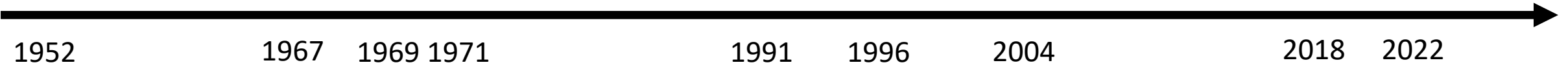
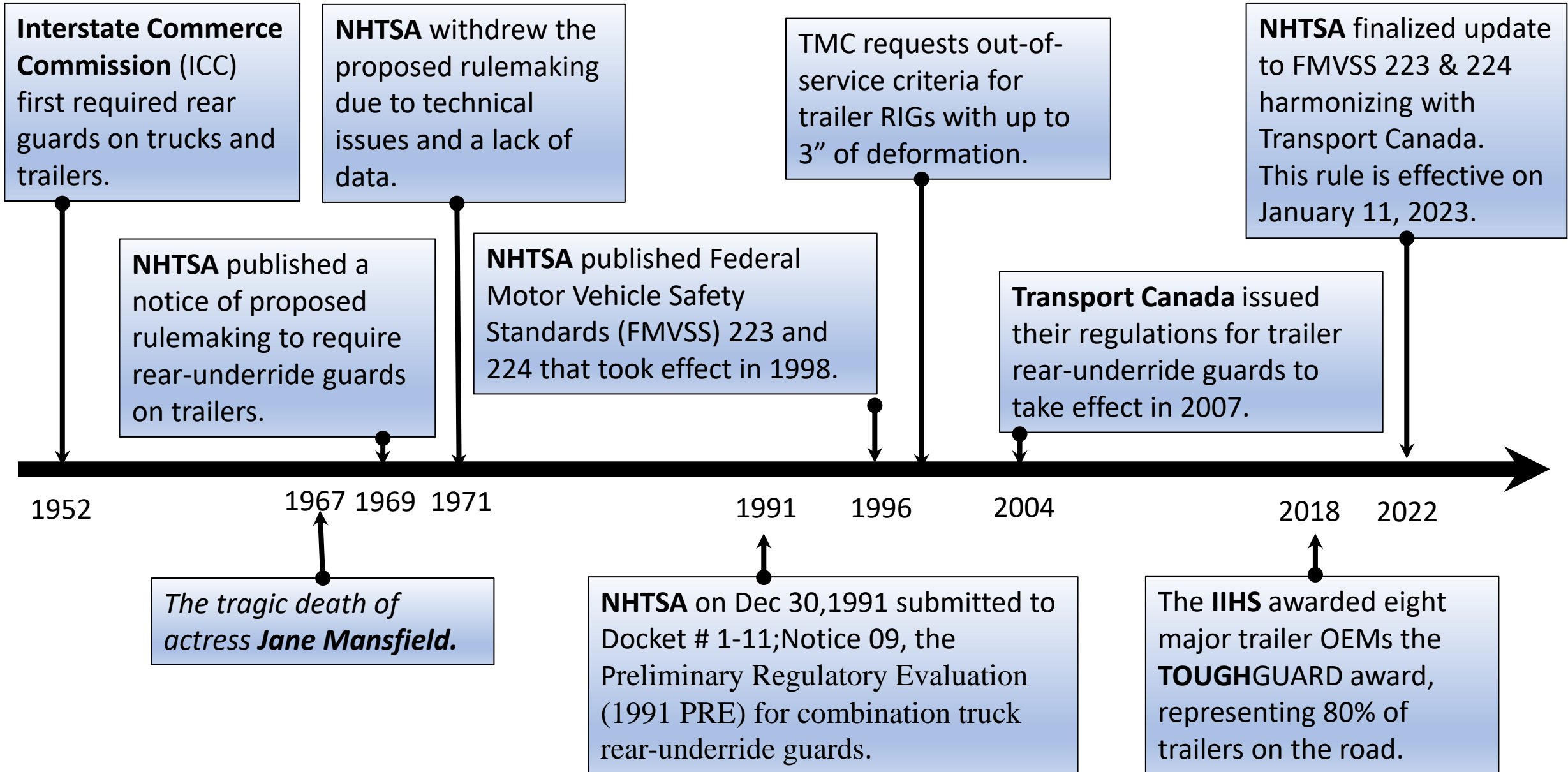


