

III. Appendices

A. Record of ACUP Motions

- I. ACUP threshold to constitute consensus for recommendations to the Secretary in its Final Report shall be 50+%

Motion carried 9 yes no other votes were recorded 16 attendees

- II. The committee recommends that NHTSA conduct comprehensive research on U.S. underride crash characteristics, including the frequency of 30 percent overlap crashes. As much as possible, photos should be used. This research should be in addition to the agency's congressionally directed research into the feasibility of developing guards to protect in certain crash scenarios

Motion carried 13 – 4

- III. Conduct an in-person meeting for all ACUP Members

Withdrawn

- IV. Request a deadline extension for the committee.

Motion carried 13 – 4 – 1

- V. Include in the report to the Secretary and Congress the following recommendation that the 2022 RIG Rule should be amended to require that all new trailers meet the TOUGHGUARD test protocol or equivalent

Motion carried 10 – 1 – 6

- VI. Include in the report to the Secretary and Congress the following recommendation, that pursuant to the IIJA, within five years of implementing (V), the Secretary shall review and update FMVSS 223/224 standards in response to advancements in technology

Motion carried 13 – 0 – 3

- VII. Include in the report to the Secretary and Congress the following Assessment:
 - NHTSA's performance with respect to protecting the public from death and injury caused by rear underrides has been inadequate. Over the past 50 years, thousands of Americans have died potentially preventable deaths from rear impact collisions with semitrailers. During this period, NHTSA's only finalized rear impact guard rulemakings occurred in 1996 and 2022, the latter of which the agency was compelled to do by Congress. NHTSA merely

adopted a 17 year-old Canadian standard with which nearly all American manufacturers (93%) already complied. NHTSA chose not to require advances in rear guard safety protection marketed by nine large trailer manufacturers in response to the Insurance Institute for Highway Safety's TOUGHGUARD test protocol.

Withdrawn

- VIII. The ACUP should request from NHTSA/DOT all scoping documents, directions, discussions, test results, data, memoranda, reports and/or notes generated before, during, and following quasi static testing of trailer rear underride guards conducted by Karco or other contractors (i.e. Elemance) on behalf of NHTSA/DOT between 2016 and 2024. (Combined 8 & 9)

(Combined Motion) carried 12 – 3 – 1

- IX. NHTSA/DOT should produce all documents related to rear guard standards including test data, contracts, studies, scoping documents, analyses, reports, memoranda, and/or other communications or references related to trailer and/or straight truck rear guard strength, design, quasi static or dynamic testing, and/or test protocols between 1970 and 1998.

Motion carried 10 – 6 – 0

- X. The ACUP should include in its congressional report a recommendation that all trailers manufactured between 1998 to the current time that do not have ToughGuard awarded rear impact guards should be retrofitted with crash proven reinforcement device(s). These reinforcement devices, at minimum, should be tested and proven to mitigate PCI and create crash compatibility consistent with a ToughGuard awarded rear impact guard when attached to a minimally compliant FMVSS 223 rear impact guard.

Motion carried 8 – 1 – 6

- XI. The ACUP should recommend in its report to congress that congress regulate single unit trucks (SUTs) with the same rear impact guard standards that currently only apply to semitrailers.

Motion carried 9 – 2 – 4

- XII. The ACUP should include in its Report to Congress a recommendation that NHTSA issue revised RIG performance standards to withstand 30% rear overlap crash at 35 mph as the IIJA already directed NHTSA to do (Sec 23011 (b)(1)(A)(iii), FMVSS 223 & 224)

Withdrawn

XIII. The ACUP should include in its Report to Congress a recommendation NHTSA expeditiously conduct rear impact guard testing at “highway speeds” (up to 65 mph) as IIJA already directed NHTSA to do (Sec 23011 (b)(2)(A,B) and publish the results within 2 years.

Motion carried 9 – 5 – 1

XIV. The ACUP should include in its Report to Congress a recommendation that NHTSA must expeditiously complete Heavy Vehicle Automatic Emergency Brake Rulemaking for all classes of CMVs (RIN 2127-AM36)

Motion carried 15 – 0 – 0

XV. The ACUP should include in its Report to Congress a recommendation that NHTSA conduct a study to research how the survivability rate of rear underride crashes will change with increased passenger vehicle adoption of Automatic Emergency Braking at currently tested speeds (35 mph) as well as highway speeds (up to 65 mph).

Motion carried 15 – 0 – 0

XVI. The ACUP should include in its Report to Congress a recommendation that FMCSA should issue stronger conspicuity requirements, at minimum, a requirement to maintain and replace conspicuity tape every 5 years.

Motion carried 11 – 4 – 1

XVII. The ACUP should include in its Report to Congress a recommendation that NHTSA should additionally require Single Unit Trucks to adhere to conspicuity requirements.

