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Testimony of Jim Chase
Before the Senate Transportation Committee
In Opposition to House Concurrent Resolution 3001
February 18, 2021

Chairman Clemens and honorable members of the Senate Transportation Committee, my name is Jim Chase. I represent SMART-Transportation Division of the International Association of Sheet Metal, Air, Rail, and Transportation employees. SMART is the largest rail labor union in North America. Our membership includes conductors, engineers, switchmen, trainmen and yardmasters; I am a locomotive engineer for BNSF Railway at Mandan.

This written testimony is in opposition to House Concurrent Resolution 3001. HCR 3001 urges Congress to temporarily amend cargo carrying truck length and weight restrictions on state highways and interstates that are a part of the National Network to allow North Dakota and surrounding states to conduct a road train pilot program and to permanently amend the restrictions to allow road trains on the National Network highways and interstates if the pilot program is successful.

Many concerns are unresolved in this resolution, in particular, the increased stress (and associated costs) on our roads and bridges and the safety of the traveling public who will be forced to interact with road trains in our state.

Under HCR 3001, trucks would have no limits on weight and length other than they could not exceed the maximum weight per axle and length permitted now. Engineers estimate that the current interstate maximum, a five-axle rig weighing 80,000 pounds, causes more damage to a highway than 5,000 cars. When the trucks are overloaded, as quite a few of them are, the damage is exponentially worse. Increasing a truck's weight to 90,000 pounds results in a 42 percent increase in road wear. Pavement designed to last 20 years wears out in seven.

Road trains are currently used only in remote areas of Australia where there is little vehicular traffic, and they do not have the extreme weather challenges that we do in North Dakota.

If you've passed or been passed by freight companies pulling triple trailers in North Dakota, you know they sway under normal weather conditions. Now imagine passing even longer, heavier truck trailer combinations in windy or stormy weather. In addition, as temperatures rise in the summer, the oil in blacktop roads comes to the top, creating conditions mimicking ice which require increased stopping distances.

Additional infrastructure will also be required for long road trains, including places to park these over-sized rigs, refuel, and provide rest stops for Hours of Service that are currently not available for long road trains. Who will bear the costs for these needed improvements?

The nation's economy depends on trucking, but every method of shipment comes with a price. Heavier and longer trucks will make our roads and highways less safe for the general public and will have a very significant physical impact on our public roadways, with all costs ultimately being paid by taxpayers. I urge a do not pass on HCR 3001.

"Road Trains"

<u>The size of these behemoth trucks will mean added dangers to our roads</u>

Study after study has shown that adding more weight and length to a truck makes it more dangerous. Safety Concerns include: braking problems, longer stopping distances and, when there is a crash, the crash becomes more severe, leading to more deaths and serious injuries.

- **Dramatically higher crash rates:** The United States Department of Transportation (USDOT) found in its 2016 report to Congress that heavier trucks had anywhere from 47 percent to 400 percent higher crash rates in limited state testing.[1] There were 632 large-truck crashes in North Dakota in 2018. Unfortunately, 30 people lost their lives in those crashes, a 7% increase over the prior year.[2]
- **More severe crashes.** The severity of a crash is determined by the velocity and mass of a vehicle. If its weight increases, so does the potential severity of a crash.[3] Any increase in crash severity increases the likelihood of injuries becoming more serious or resulting in fatalities.

[1] USDOT; 2016. Comprehensive Truck Size and Weight Limits Study, Final Report to Congress
[2] Federal Motor Carrier Safety Administration; 2018. Analysis & Information- Crash Statistics
[3] Ibid.