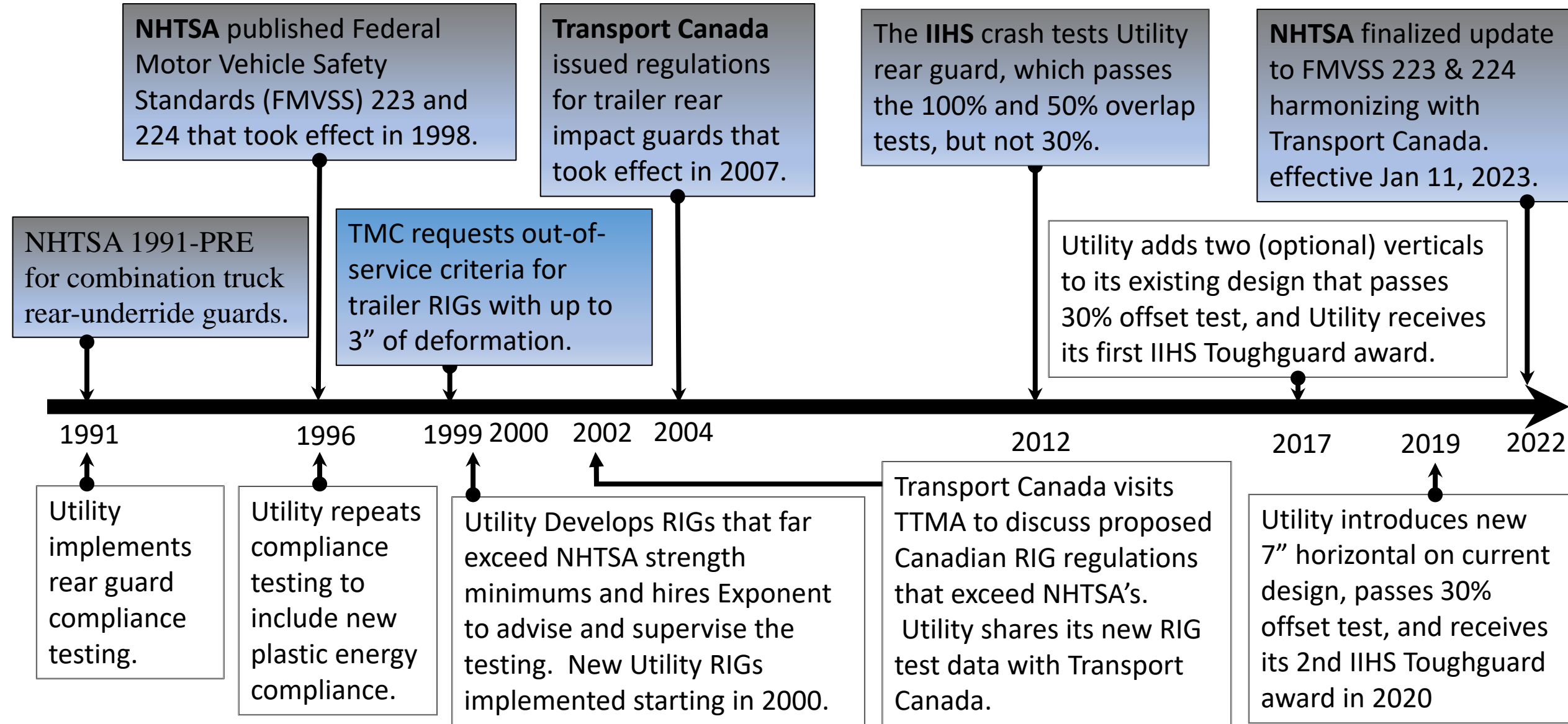
A History of Trailer Rear-Impact Guard (RIG) From Utility's Perspective



