

Side Underride Guards

Initial Operational Concerns and Challenges

American Trucking Associations



Known Operational Concerns...

- Compatibility with various trailer configurations
 - Tank Trailers
 - Intermodal
 - Agricultural Use
 - Belt trailer
 - Grain Hopper
- Highway-rail grade crossings
 - High-centering events
 - Ongoing work with Federal Railroad Administration
- Second story and below ground loading docks
 - Increase in high-centering events



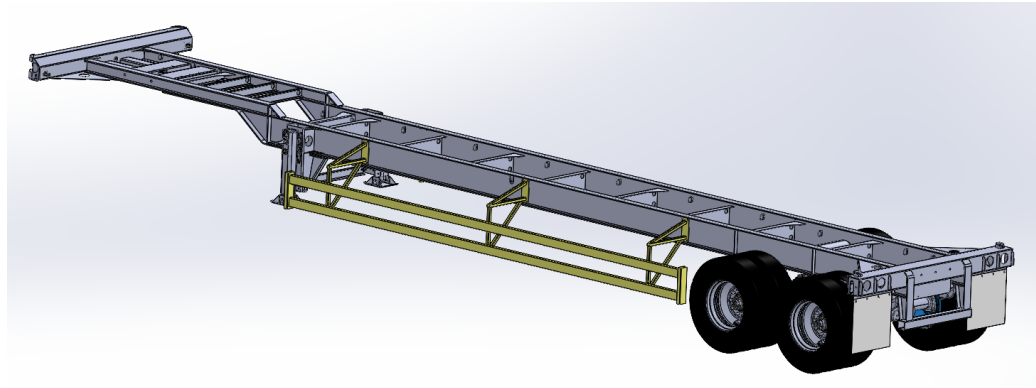






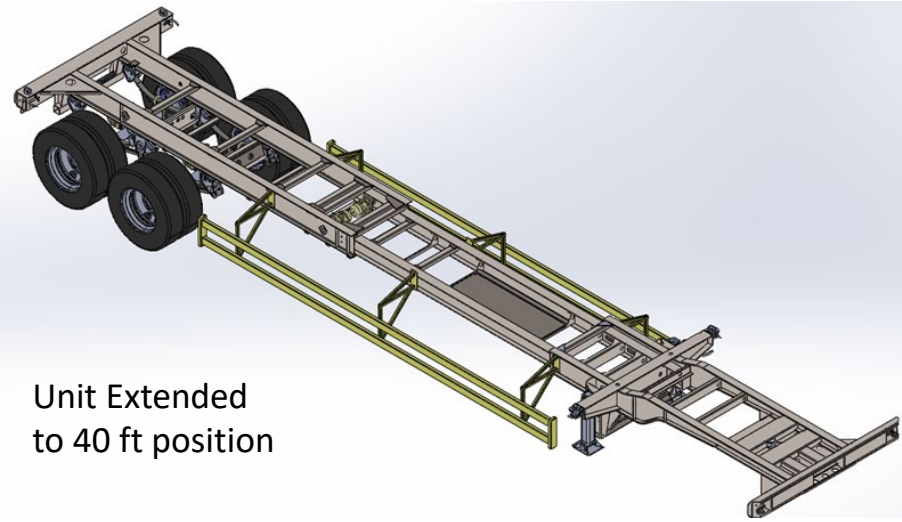
Trailer Compatibility

- Intermodal Chassis have unique designs. While adding a side guard to a standard non extendable chassis may be a relatively simple solution, there are weight and cost impacts.
- Additionally, industry demands that the chassis be stackable for storage when not in use. Side guards would prohibit this practice or could lead to damaged side guards.

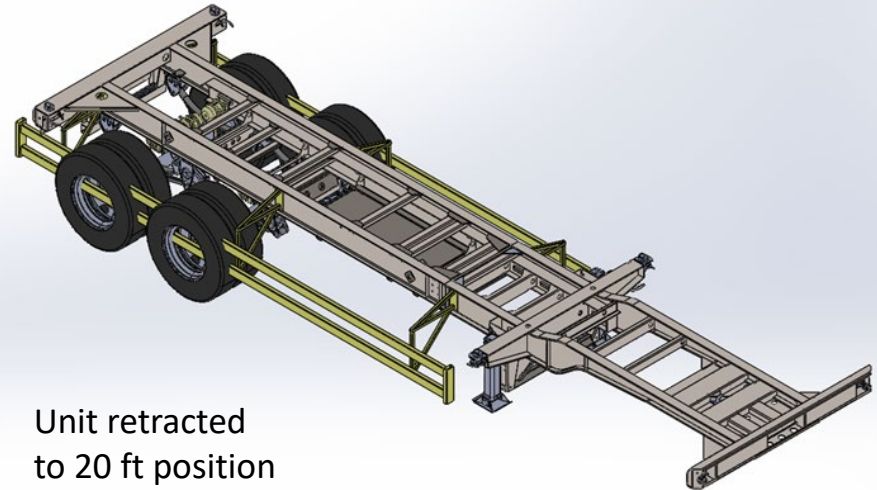


Trailer Compatibility

- Sliding and or Extendable chassis pose a difficult challenge to apply appropriate side impact guards to prevent intrusion. These type of chassis are now the most useful type and becoming the most desired.



Unit Extended
to 40 ft position



Unit retracted
to 20 ft position

Rail Grade Crossings

- Average of 300 crashes per year involving train and truck-tractor
- Installation of side-guards will lead to more.
- In 2014 FRA estimated 130,000 public and 80,000 private rail crossings in U.S.
 - Route planning to avoid these crossings can be problematic.
- Federal Railroad Administration in the process of addressing highway-grade crossing events.

Loading Docks

- Second story or below ground (depressed) loading docks common in retail or grocery
- ATA members report these are not compatible with aerodynamic skirts. Skirts drag on slope

Challenges not yet addressed

- Trailer Resiliency Over Time
- Maintenance
- Routing to accommodate side guards

Ways to address side underride crashes

- Using side underride guards to **mitigate** a crash at highway speeds **after impact** focuses only on mitigation and not prevention and is a difficult engineering challenge.
 - What occurs **after** impact with the side guard ?
 - The crash sequence does not conclude at the impact with the side guard.
- Opportunities to address side underride crashes **before** impact:
 - Prevention (Forward-collision alerts, distraction/drowsiness detection)
 - Vehicle to Vehicle/Infrastructure capabilities
 - Mitigation via braking (AEB)
 - Mitigation versus speed enforcement/aggressive driving
 - Defensive Driver training