Heavier trucks tend to have a higher center of gravity because the additional weight is oftentimes stacked vertically. Raising the center of gravity increases the risk of rollovers.[4]

- **Increased wear and tear.** Increasing the weight of trucks causes additional wear and tear on key safety components. The 2016 USDOT study found that trucks weighing over 80,000 pounds had higher overall out-of-service (OOS) rates **and 18 percent higher brake violation rates** compared to those at or below 80,000 pounds.[5] This is especially important because a 2016 study by the Insurance Institute for Highway Safety found that trucks with any out-of-service violation are 362 percent more likely to be involved in a crash.[6]

Heavier trucks would destroy our bridges

The North Dakota State University Upper Great Plains Transportation Institute, at the request of the North Dakota Department of Transportation, studied the impacts of trucks weighing up to 129,000 pounds and as long as 121 feet, significantly smaller than the road train proposal.[7] The study found:

- Increasing truck weight limits to 129,000 pounds would incur as much as $2.26 billion in statewide bridge replacement, with $1.26 billion occurring on county and local bridges—these cost estimates do not account for the current bridge backlog to adequately support 80,000-pound trucks.
- The study found that the current bridge backlog to adequately support trucks weighing 80,000 pounds is $163 million for state bridges, and $449 million for county and local bridges.
- The study found that approximately 21,000 county and local intersections may need to be upgraded to accommodate the increased turning radii needed for longer tractor-trailers, costing between $130 million and $306 million.
- 462 of the 4,329 bridges in North Dakota are rated in poor condition,[8] ranking North Dakota 9th worst in the nation with over 10 percent of its bridges in poor condition.

Heaviest trucks would shift to our local roads

To make matters worse, these massive trucks will be going through our local communities, the very places where our families live, work and play. In North Dakota, from 2013-2017, an average of 52 people per one million population were killed annually in crashes involving a large truck, the highest rate in the nation.9 Introducing these massive trucks on state and local roads will only increase these dangers.

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[4] USDOT; 2000. Comprehensive Truck Size and Weight Study
[5] USDOT; 2016.Comprehensive Truck Size and Weight Limits Study, Final Report to Congress
[6] Insurance Institute for Highway Safety; 2016.Crash Risk Factors for Interstate Large Trucks in North Carolina
[7] North Dakota State University Upper Great Plains Transportation Institute; 2016. North Dakota Truck Harmonization Study
[8] Federal Highway Administration; 2019. Bridge Condition by Highway System.
[9] TRIP; October 2019. America's Rolling Warehouses: Opportunities and Challenges with the Nation's Freight Delivery System.

NEW STUDY SHOWS MAJOR DIVERSION OF FREIGHT FROM RAIL TO ROADS IF BIGGER TRUCKS ALLOWED

July 2020

A new study, commissioned by the Coalition Against Bigger Trucks, was just released showing major diversion of freight traffic from rail to truck if longer and heavier trucks are allowed by Congress. This study shows some **". . . scenarios will reduce intermodal traffic by 20-25 percent and railroad carload traffic by as much as 20 percent. More disruptive scenarios could reduce both intermodal and certain carload traffic by nearly 60%."** The author of the study is Mark Burton, Appalachian Transportation Institute, Marshall University. Previously, Burton was the Director of Transportation Economics, Research Associate Professor at the University of Tennessee-Knoxville. He has over 40 years of experience in freight economics and has authored numerous articles and other publications on rail and truck movement of goods.

This study will be an important resource in the ongoing debate in Congress and state legislatures as these bodies consider the issue of truck size and weight. A core argument for proponents of bigger trucks is that heavier and longer trucks will mean fewer trucks on the road, thereby making our roads safer and causing less damage to roads and bridges. This study confirms bigger trucks mean more trucks on our roads, creating more dangers for American motorists and further stressing our already inadequate infrastructure system.