Motion carried 15 – 0 – 1

XVIII. The ACUP should include in its Report to Congress a recommendation that DOT should continue research into Enhanced Rear Signaling Systems that could help better prevent rear underride crashes

Motion carried 16 – 0 – 0

XIX. The ACUP should recommend that DOT research the efficacy of high visibility ID lamps that illuminate the rear of a CMV to assist with potential Clearance Lamp rulemaking for all CMVs

Motion carried 14 – 1 – 1

XX. The ACUP should include in its Report to Congress a recommendation that DOT conduct research into efficacious methods of reducing Distracted Driving such as flashing lamps

Motion carried 16 – 0 – 0

XXI. The ACUP should include in its Report to Congress a recommendation that FMCSA

work with State law enforcement and other stakeholders to emphasize education and the need to issue RIG violation citations and encourage maximum fines for violations affecting safety.

Motion carried 14 – 1 – 0

- XXII. NHTSA should provide a staff member or a contractor to the ACUP Committee to help proofread, edit, and format the Committee’s written report to Congress, consistent with IIJA 23011 (d)(5), “On request of the Committee, the Secretary shall provide information, administrative services, and supplies necessary for the Committee to carry out the duties of the Committee.”

Withdrawn

- XXIII. The ACUP should include in its Report to Congress a fact-based history of underride crashes

Motion carried 7 – 4 – 4

- XXIV. Motion for minority report to accompany majority report

Motion carried 15 – 0 – 0

- XXV. NHTSA should withdraw its previously submitted ANPRM or reissue a revised ANPRM and cost-benefit analysis that acknowledges and accommodates critiques made by commenters that the cost-benefit approach taken artificially constrained the number of lives saved and also failed to account for cost-savings (such as fuel efficiency gains provided by side underride guards).

Motion carried 7– 6 – 4

- XXVI. The ACUP should request the Secretary of DOT to extend the ACUP charter for an additional 2-years in accordance with FACA.

Withdrawn

- XXVII. ACUP affirms that NHTSA, per the Modernizing Regulatory Review Executive Memo and corresponding guidance, must fully account for regulatory benefits that are difficult or impossible to quantify when conducting rulemaking analysis.

Motion carried 9 – 2– 6

- XXVIII. Based on the rigorous analysis of the IIHS’ Public Comment, the ACUP finds that NHTSA underestimated the number of preventable side underride deaths. NHTSA erroneously concluded that costs outweigh benefits, when the opposite is true. NHTSA should withdraw the 2023 side impact guard ANPRM.

Motion failed 7 – 7 – 3

XXIX. NHTSA should complete a new side impact guard cost benefit analysis and rulemaking that counts previously omitted underride victim categories, including pedestrians, bicyclists, and motorcyclists.

Motion carried 11 – 1 – 5

XXX. NHTSA should issue an Advanced Notice of Proposed Rulemaking on Front Impact Guards.

Motion carried 11 – 1 – 5

XXXI. The Secretary should recommend, and the President should establish, a Presidential Advisory Committee on Integrity of Underride Research. It should be composed of a diverse group of stakeholders, including:

- (i) Truck and trailer manufacturers.
- (ii) Motor carriers, including independent owner operators.
- (iii) Law enforcement.
- (iv) Motor vehicle engineers.
- (v) Motor vehicle crash investigators.
- (vi) Truck safety organizations.
- (vii) The insurance industry.
- (viii) Emergency medical service providers.
- (ix) Families of passenger vehicle underride crash victims.
- (x) Families of Vulnerable Road User underride crash victims.
- (xi) Labor organizations.

The ACIUR should review all underride-related research, conducted by or contracted with the Department of Transportation, including the Statement of Work and the draft report prior to publication.

Motion failed 1 – 12 – 4

XXXII. NHTSA may harmonize with global front override regulations, including UNECE-93 and any revisions to it, in order to provide improved motor vehicle safety, as indicated in Section 24211 of the IIJA: The Secretary shall cooperate, to the maximum extent practicable, with foreign governments, nongovernmental stakeholder groups, the motor vehicle industry, and consumer groups with respect to global harmonization of vehicle regulations as a means for improving motor vehicle safety. (IIJA, p. 397, <https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>)

Motion carried 11 – 1 – 5

XXXIII. To require all new semitrailers, and single-unit trucks that have crash incompatible open space(s) along the side(s) to be equipped with side guards capable of

preventing injurious passenger compartment intrusion (pci) when struck by a midsize vehicle at any angle, at any location, and at any closing speed up to and including 40 mph.

Motion carried 11– 6 – 0

- XXXIV. To require semitrailers, and single-unit trucks manufactured after 1998 that have crash incompatible open space(s) along the side(s) to be equipped with side guards capable of preventing injurious passenger compartment intrusion (pci) when struck by a midsize vehicle at any angle, at any location, and at any closing speed up to and including 40 mph.

Motion carried 8 – 6 – 3

- XXXV. To require the side guards referenced above also prevent a vulnerable road user (VRU) from passing underneath the guarded vehicle in an interaction with the side of the vehicle.

Motion carried 9 – 8 – 0

- XXXVI. To require NHTSA to conduct a cost analysis of the total average cost of a fatal side underride crash including loss of life, lost productivity, court costs, equipment costs, expert witness and attorney costs, property damage, judgements and/or settlements and other related costs. This study should be based on data from fatal side underride crashes such as the crash of Riley Hein.

