Underride Research Presentation to NHTSA

Including reports from a Side Guard Task Force Meeting

YouTube video of meeting

Spring 2021

On July 10, 2014, NHTSA responded to part of the petition – for improved rear protection on trailers and for single unit trucks.

FMCSA
Federal Motor Carrier Safety Administration

Search FMCSA site GO

About Us | Regulations | Registration | Safety | Analysis | News | FAST Act

- Regulations
- Search Regulations
- Rulemaking Documents
- Notices
- Regulatory Enforcement
- Disclaimer

Federal Motor Vehicle Safety Standards; Rear Impact Guards, Rear Impact Protection

Action:
Grant of petition for rulemaking.

Summary:
By initiating rulemaking to consider enhancing related safety standards, this notice grants the part of the petition for rulemaking submitted by Ms. Marianne Karth and the Truck Safety Coalition (Petitioners) requesting that the agency improve the safety of rear impact (underride) guards on trailers and single unit trucks. Based on the petition, available information, and the agency's analysis in progress, NHTSA has decided that the Petitioners' request related to rear impact guards merits further consideration. Therefore, the agency grants the Petitioners' request to initiate rulemaking on rear impact guards. NHTSA is planning on issuing two separate notices--an advanced notice of proposed rulemaking pertaining to rear impact guards and other safety strategies for single unit trucks, and a notice of proposed rulemaking focusing on rear impact guards on trailers and semitrailers. NHTSA is still evaluating the Petitioners' request to improve side guards and front override guards and will issue a separate decision on those aspects of the petition at a later date.

View PDF

Authority:

Details

Published Date:
07/10/2014

Effective Date:
N/A

Comment By:
N/A

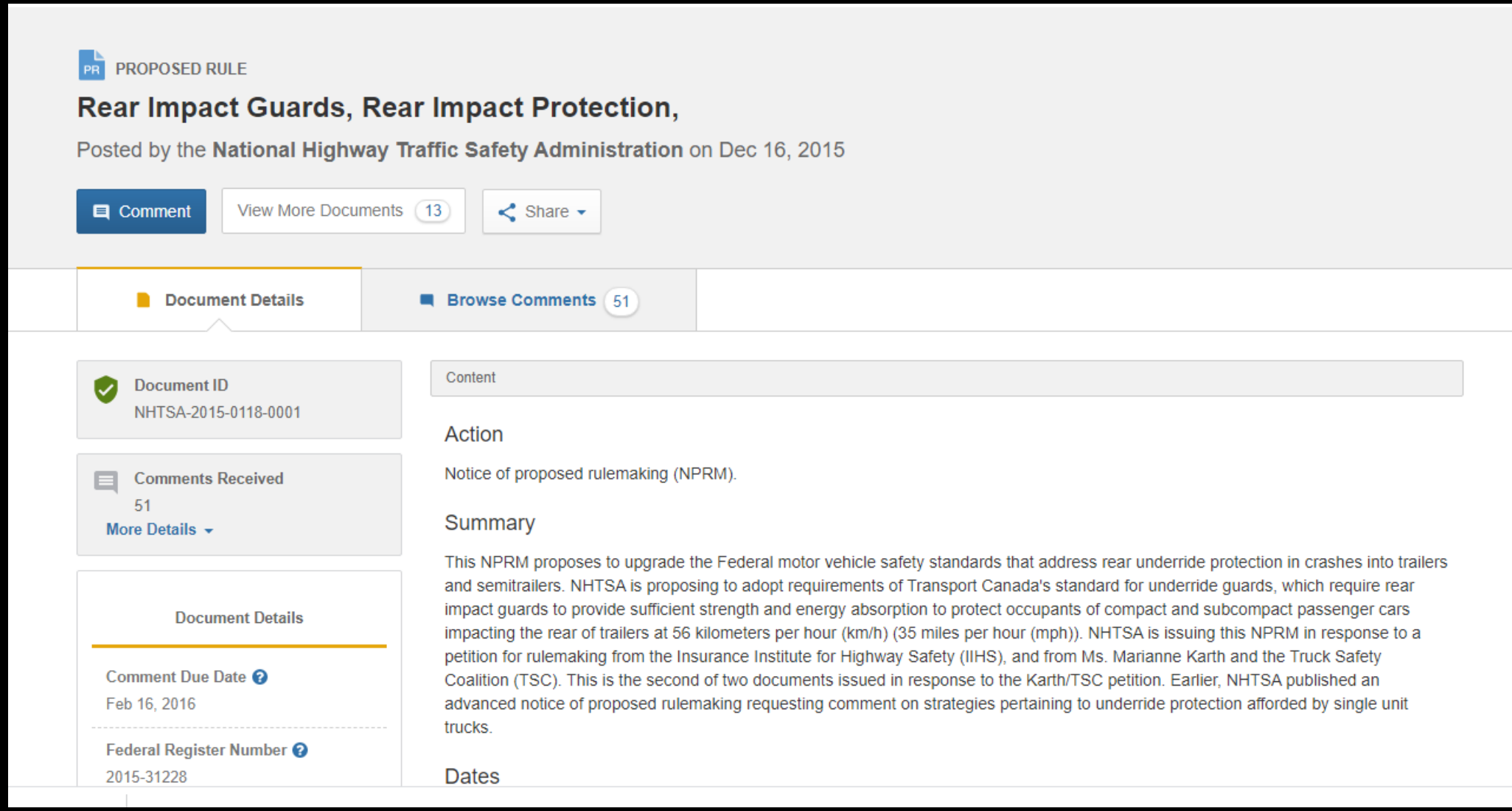
Federal Register:
2014-16018

RIN:
N/A

Docket Number:
NHTSA-2014-0080

CFR Part:
571

The Proposed Rule for Rear Impact Guards on trailers was issued on December 16, 2015. A Final Rule has not yet been issued.



