Volpe, The National Transportation Systems Center

- Unique agency within U.S. DOT
- 100% fee-for-service
- All modes of transportation
- Cross-disciplinary
- 570 federal staff, 400 onsite contractors
- Based in Cambridge, MA
Large truck urban safety context

During a recent 5-year period, 1,746 pedestrians and bicyclists in the U.S. were killed from impacts with large trucks

32% of these happened after an initial impact with the side of a truck.

37% of bicyclist fatalities happen on the right side when trucks impact bicyclists.

257 Pedestrian fatalities
139 Bicyclist fatalities
115 Pedestrian fatalities
45 Bicyclist fatalities

U.S. DOT/Volpe Image
Side guard safety benefits

- Bicyclist fatalities: Down 61%
- Pedestrian fatalities: Down 20%
Side guard design precedents

Narrow rails

Wide rails

Panels
Volpe & NYC developed recommended standards
Volpe/City T2 Partnerships

- Deployed
- Deployment Pending
- Deployed separately
Representative U.S. sideguard installs

- Seattle
- Cambridge, MA
- Portland, OR
- Boston
- NYC
Federal voluntary standard

Truck Side Guard Specifications
Recommended Standard DOT-VNTSC-OSTR-16-05

This document is intended to be used by (1) public or private medium/heavy-duty truck fleets considering adding side guards, (2) jurisdictions or customers that require side guards through policy or procurement, (3) manufacturers of side guards, and (4) truck manufacturers and dealers. The specifications below are based on previously published Volpe recommendations (Reports DOT-VNTSC-0506-01 and DOT-VNTSC-0507-16-01) and may be referred to as the "Volpe side guard standard" or "Volpe side guard specifications." This standard can be used as a basis for design, production, testing, review, and procurement of side guards and side-guard-equipped vehicles.

1. Dimensional and strength specifications

- A side guard meets the strength requirement if it is capable of withstanding 500 pounds of force applied perpendicularly to any point of its surface by the center of a flat, circular plate of diameter no greater than 8.7 inches, such that the deflection of the loaded side guard measured at the center of the plate does not exceed (1) 5.9 inches anywhere, or (2) 1.25 inches in the nearest 9.8 inches. A manufacturer may also demonstrate compliance using a valid engineering calculation, such as finite element analysis.

2. Additional dimensional specifications for rail-style side guards

- A = 15.8 inches max
- B = 11.8 inches max
- C = 13.8 inches max
- D = 4.0 inches min
- E = 11.8 inches max
- F = 11.8 inches max

*This gap between the side guard’s leading edge and the wheel, wheel arch, or other permanent vehicle structure should not exceed 11.8 inches. A turned-in vertical bar connecting the forward ends of the horizontal rails should be incorporated if the forward gap exceeds 3.5 inches. The bar need not be turned in or can be omitted if the distance is less than 3.5 inches.

3. Vehicle weight threshold and flexibility of design

- Side underride protection should be included on Class 3 and above vehicles, which have a gross vehicle weight rating (GVWR) of 20,000 pounds and higher.

- Acceptable side underride protection can be provided by any combination of vehicle body, fuel tanks, tag axles, tool boxes, or purpose-built side guards comprising a smooth surface flush with the vehicle sidewall, meeting the Volpe dimensional and strength specifications set forth above.

*This document was prepared for the Office of the Assistant Secretary of Research and Technology.

*All text states the dimensional strength standard without approval by the U.S. Federal Highway Administration (FHWA). The regulations regarding side guard specifications with equal weight design are in the Federal Register. A side guard with such type approval will also meet the Volpe dimensional criteria.

Visit: www.volpe.dot.gov/side-guards
DCAS-NYC Fleet

- Largest municipal fleet in the country.
  - 28,000 owned/leased vehicles.
- DCAS Fleet works directly with the 10 largest agencies and directly manages 40 agencies with smaller fleets.
  - Involved with safety, sustainability, transparency, & shared services.
- Current focus on Vision Zero
  - End traffic deaths and injuries
- Over 550 Side Guards installed.
  - Original goal of 240, 10% of eligible truck fleet.
NYC Side Guard Installs
NYC Side Guard Installs
Implementation

• Volpe Report
• Manufacturer Research and Selection
  • Installation approach
• Installer Selection
• Selection of pilot units
  • Agency cooperation
• Installer training
  • Manufacturer/Installer partnership
• Volpe Feedback
The Learning Curve

• Open lines of communication
  • Feedback
• Challenges
  • No two truck are the same
  • Ladder, boxes, access
  • New discoveries
• Willingness to test
• Common goal
Looking Toward the Future

- New competition
- New designs and approaches
  - Installer VS manufacturer customization
  - Rail, panel, removable, custom
- Local Law
- OEM application
Questions?

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