Rear-Impact Guard (RIG) Industry Milestones



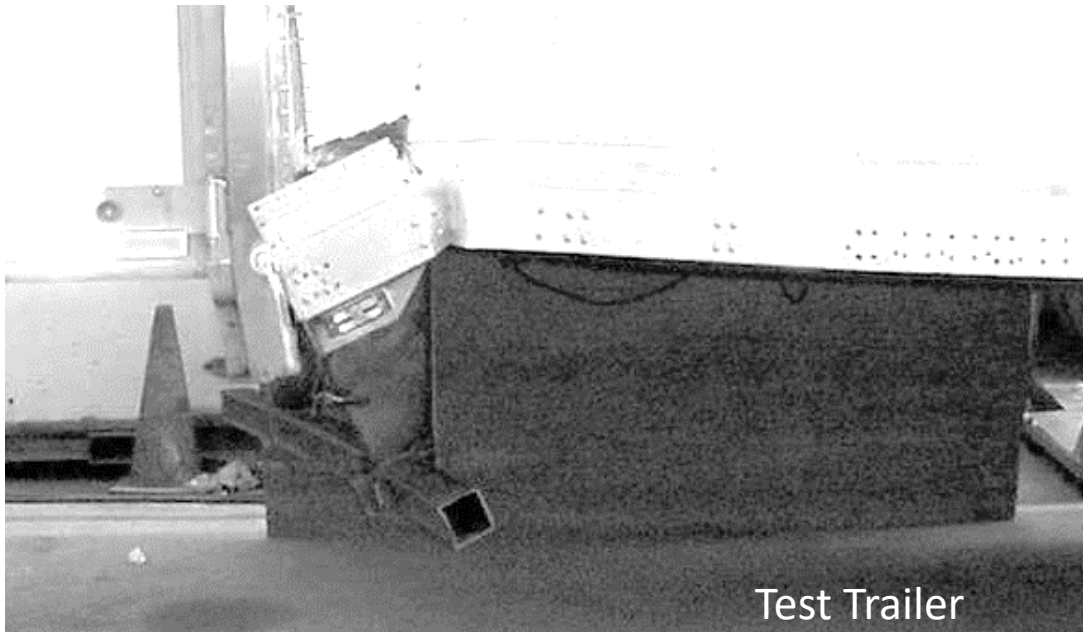
Utility's Responses To The Industry Milestones





Customer Trailer

Utility's RIG, implemented on dry van models in 2000, could pass multiple, consecutive NHTSA tests without losing the RIG structural integrity.



