.

D. Assistance for Small Entities "In accordance with section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996, FMCSA wants to assist small entities in understanding this proposed rule so that they can better evaluate its effects on themselves and participate in the rulemaking initiative. . . Small business may send comments on the actions of Federal employees who enforce or otherwise determine compliance with Federal regulations to the Small Business Administration's Small Business and Agriculture Regulatory Enforcement **Ombudsman** and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business."

It is our observation that crash victims or their loved ones would benefit from the establishment of an **Office of National Traffic Safety Ombudsman** to provide them with an equivalent opportunity to raise concerns about how agencies respond to traffic safety issues. The lack of a reliable, transparent and accountable advocate specifically for crash victims is concerning --

especially because FMCSA and NHTSA have Safety included in their names and mission statements which include saving lives and reducing crashes, injuries and fatalities.

I. Executive Order 13045 (Protection of Children) "Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997), requires agencies issuing 'economically significant' rules, if the regulation also concerns an environmental health or safety risk that an agency has reason to believe may disproportionately affect children, to include an evaluation of the regulation's environmental health and safety effects on children."

While it may not disproportionately impact children, children are definitely at risk of underride. For example, if a parent swerves to avoid rear-ending a truck, they may actually be putting their child in a passenger seat at greater risk if they are unable to completely avoid collision, as in this tragic Texas crash 8-year-old child killed in crash on FM 41 (January 2, 2020).

O. National Technology Transfer and Advancement Act (Technical Standards) *"The National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note) directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards (e.g., specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) are standards that are developed or adopted by voluntary consensus standards bodies."*

This directive to utilize voluntary consensus standards should be applied to the final section of the proposed rule:

5 Amend Appendix G to Subchapter B of Chapter III by adding Section 15 as follows:

Appendix G to Subchapter B of Chapter III - Minimum Periodic Inspection Standards
15. Rear Impact Guard a. Trailers and semitrailers with a GVWR of 4,536 kg (10,000 lbs) or more, manufactured on or after January 26, 1998 (see exceptions in § 393.86(a)(1)). 1. Missing guard. 2. Guard is not securely attached to trailer. 3. Guard does not extend to within 100 mm (4 inches) of each side extremity of the vehicle, and not beyond. 4. Guard is more than 560 mm (22 inches) above the ground. 5. Guard is more than 305 mm (12 inches) forward of the rear extremity of the vehicle. 6. Guard does not have a cross sectional vertical height of at least 100 mm (4 inches) across its entire width. b. Commercial motor vehicles manufactured after December 31, 1952 (except trailers and semitrailers manufactured on or after January 26, 1998) (see exceptions in § 393.86(b)(1) and § 393.86(b)(3)). 1. Missing guard 2. Guard is not securely attached to trailer by bolts, welding, or other comparable means. 3. Guard is more than 762 mm (30 inches) above the ground. 4. Guard does not extend to within 457 mm (18 inches) of each side extremity of the vehicle. 5. Guard is more than 610 mm (24 inches) forward of the rear extremity of the vehicle.

In response to that, first of all, we are grateful that this Section is being added to Appendix G after so many years of being excluded. However, there are actually technical standards or ***Best Practices Recommendations for Maintenance of Rear Underride Guards*** from the ATA TMC Engineering Committee which were not referred to in the rulemaking. They should be. Particularly because this issue has been overlooked for decades, this section of Appendix G should be more detailed as to what inspectors, including truck drivers in their pre-trip inspections and post trip reports, should be looking for. This is not *cosmetic*. This is life & death.

How does one determine if a guard is in disrepair? This has been spelled out by the Technology and Maintenance Council of the American Trucking Associations in their Recommended Practice (RP) 732, VMRS 077, Trailer Rear Impact Guard Repair Guidelines:

Rear impact guards should be regularly inspected for cracked welds, cracked or fractured vertical members. Cuts and tears in any member for dimensional integrity. This includes:

- *cracked welds*
- *cracked or fractured vertical members, including any additional bracing added by the manufacturer such as diagonal struts running from the center of the horizontal member to the vertical supports*
- *cracked or loose fasteners joining the RIG members together*
- *cracked or loose fasteners attaching the RIG to the trailer sill]*
- *bends in any member*
- *corrosion/rust in any RIG member and the trailer sill*
- *cuts, punctures, and tears in any member*
- *proper attachment to the trailer sill*
- *rear cross members*
- *rear trailer sill and at least the last six feet of the floor*
- *and for dimensional and overall structural integrity.*

Those sound like useful criteria for making sure that underride guards are in good shape. Do they not need to be included in Appendix G?