PROPOSED RULE

Rear Impact Guards, Rear Impact Protection,

Posted by the **National Highway Traffic Safety Administration** on Dec 16, 2015

Comment | View More Documents 13 | Share

Document Details | Browse Comments 51

Document ID
NHTSA-2015-0118-0001

Comments Received
51
More Details

Document Details

Comment Due Date
Feb 16, 2016

Federal Register Number
2015-31228

Content

Action

Notice of proposed rulemaking (NPRM).

Summary

This NPRM proposes to upgrade the Federal motor vehicle safety standards that address rear underride protection in crashes into trailers and semitrailers. NHTSA is proposing to adopt requirements of Transport Canada's standard for underride guards, which require rear impact guards to provide sufficient strength and energy absorption to protect occupants of compact and subcompact passenger cars impacting the rear of trailers at 56 kilometers per hour (km/h) (35 miles per hour (mph)). NHTSA is issuing this NPRM in response to a petition for rulemaking from the Insurance Institute for Highway Safety (IIHS), and from Ms. Marianne Karth and the Truck Safety Coalition (TSC). This is the second of two documents issued in response to the Karth/TSC petition. Earlier, NHTSA published an advanced notice of proposed rulemaking requesting comment on strategies pertaining to underride protection afforded by single unit trucks.

Dates

On July 23, 2015, NHTSA issued an ANPRM for Rear Underride Protection on Single Unit Trucks.

The Fall 2020 Regulatory Agenda includes this Rule – indicating that it is to be withdrawn because it is not cost-justified. But there is no actual date of withdrawal.

OFFICE of MANAGEMENT and BUDGET
EXECUTIVE OFFICE OF THE PRESIDENT
Reginfo.gov
Services Administration GSA
Search: Agenda Reg Review ICR
Go
Home | Unified Agenda | Regulatory Review | Information Collection Review | FAQs / Resources | Contact Us

View Rule

View EO 12866 Meetings | Printer-Friendly Version | Download RIN Data in XML

DOT/NHTSA **RIN:** 2127-AL57 **Publication ID:** Fall 2020

Title: +Retroreflective Tape and Underride Guards for Single Unit Trucks

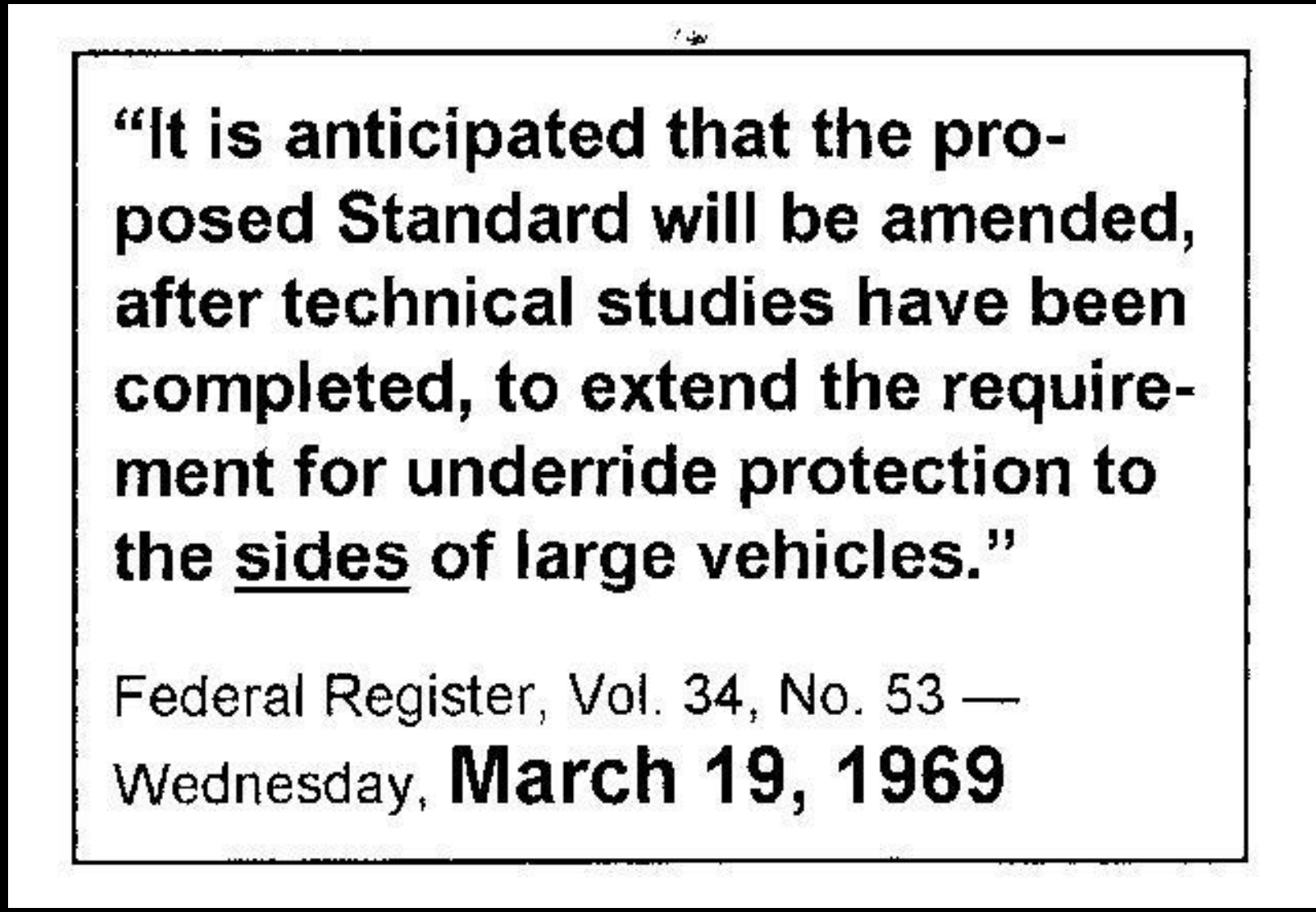
Abstract: NHTSA withdraws its July 23, 2015 Advanced Notice of Proposed Rulemaking (ANPRM) that responded in part to a petition for rulemaking regarding possible amendments to the Federal motor vehicle safety standards (FMVSSs) relating to rear underride guards. The ANPRM requested comment on NHTSA's analysis of the costs and benefits of amending the FMVSS to single unit trucks (SUTs) either to be equipped with improved rear underride guards or with retroreflective tape to improve visibility to other drivers. NHTSA has determined based on the comments received, as well as further agency analysis of the petitions, that the changes considered in the ANPRM are not justified at this time.