Additional background

- Current federal law limits the size of two trailers tethered together, so-called twin trailers or double trailers, to no more than 28 feet in length per trailer. Federal law limits the weight of any single trailer to no more than 80,000 pounds on the interstates.
- Each year, lawmakers are pressured to raise the limits for the weights and lengths of trucks that travel public highways. Doing so would lower truck costs and thereby benefit a relatively small subset of the nation's freight shippers and provide greater profits for some of the largest trucking companies.
- However, the downsides to changing the federal limits are serious:
    - Relaxing weight and size limits would lead to increased crash-related casualties, unaffordable wear and tear on highways and the diversion of freight traffic from congestion-reducing, environmentally friendlier non-highway alternatives to all-highway truck routings.
    - Increasing truck size and weight limits would slash the use of intermodal truck-rail freight shipping which is contrary to national transportation policies that seek to promote the efficient use of rail and truck transportation partnerships.
    - The most aggressive changes to truck size and weight standards could be ruinous to rail carriers and to the public sector policies designed to mitigate the growth of truck-related harms.

Additional details on the new study

- The new study used decades of actual truck and rail pricing and demand data, including data as recent as 2019, to estimate the shipper and carrier response to various truck size and weight scenarios over a period of five

years. The study estimates these impacts for both intermodal and carload freight traffic.

- The new study evaluated the diversion impacts of six different truck configurations: 91,000 pound single trailer trucks with six axles; 97,000 pound single trailer trucks with six axles; 80,000 pound double 33 ft trailer trucks; 91,000 pound double 33 ft trailer trucks; 97,000 pound double 33 ft trailer trucks; and 120,000 pound double 33 ft trailer trucks.
- The new study did not attempt to estimate the likely increase in rail operating and capital costs that would result from changes to container and/or trailer dimensions.

Findings

The diversion volumes vary significantly by truck configuration. For example, an increase in allowed total gross truck weights from 80,000 to 91,000 pounds (but with no change in trailer length) is estimated to result in the diversion of 2.6 million annual railroad carloads and 1.8 million intermodal units. Alternatively, an increase of truck weights to 120,000 pounds combined with twin 33-foot trailers leads to a predicted diversion of 7.5 million annual rail carloads and 8.5 million diverted intermodal shipments. The diversion estimates for each configuration can be found in the table below.

Rail Traffic Diversions (net loss after 5 years)				
Configuration	**Intermodal**	**% of Total**	**Carload**	**% of Total**
91,000 lbs. - Single	1,841,320	12.7%	2,654,986	20.4%
97,000 lbs. - Single	3,042,936	20.9%	4,287,168	33.0%
80,000 lbs. Double 33s	2,857,553	19.6%	29,724	0.2%
91,000 lbs. Double 33s	3,691,558	25.3%	2,654,986	20.4%
97,000 lbs. Double 33s	4,668,003	32.1%	4,287,168	33.0%
120,000 lbs. Double 33s	8,507,972	58.4%	7,517,974	57.8%

Environmental Impacts of Longer and Heavier Trucks

Prepared by CABT, January 2021

Policymakers are tasked with addressing severe environmental problems that are central to climate change. Transportation is the largest contributor of greenhouse gases, and within the freight sector, trucking represents the majority of harmful emissions. A major issue surrounding transportation policy is the most efficient way to move freight and the goods people need in their everyday lives, with some calling for longer and heavier trucks as the solution. Proposals include increasing the weight limit of trucks from 80,000 pounds to 91,000 pounds and the length of double trailers from 28 feet to 33 feet, also known as "double 33s". As we work towards addressing climate change, allowing bigger trucks would represent a significant step backwards.

Proponents of these bigger trucks claim significant environmental benefits but rely on the false premise that bigger trucks mean fewer trucks. This simplistic view ignores the complex dynamics of shipping rates and shipper choices. Once accounted for, we see a dramatic shift of both intermodal and carload freight away from the rails to our roads. In terms of both fuel use and emissions, rail is far more environmentally friendly on a ton-mile basis.[1]

Recent research on the subject found that proposals for bigger trucks could lead to an increase of as much as 600 billion ton-miles of truck traffic, resulting in an additional 4.27 billion gallons of fuel burned and 55.58 million tons of carbon emissions.

Diversion

The fundamental issue at hand is that of diversion from other modes of transportation, particularly rail. Increasing truck size and weight shifts the economics of shipping, leading to large amounts of freight diverted from the rails to our roads.