Withdrawn

- XXXVII. The department should conduct a study of conspicuity tape in service. This study focuses on actual rates of compliance with the regulated minimum reflectivity requirements, the ability of enforcement personnel to accurately and adequately enforce these requirements, and make recommendations on how to reduce the most common forms of non-compliance found.

Motion carried 16 – 1– 0

- XXXVIII. For purposes of providing ‘written consensus advice’ to the Secretary of Transportation on underride protection to reduce underride crashes and fatalities relating to underride crashes, ‘consensus’ on any piece of advice will mean the agreement of two-thirds of the then-serving ACUP members, and any piece of advice that does not have the agreement of two-thirds of the then-serving ACUP members will not be represented to be the consensus advice of the ACUP.

Motion failed 8 – 9 – 0

- XXXIX. To further GAO recommendation # 1 regarding improvements to Model Minimum Uniform Crash Criteria, NHTSA should take additional steps to include both vehicle-related side underride crashes, and Vulnerable Road Users (VRU) side underride crashes in reporting of injuries and fatalities related to side underride guard crashes.

Motion carried 15 – 0 – 0

- XL. NHTSA should assess risks associated with deflection into adjacent lanes associated with partial offset rear crashes as well as side underride crashes. Final results should be made public.

Motion carried 9 – 6 – 0

- XLI. The ACUP shall recommend in its report that DOT explore the need for Federal weight limit weight-based exemption for side underride guards.

Motion carried 7– 6 – 2

- XLII. The ACUP shall recommend in its report that NHTSA request that the Department of Transportation’s Volpe Center evaluate the effectiveness of a side underride guard to determine if their effectiveness is similar or greater than Lateral Protective Devices in mitigating the severity of pedestrian, cyclist, and motorcyclist fatalities.

Motion carried 13 – 0 – 2

- XLIII. NHTSA should work with the Federal Railroad Administration to conduct research on potential impacts of side underride guards during highway-rail grade crossings and that research be made publicly available.

Motion carried 15 – 0

- XLIV. The ACUP shall recommend in its report that NHTSA create a field in the Fatality Analysis Reporting System to determine if an underride crash occurred involving a large truck and a pedestrian/cyclist.

Motion carried 15 – 0 – 0

- XLV. Therefore it is resolved that any report from the ACUP to the Secretary that claims or purports to contain written consensus advice to the Secretary on underride protection to reduce underride crashes and fatalities relating to underride crashes will be provided in final form to all members of the ACUP at one week before such a report or advice is actually submitted to the Secretary so that those ACUP members who have dissenting or differing views may prepare their own submission to be submitted to the Secretary at the same time the report of the ACUP is submitted to the Secretary.

Motion carried 17– 0 – 0

- XLVI. NHTSA should set deadlines for drafts of the majority and minority reports to be circulated, deadlines for comments to be submitted on each draft report, deadlines for revised drafts to be circulated, and deadlines for reports to be deemed final.

Withdrawn

- XLVII. Moving forward, NHTSA should use an independent moderator to assist ACUP in executing Committee duties, covering all agenda items, and facilitating member discussion.

Withdrawn

XLVIII. NHTSA should investigate the potential for collision mitigation technologies for light and heavy-duty vehicles to prevent or reduce the risk associated with side underride crashes.

Motion carried 15 – 0 – 0

XLIX. The ACUP shall recommend that DOT disseminate educational material in addition to existing brochure for law enforcement to help them identify and record side underride crashes.

Motion carried 15 – 0 – 0

L. The ACUP report shall reflect whether each committee member concurs or does not concur with the report by allowing each member to make a statement of concurrence or non-concurrence with the report. The ACUP report include such documentation in an Appendix.

Motion carried 15 – 0 – 0

LI. Change the quorum requirement from 75% of ACUP Membership to 50+%, if By-Laws are subject to amendment (Note: they were not able to be amended)

Motion carried 11 – 6 – 0

B. Individual ACUP Member Reason Concurrence or Dissent

C. Technical briefings

- a. **Truck Rear Underride-by Matthew Brumbelow, IIHS**
- b. **Rear Underride Prevention-by Aaron Kiefer, Collision Safety Consulting PLLC**
- c. **Overview of 50 Years of Work on Rear Underride Prevention-by Marianne Karth, AnnaLeah and Mary for Truck Safety**
- d. **An Alternative Estimate of the Lives that Could be Saved by a Side Underride Guard standard— by Matthew Brumbelow, IIHS**
- e. **Underride Fatalities — by Eric Hein and letter with supporting data.**
- f. **A History of Trailer Rear Impact Guards from Utility’s Perspective — by Jeff Bennett, Utility Trailers**
- g. **Missed Opportunities to Prevent Side Underride — by Marianne Karth, AnnaLeah and Mary for Truck Safety**
- h. **Front Underride — By Keith Friedman, Friedman Research**
- i. **Front Underride — by Marianne Karth, AnnaLeah and Mary for Truck Safety**
- j. **Hydro Concept Rear Impact Guard (RIG) — by Malcolm Deighton, Hydro Aluminum Extrusions**
- k. **Crash Avoidance Technology — by Wolfgang Hahn, ZF CV Systems North America**