Agency: Department of Transportation(DOT)
Priority: Economically Significant
RIN Status: Previously published in the Unified Agenda
Agenda Stage of Rulemaking: Prerule Stage
Major: Yes
Unfunded Mandates: No
EO 13771 Designation: Regulatory
CFR Citation: 49 CFR 571.108 49 CFR 571.223 49 CFR 571.224
Legal Authority: 49 USC 30111 49 USC 30115 49 USC 30117 49 USC 30166 49 USC 322 delegation of authority at 49 CFR 1.95
Legal Deadline: None
Timetable:

Action	Date	FR Cite
ANPRM	07/23/2015	80 FR 43663
ANPRM Comment Period End	09/21/2015	
Notice of Withdrawal	11/00/2020	

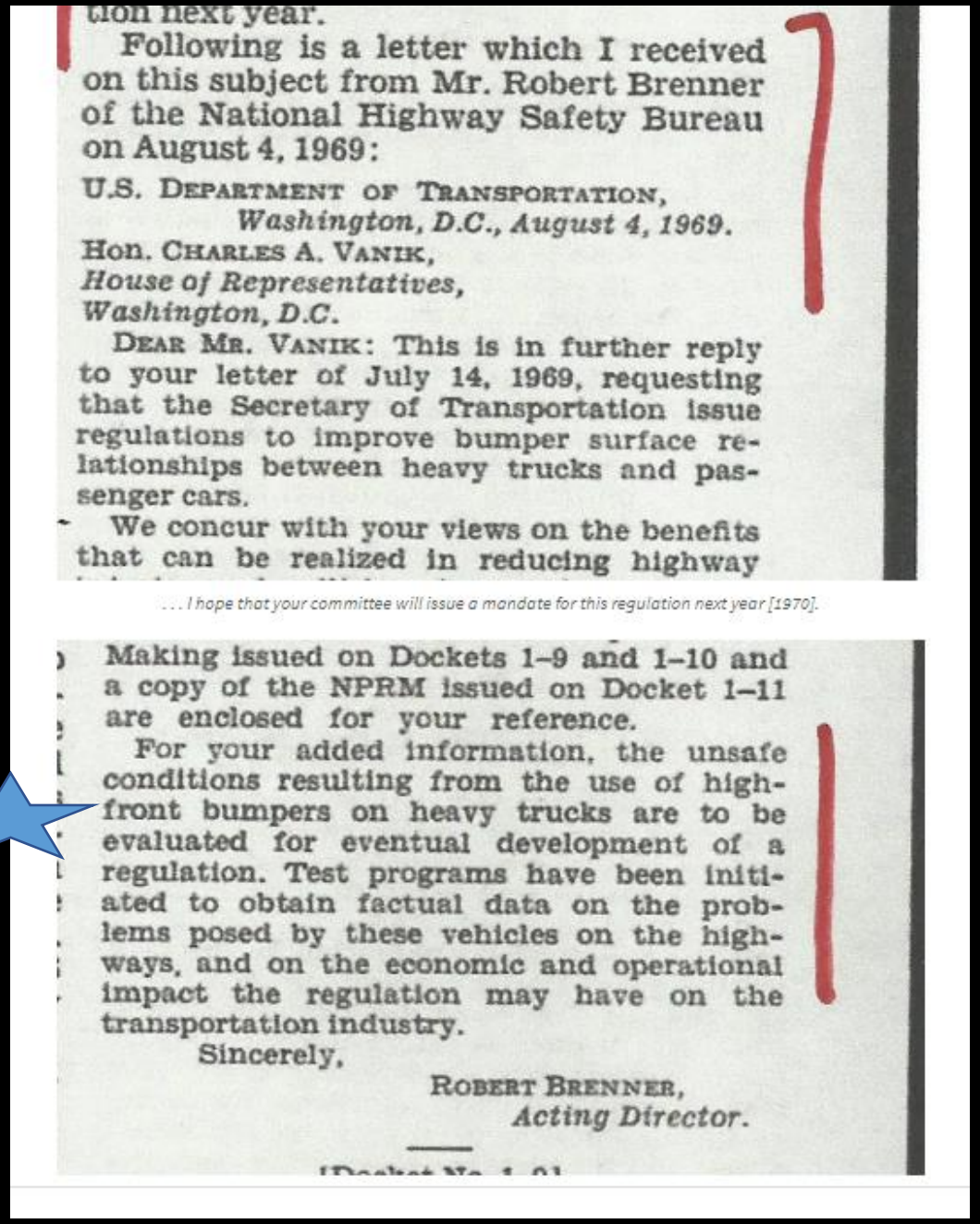
Regulatory Flexibility Analysis Required: Undetermined
Government Levels Affected: None
Small Entities Affected: Businesses
Federalism: No
Included in the Regulatory Plan: No
RIN Information URL: www.regulations.gov
Public Comment URL: www.regulations.gov
RIN Data Printed in the FR: No
Agency Contact:
Shashi Kuppa
Special Vehicles and Systems Division