Test Trailer



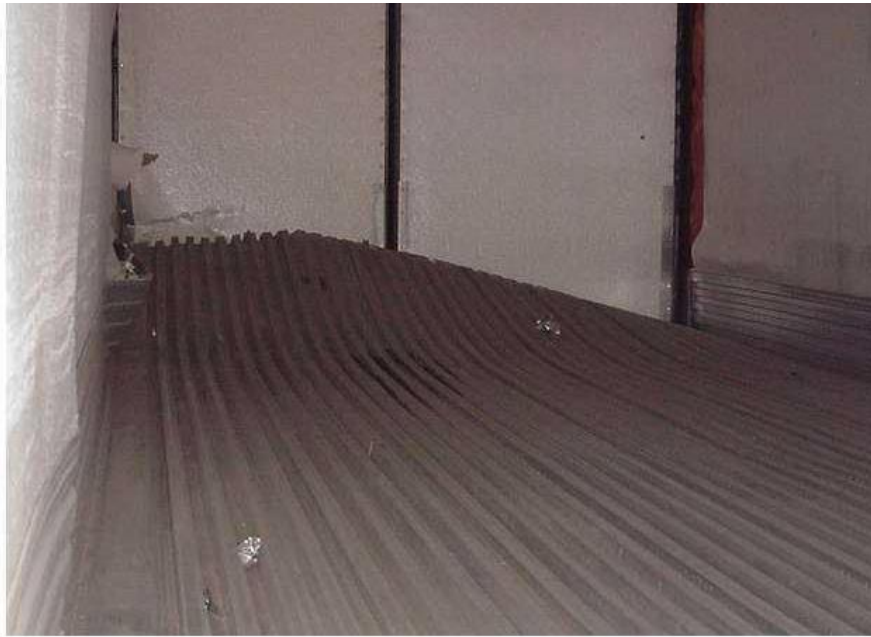
Test Trailer



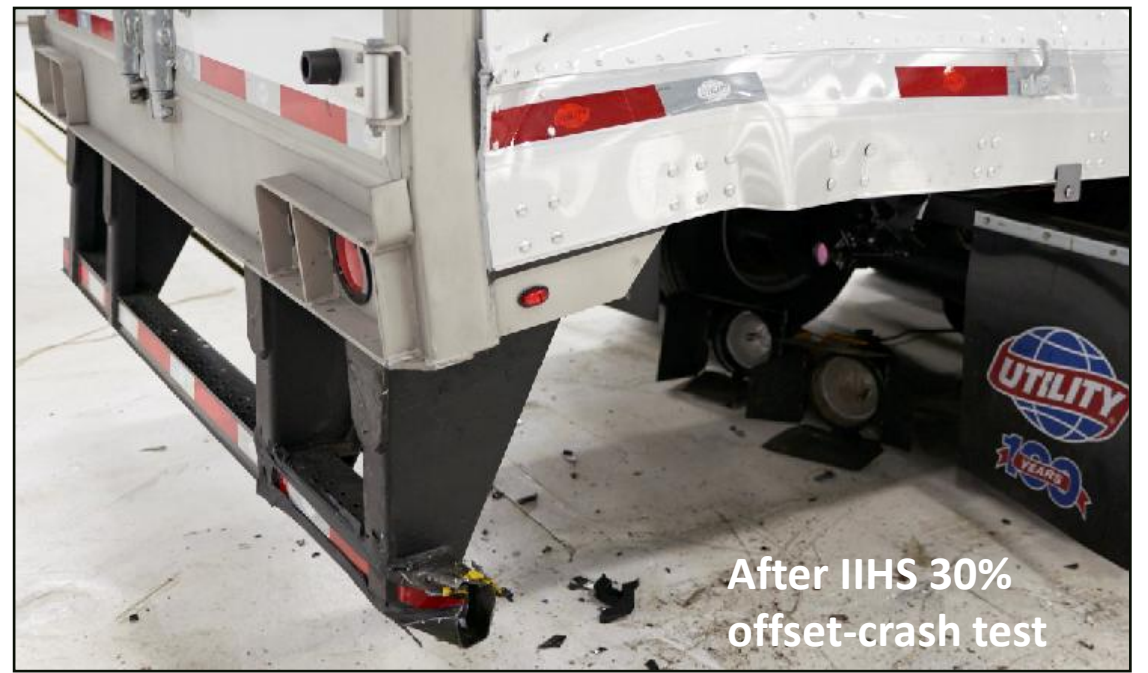
Utility dry van RIG
extreme-mode-of-failure
test conducted on a test
trailer with **Exponent**.



Reefer Bumper
Test to Total
Destruction



**Utility
refrigerated van
RIG extreme-
mode-of-failure
test conducted on
a test trailer with
Exponent.**



The Utility dry van trailer with optional 3rd and 4th verticals added to the existing standard Utility RIG.

This trailer passed the IIHS 30% offset crash test in 2017.



In 2018, Utility develops the 7" deep horizontal bumper tube that later replaced the 4" X 4" bumper tube on all of Utility's standard base-model-trailer RIGs. The new horizontal passed the 30% offset test shown here.