Please refer to these documents for further information on that:

1. Proper Maintenance of Underride Guards Can Spell the Difference Between L-i-f-e & D-e-a-t-h
2. Trailer Maintenance Tips
3. Trailer Rear Impact Guard Repair Guidelines

In addition, we'd like to bring up another matter related to maintenance and inspection of Rear Impact Guards. The Insurance Institute for Highway Safety proved that the Rear Impact Guards of the eight major U.S. trailer manufacturers -- although they were designed to meet the federal standard -- were too weak to prevent underride in 30% offset crashes. Would it not make sense,

then, for guards that are in need of repair to be replaced with *an updated version* which has been proven to prevent underride, i.e., which meets the IIHS TOUGHGuard level of strength?

Thankfully, there *are* stronger Rear Impact Guard retrofit solutions available. This is what we know:

- **Great Dane Trailers** has a retrofit solution.
- **Stoughton Trailers** has a retrofit kit.
- **Utility Trailers** aftermarket sells only the current production horizontal bumper as a replacement for any damaged Utility bumper.
- **Vanguard Trailers** and **Manac Trailers** have the improved guard available for sale.
- We don't have information about retrofit options for the other trailer manufacturers.
- **TrailerGuards** offers a ***generic*** Rear Impact Guard (RIG) Retrofit out of aluminum which can be installed on most any model of trailer.

Why would we encourage or allow an opportunity to improve safety (i.e., give someone a chance to make it home) to be thrown away?

III LEGAL BASIS FOR THE RULEMAKING 1984 Act *requires the Secretary to prescribe regulations on commercial motor vehicle **safety**. . .*
https://www.transportation.gov/content/motor-carrier-safety-act
https://www.congress.gov/bill/98th-congress/senate-bill/2174
This applies to not only maintaining the RIG in like new condition in order to preserve its function -- prevention of deadly underride -- but for **other issues which need rulemaking as well to prevent deadly underride through other aspects of underride protection**.

Underride is not a problem which merely occurs at the rear of trailers. The basic problem of a geometric mismatch between the bottom of large vehicles and the lower bumpers of passenger vehicles exists all around the larger vehicle. It, therefore, is a problem which requires a ***comprehensive*** solution. To do otherwise is to belittle the life-threatening hazard.

Underride can also be prevented by addressing:

1. Side underride
2. Front underride/override
3. Underride involving Single Unit Trucks

In fact, on September 3, 1969, Congressman Vanik spoke to Congress and made noteworthy comments about underride protection, including the inadequacy of the proposed regulation for **rear underride** and the absence of regulations for smaller **straight trucks**, as well as protection on the **sides** and **front** of trucks.

Injuries due to underride, and the resultant intrusion into occupant survival space, are often the cause of catastrophic injuries and death in truck crashes. With that in mind, we are petitioning

that a study of this nature -- ***It's not the crash that kills, it's the underride*** -- be included in the upcoming joint FMCSA & NHTSA *Large Truck Crash Causation Study* in order to give further documentation to any future judgment about whether underride rulemaking is **warranted**.

We are also once more petitioning the Secretary of Transportation to proceed with comprehensive underride rulemaking and take advantage of the expertise of an Advisory Committee On Underride Protection. In fact, attachments are provided for both an advisory committee and a Petition for Supplemental Comprehensive Underride Rulemaking.

Respectfully submitted by
Jerry and Marianne Karth
January 9, 2021

*In order to raise awareness and preserve the memories of underride victims — **precious ones gone too soon** — I have been writing memorial posts on what appear to me to be underride crashes. I am not a crash reconstructionist, and I do not have all the facts on these crashes; but underride should be investigated as a potential factor in truck crash injuries and deaths.*

This is not an exhaustive list — merely the tip of the iceberg. But I hope that it serves to demonstrate the ongoing nature of a preventable public safety problem.

You can find these Underride Crash Memorial posts here. Marianne Karth