Numerous technical studies have been completed on side underride, however, NHTSA still has not issued a decision on our 2013 and 2014 petitions for side guard rulemaking.


"It is anticipated that the proposed Standard will be amended, after technical studies have been completed, to extend the requirement for underride protection to the sides of large vehicles."

Federal Register, Vol. 34, No. 53 —
Wednesday, **March 19, 1969**

Despite discussion about the need for front underride protection by NHTSA in 1969, NHTSA still has not issued a decision on our 2013 and 2014 petitions for front underride protection rulemaking.



tion next year.

Following is a letter which I received on this subject from Mr. Robert Brenner of the National Highway Safety Bureau on August 4, 1969:

U.S. DEPARTMENT OF TRANSPORTATION,
Washington, D.C., August 4, 1969.

HON. CHARLES A. VANIK,
House of Representatives,
Washington, D.C.

DEAR MR. VANIK: This is in further reply to your letter of July 14, 1969, requesting that the Secretary of Transportation issue regulations to improve bumper surface relationships between heavy trucks and passenger cars.

We concur with your views on the benefits that can be realized in reducing highway

. . . I hope that your committee will issue a mandate for this regulation next year [1970].

Making issued on Dockets 1–9 and 1–10 and a copy of the NPRM issued on Docket 1–11 are enclosed for your reference.

For your added information, the unsafe conditions resulting from the use of high-front bumpers on heavy trucks are to be evaluated for eventual development of a regulation. Test programs have been initiated to obtain factual data on the problems posed by these vehicles on the highways, and on the economic and operational impact the regulation may have on the transportation industry.

Sincerely,

ROBERT BRENNER,
Acting Director.

A Century of Underride Research, Reports, and Recommendations

Underride Guard Patents

F. HAWKSWORTH.

SAFETY DEVICE FOR MOTOR VEHICLES.

APPLICATION FILED NOV. 10, 1913.

1,127,241. Patented Feb. 2, 1915.

Fig. 1.

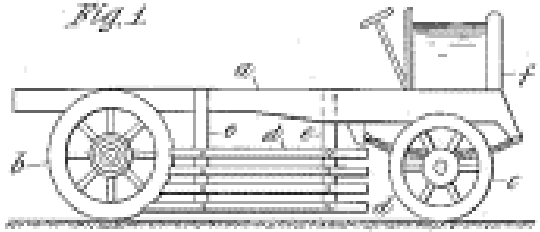


Fig. 2.

Fig. 5.

Fig. 3.

Fig. 4.

Witnesses:

Inventor

By James L. Norris

Attorney


CF17005


Prototype Side
Impact Guard


SAFETYSKIRT™
www.TrailerGuards.com

Fig. 6

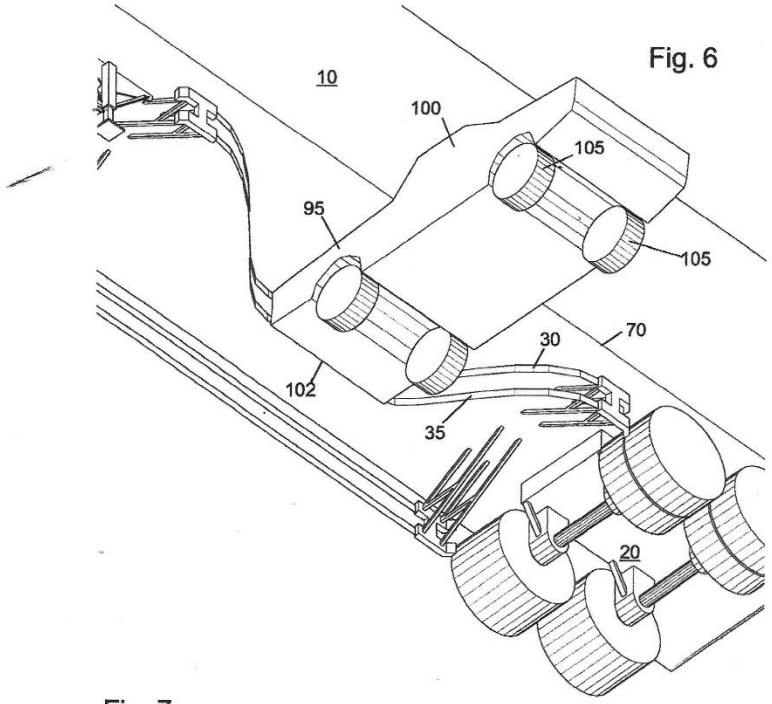
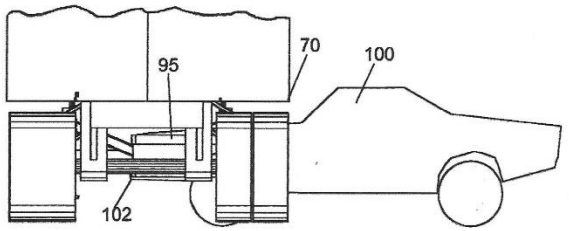


Fig. 7



U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA

DOT HS 812 522

April 2018

Computer Modeling and Evaluation Of Side Underride Protective Device Designs

2021-04-06

Protecting Passenger Vehicles from Side Underride with Heavy Trucks,

SAE Technical Paper presentation

A tractor-trailer, with and without side impact underride protection, was impacted by a passenger car and SUV under a range of impact conditions. Passenger vehicle intrusion metrics were calculated to provide an indication of relative risk for each impact condition. The results can support the development of side underride protection recommended practices.

Petition to Secretary Buttigieg for Supplemental Comprehensive Underride Rulemaking

Petition – February 4, 2021

NTSB has made recommendations to NHTSA calling for FRONT, SIDE, REAR underride protection for trailers and underride protection for Single Unit Trucks.

OPEN UNACCEPTABLE RESPONSES

4/30/2021

OPEN- UNACCEPTABLE RESPONSES (https://www.ntsb.gov/safety/mwl/Pages/mwl2017-safety-recs.aspx):

H-10-012	TO THE NHTSA: To improve highway vehicle crash compatibility, **develop performance standards** for **front underride protection systems** for trucks with gross vehicle weight ratings over 10,000 pounds. [This recommendation supersedes Safety Recommendation H-06-16]
H-10-013	TO THE NHTSA: After establishing performance standards for front underride protection systems for trucks with gross vehicle weight ratings over 10,000 pounds, **require that all such newly manufactured trucks be equipped with front underride protection systems** meeting the performance standards.
H-13-013	TO THE NHTSA: **Develop performance standards for side underride protection systems for single-unit trucks** with gross vehicle weight ratings over 10,000 pounds.
H-13-014	TO THE NHTSA: Once the performance standards requested in H-13-13 have been developed, **require newly manufactured single-unit trucks** with gross vehicle weight ratings over 10,000 pounds to be equipped with side underride protection systems meeting the performance standards.
H-13-015	TO THE NHTSA: **Develop performance standards for rear underride protection systems for single-unit trucks** with gross vehicle weight ratings over 10,000 pounds.
H-13-016	TO THE NHTSA: Once the performance standards requested in H-13-15 have been developed, **require newly manufactured single-unit trucks** with gross vehicle weight ratings over 10,000 pounds to **be equipped with rear underride protection systems** meeting the performance standards.
H-14-002	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: **Require that newly manufactured trailers** with gross vehicle weight ratings over 10,000 pounds **be equipped with side underride protection systems** that will reduce underride and injuries to passenger vehicle occupants.
H-14-003	TO THE NHTSA: **Require that newly manufactured truck-tractors** with gross vehicle weight ratings over 26,000 pounds **be equipped with side underride protection systems** that will reduce underride and injuries to passenger vehicle occupants.
H-14-004	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: **Revise requirements for rear underride protection systems for newly manufactured trailers** with gross vehicle weight ratings over 10,000 pounds to ensure that they provide adequate protection of passenger vehicle occupants from fatalities and serious injuries resulting from full-width and offset trailer rear impacts.

These petitions would be met by adopting three standards, and including *Single Unit Trucks* rather than exempting them:

- **IIHS TOUGHGuard Rear Standard**
- **Consensus Side Guard Standard**
- **UNECE-93 Front Underride Protection Standard**

We know from IIHS analysis of two-vehicle truck crash fatalities:

If in 2015 for example, 301 struck the side of the trailer and 292 struck the rear (for a total of 593 side + rear deaths) and there were 1,542 total crash deaths with tractor trailers, then how do you classify the remaining 949 deaths? Are they at the FRONT of the truck or UNKNOWN location? ***Almost all of the remainder are frontal crashes for the truck. A small number (~40) are unknown.***

How often does underride happen?

STATUS REPORT
INSURANCE INSTITUTE FOR HIGHWAY SAFETY

Vol. 27, No. 9 July 11, 1992

Death Count May Be Too Low

How often do cars and other passenger vehicles slide into and under the rear of big truck rigs, killing the people in the passenger vehicles? Underride crashes may happen more than twice as often as the National Highway Traffic Safety Administration (NHTSA) recognizes.