Utility Trailer

Applies to all dry van,
refrigerated and flatbed units
built after December 2019



IHS
TOUGHGUARD



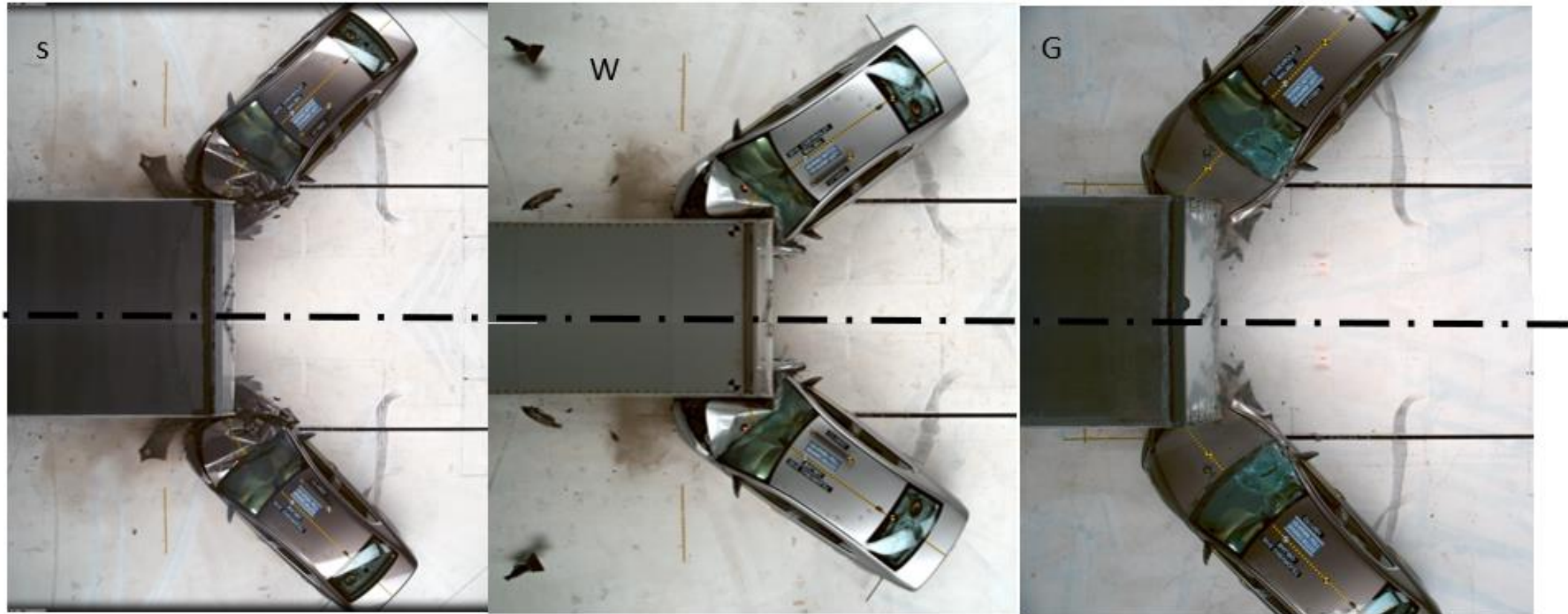
Utility implemented the 7”
deep tube on all its
standard base model RIGs
including reefers, dry vans,
and flatbeds.

IIHS 30% Offset RIG Crash Test



Original test on Curbside

Mirrored Curbside to Roadside

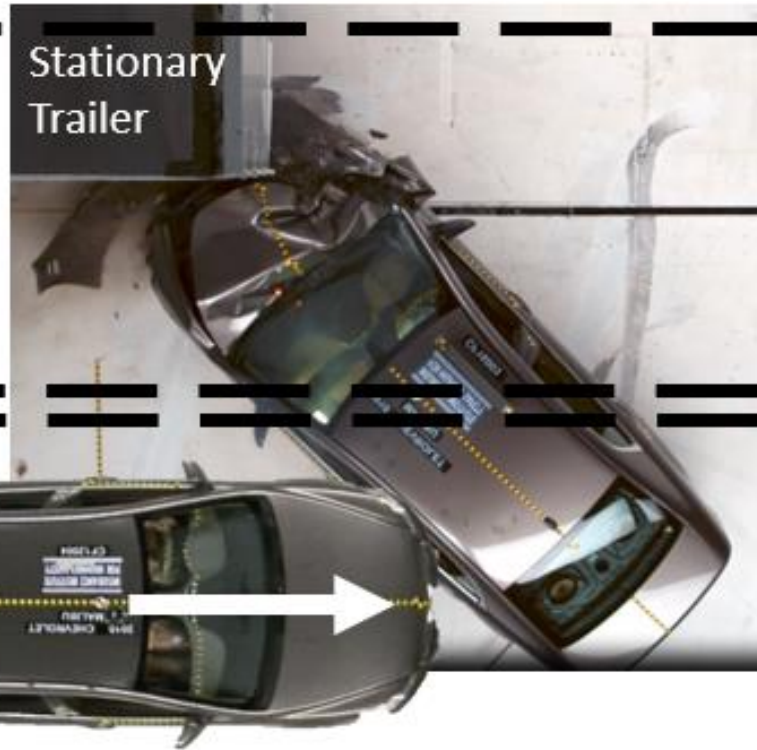


The 30% Offset RIG Test Unintended Consequences

Original 2-Vertical RIG



Typical 4-Vertical RIG



Westbound 35-MPH
Crash Vehicle.



→ EASTBOUND LANE →

→ EASTBOUND LANE →

(35-MPH Eastbound Innocent now included in crash.)