Institute researchers analyzing NHTSA data files have discovered that many states don't identify any fatal rear-end truck crashes as involving underride. These omissions lead researchers to conclude that many more deaths may be occurring in underrides than the average of 72 annually that NHTSA recognizes.

In California, for example, 24 percent of all 1989 passenger vehicle occupant deaths that occurred in rear-end truck and parked vehicle crashes are identified in NHTSA data files as involving underride. But, in 36 states and the District of Columbia, not a single one of the 400 passenger vehicle occupant deaths in such crashes is identified as involving underride. (See table on page 2.)

Institute researchers scrutinized police reports for the 1989 California crashes identified as underrides and verified them as such. "It's more than likely a coding problem that's keeping more crashes nationwide from being properly identified as underrides," says Institute President Brian O'Neill. Police reports don't always include enough information to determine whether individual crashes involve underride, so the crashes don't get coded as such in NHTSA's data system.

As many as 151 deaths in underride crashes may be occurring each year — not the 72 NHTSA recognizes — if the proportion of underride crashes in California holds true for the nation as a whole.

"If underrides are underreported, and it appears they are, then it's all the more reason to get on with federal rulemaking for improved underride guards," O'Neill says. NHTSA's recent proposal to require lower, stronger guards on truck trailers is the agency's sixth announced plan to upgrade a 1953 underride regulation that's still in force. Proposals were issued — then abandoned — in 1967, 1969, 1970, 1977, and 1981. (See *Status Report*, Vol. 27, No. 2, Feb. 8, 1992.)

Referring to the likely underreporting of underrides, the Institute says NHTSA should amend its data-gathering processes to more accurately identify such crashes. Plus, Institute researchers have identified the following shortcomings in NHTSA's proposed underride guard requirements:

Guards Too High The proposed 22-inch maximum ground clearance for rear underride guards is preferable to the 30 inches now allowed, but it's still way too high. It'll fail to prevent many underrides and won't take full advantage of automobile safety technology like air bags, the Institute says. A 20-year-old NHTSA

GEORGIA

Crash Year by Initial Impact Point on the Large Truck	Passenger Vehicle Compartment Intrusion?			Total
	Compartment	No	Compartment	
2011				
2012				
2013				
2014				
2015				
1994-2015				

This report was ge

file:///U:/_Eas

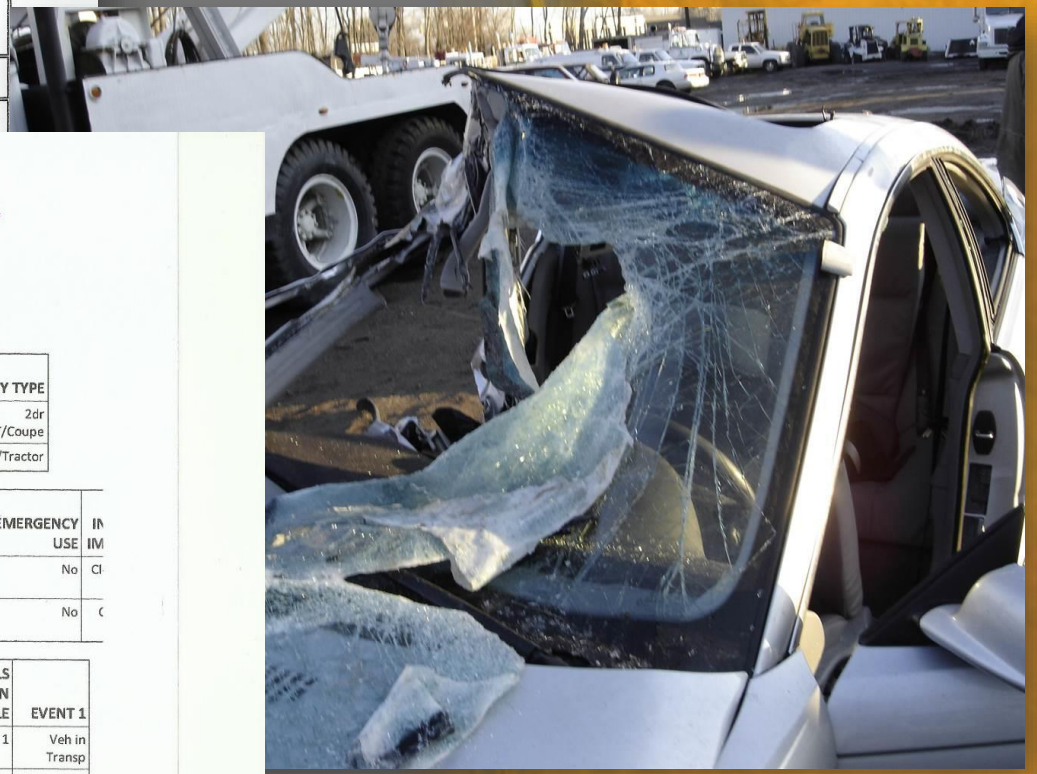
VARIABLE LISTING OF CASE # 130366 VEHICLE DATA FILE
FATAL MOTOR VEHICLE TRAFFIC CRASH ON MAY 4, 2013 IN GREENSBORO, GA
FATALITY ANALYSIS REPORTING SYSTEM(FARS) 2013 ARF

Extent of Damage	Vehicle Removal	Most Harmful Event	Related Factors-Vehicle Level	Related Factors-Vehicle Level 2	Fire Occurrence
Disabling Damage	Towed Due to Disabling Damage	Motor Vehicle In-Transport	None	None	No or Not Reported
Disabling Damage	Towed Due to Disabling Damage	Motor Vehicle In-Transport	None	None	No or Not Reported
Disabling Damage	Towed Due to Disabling Damage	Motor Vehicle In-Transport	None	None	No or Not Reported
Emergency Use	**Travel Speed**	**Underride/Override**	**Rollover**	**Location of Rollover**	**Initial Contact Point**
Not Applicable	Not Reported	No Underride or Override Noted	No Rollover	No Rollover	1 Clock Point
Not Applicable	Not Reported	Underriding a Motor Vehicle In-Transport, Underride, Compartment Intrusion Unknown	No Rollover	No Rollover	11 Clock Point
Not Applicable	Not Reported	No Underride or Override Noted	No Rollover	No Rollover	6 Clock Point
Driver Presence	**Driver's License State (FARS Only)**	**Driver's ZIP Code**	**Non-CDL License Status**	**Non-CDL License Type**	**Commercial Motor Vehicle License Status**
Yes	California	90025	Valid	Full Driver License	Valid
Yes	North Carolina	27804	Valid	Full Driver License	No (CDL)
Yes	Florida	34420	Valid	Full Driver License	Valid

Under-reporting: a major problem

Indiana FARS

Crash Year by Initial Impact Point on the Large Truck	Passenger Vehicle Compartment Intrusion?			Total
	Compartment Intrusion	No Compartment Intrusion	Compartment Intrusion Unknown	
Rear	0	0	1	1
Total	1	0	3	4



Roya

FULL FIELD DATA DUMP OF 2004 FARS CASE 180748 - VEHICLE FILE
FATAL MOTOR VEHICLE TRAFFIC CRASH OCCURRING ON NOVEMBER 24, 2004 IN INDIANA
THE CRASH INVOLVED A BMW AND A TRUCK TRACTOR
2004 FATALITY ANALYSIS REPORTING SYSTEM (FARS) - FINAL

ST_CASE	VEHICLE #	VIN	VIN_1	VIN_2	VIN_3	VIN_4	VIN_5	VIN_6	VIN_7	VIN_8	VIN_9	VIN_10	VIN_11	VIN_12	STATE	OCCUPANTS	MAKE	MODEL	BODY TYPE
180748	1	WBABN33441JW	W	B	A	B	N	3	3	4	4	1	J	W	Indiana	2	BMW	34	2dr Sedan/HT/Coupe
180748	2	1FUJBBCK94LN	1	F	U	J	B	B	C	K	9	4	L	N	Indiana	1	Freightliner	883	Truck/Tractor

ST_CASE	VEHICLE #	REGISTRATION STATE	REGISTERED VEHICLE OWNER	ROLLOVER	JACKKNIFE	TRAVEL SPEED	HAZARDOUS CARGO	TOWED TRAILING UNIT	VEHICLE CONFIGURATION	NUMBER OF AXLES	CARGO BODY TYPE	SPECIAL USE	EMERGENCY USE	IM
180748	1	Illinois	Driver Not Owner	No Rollover	Not Articulated	Unknown	No	No	Not Applicable	Not Applicable	Not Applicable	No Special Use	No	CI
180748	2	Multi-In State	Business or Govt	No Rollover	No	Unknown	No	Yes/1 Unit	Tractor/Semi	5	Van/Enclosed Box	No Special Use	No	

ST_CASE	VEHICLE #	PRINCIPAL IMPACT	UNDERRIDE/OVERRIDE	DEFORMATION	VEHICLE ROLE	MANNER LEAVING SCENE	FIRE OCCURRENCE	RELATED FACTOR 1	RELATED FACTOR 2	VEHICLE MANEUVER	CRASH AVOIDANCE MANEUVER	MOST HARMFUL EVENT	FATALS IN VEHICLE	EVENT 1
180748	1	Clock 12	No Under/Override	Disabling	Striking	Towed Away	No Fire	None	None	Going Straight	No Maneuver	Veh in Transp	1	Veh in Transp
180748	2	Clock 3	No Under/Override	Disabling	Struck	Towed Away	No Fire	None	None	Going Straight	No Maneuver	Veh in Transp	0	Veh in Transp

ST_CASE	VEHICLE #	EVENT 2	EVENT 3	EVENT 4	EVENT 5	EVENT 6	VIN LENGTH	BUS USE	GVW RATING	VEHICLE MODEL	MODEL YEAR	VIN MODEL	VIN SERIES TRUCK	VIN_BT	MOTOR CARRIER ID	TRUCK FUEL CODE	WHLBASE SHORT-AUTO	WHLI LONG-A
180748	1	Unknown	Unknown	Unknown	Unknown	Unknown	17	Not Used a Bus	Not Applicable	BMW 3-series	2001	5CI	***	CP	00000000000	*	1073	
180748	2	Unknown	Unknown	Unknown	Unknown	Unknown	17	Not Used a Bus	26,001 or more	FRHT COE hi ent	2004	ST2	CON	DS	5780806	D	9999	

ST_CASE	VEHICLE #	CC DISPLACEMENT	VIN WEIGHT-AUTO	TRUCK WEIGHT CODE	DRIVER PRESENCE	DRIVER DRINKING	LICENSE STATE	NON-CDL LICENCE TYPE	NON-CDL LICENCE STATUS	COMM MV LICENCE STATUS	COMPLIANCE W/LIC ENDORSEMENTS	DRIVER LICENCE TYPE COMPLIANCE	COMPLIANCE W/LIC RESTRICTIONS	VIOLATION CHARGE 1
180748	1	0	3252	0	Driver Operated	No Drinking	Illinois	Full License	Valid	No (CDL)	No Endorsements	Valid	No Restrict,N/A	None
180748	2	0	0	8	Driver Operated	No Drinking	Michigan	Full License	Valid	Valid	No Endorsements	Valid	Complied	None

nder-reporting: major problem

FIELD DATA DUMP OF 2016 FARS CASE 120918 - VEHICLE FILE
L MOTOR VEHICLE TRAFFIC CRASH OCCURRING ON MAY 7, 2016 AT 4:40PM IN
CRASH INVOLVED A TESLA AND A TRUCK TRACTOR
FATALITY ANALYSIS REPORTING SYSTEM (FARS) - FINAL

ecutive lumber	Vehicle Number	Travel Speed	Underride/Override	Rollover Type	Location of Rollover	Areas of Impact - Initial Contact Point	Extent of Damage										
120918	1	035 MPH	No Underride or Override Noted	No Rollover	No Rollover	9 Clock Point	Functional Damage										
120918	2	065 MPH	No Underride or Override Noted	No Rollover	No Rollover	12 Clock Point	Disabling Damage	Towed Due to Disabling Damage	Motor Vehicle In-Transport	None	None	No or Not Reported	Yes	Ohio	44705	Valid	Full Driver License

Joshua Brown Tesla Side Underride Crash

Under-counted and under-reported

- Inconsistency in police reports
- No checkbox for underride in police reports
- Poorly understood by law enforcement
- Looking for reason for crash - not reason for fatalities.
- Looking at driver behavior instead of dangerous design of trailer.
- Lack of awareness
- Well-documented inaccuracy of data


Walmart
Save money. Live better.
143889

Trooper Dash Cam of Traffic Backup at Crash Scene


FedEx
FedEx


Q&A

Questions for the Engineers

1. Have there been any operational issues with side guards on the road?
2. Does the use of seatbelts impact survivability when underride and deadly Passenger Compartment Intrusion occur? How does that impact cost benefit analysis?
3. Speed is a factor in many crashes. What difference would underride protection make in these crashes?
4. How does the use of collision avoidance technology change the potential for underride to occur?
5. It is well known that underride deaths are undercounted. What does your truck crash reconstruction work indicate about the frequency of underride deaths?
6. What fuel savings can be expected from the use of side guards?

While CMVSS No. 223 requirements are intended for mitigating PCI in light vehicle rear impacts at speeds less than or equal to 56 km/h (35 mph),64 CMVSS No. 223 rear impact guards may not be able to mitigate all fatalities in such crashes because some of the crashes may be low overlap (30 percent or less). . .

Also, the guards may not be able to prevent fatalities even if PCI is prevented because some fatalities may not be a result of PCI but are due to other circumstances (e.g. unrestrained status of occupants, elderly and other vulnerable occupants) which would be unaffected by an improved rear impact guard. . .

For the purpose of this analysis, NHTSA assumed that CMVSS No. 223 compliant guards on SUTs would be able to prevent about 85% of light vehicle occupant fatalities with PCI in impacts into the rear of SUTs at crash speeds less than or equal to 35 mph. However, since only 30 percent of the target population of light vehicle crashes with PCI into the rear of SUTs are at speeds less than or equal to 56 km/h, CMVSS No. 223 compliant guards would only be effective for a portion of the target population. Therefore NHTSA estimated an overall effectiveness of 25 percent (≈30% × 85%) for CMVSS No. 223 rear impact guards in preventing fatalities in light vehicle crashes into the rear of SUTs.
https://www.govinfo.gov/content/pkg/FR-2015-07-23/pdf/2015-17973.pdf#page=1

The 20 percent effectiveness estimate takes into consideration that CMVSS No. 223 requirements are intended for mitigating PCI in light vehicle rear crashes (with greater than 30 percent overlap) at speeds less than or equal to 56 km/h (35 mph). It also takes into account that some injuries are due to circumstances (e.g. unrestrained status of occupants, elderly and other vulnerable occupants) which would not be affected by an improved rear impact guard. https://www.govinfo.gov/content/pkg/FR-2015-07-23/pdf/2015-17973.pdf#page=1

[Wabash National debuts eco-friendly Super Truck]

The Administrator of the National Highway Traffic Safety Administration should conduct additional research on side underride guards to better understand the overall effectiveness and cost associated with these guards and, if warranted, develop standards for their implementation. (Recommendation 4)

DOT noted that NHTSA is conducting a review of police accident reports of light vehicle crashes into the side of trailers in order to (1) estimate the number of fatalities from side underride crashes and (2) understand the effectiveness of side underride guards in preventing and mitigating the severity of side underride crashes. NHTSA then plans to conduct an analysis of the impacts of requiring side underride guards on trucks and trailers. As of March 2021, NHTSA plans to complete these analyses by July 2021.

Is there any information which we can provide you with to help you with the analysis you are working on in response to this GAO Recommendation?