Bigger truck proponents rely on the argument that "bigger trucks mean fewer trucks", utilizing flawed data from the USDOT that theorized minimal diversion. There are two ways to derive diversion estimates. The USDOT utilized a deterministic model, relying on restrictive assumptions about the relationships between carrier costs, the resulting shipping rates and the choices of shippers. Our research uses actual available data to estimate the responsiveness of modal choice to changes in the price of transportation alternatives. These elasticity estimates are used to simulate the effect on traffic shares under the new rate structure.

Our data-driven econometric estimates identify large amounts of diverted freight associated with proposals allowing double 33s and increasing the national weight limit to 91,000 pounds.[2]

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[1] American Association of Railroads; 2020. *Freight Rail and Preserving the Environment.*

[2] Mingo, Roger D; December 2020. *Another Look at FHWA's Analysis of Twin 33 and Six-axle Single Combination Vehicles in the 2015 Comprehensive Truck Size and Weight Study*

Table 1 – Summary of Carload Traffic Diversions

Gross Truck Weight (Pounds)	Configuration	Estimated Cross-Price Elasticity	Estimated Unit Cost Change	Total Diverted Carloads at 5-Years*	Percentage of Subject Carloads**
80,000	Twin 33-Foot	0.411	-16.0%	29,724	0.2%
91,000	Single 53-Foot	0.301	-15.0%	2,654,986	20.4%
97,000	Single 53-Foot	0.301	-25.7%	4,287,168	33.0%
120,000	Twin 33-Foot	0.301	-52.7%	7,517,974	57.8%

* Reflects cumulative annual total of diverted carload traffic after five-year period.
** Denominator = all carload traffic within selected commodity groups.

Table 2 – Summary of Intermodal Traffic Diversions

Gross Truck Weight (Pounds)	Configuration	Estimated Cross-Price Elasticity	Estimated Unit Cost Change	Total Diverted Intermodal Units at 5-Years*	Percentage of Subject Intermodal Units**
80,000	Twin 33-Foot	0.476	-16.0%	2,857,553	19.6%
91,000	Single 53-Foot	0.476	-15.0%	1,841,320	12.7%
91,000	Twin 33-Foot	0.476	-11.3%	3,691,558	25.3%
97,000	Single 53-Foot	0.476	-25.7%	3,042,936	20.9%
97,000	Twin 33-Foot	0.476	-15.3%	4,668,003	32.1%
120,000	Twin 33-Foot	0.476	-34.4%	8,507,972	58.4%

* Reflects cumulative annual total of diverted intermodal traffic after a five-year period.
** Denominator = all intermodal traffic.

The double 33 foot configuration could cause a 19.6% diversion of intermodal traffic to truck. A weight increase to 91,000 pounds was associated with a 20.4% diversion of carload units and a 12.7% diversion of intermodal loads.

Unlike data used by proponents of bigger trucks, our data relies on an empirical approach utilizing decades of actual pricing, providing a more accurate prediction of shipper responses. Taking this more thorough examination into account, it is clear that bigger trucks do not mean fewer trucks, and in fact lead to a net increase in total vehicle miles traveled by heavy vehicles. The data shows that for the 91,000-pound configuration, total large truck vehicle miles traveled would increase by 17.49 billion, representing a 10.7% overall increase. For double 33s, there would be an increase of 2.18 billion miles in travel by large trucks.

Fuel Use

With more accurate diversion data, we can calculate the amount of fuel needed to haul diverted freight by plugging correct variables into existing USDOT calculations.

Rail transportation is inherently more fuel efficient, averaging 492 ton-miles per gallon[3]. Truck transportation averages 121 ton-miles per gallon.[4]

The resulting fuel use and subsequent emissions by trucks carrying diverted loads is as follows[5]:

Fuel/Emission Changes by Configuration	**91K**	**Twin 33**
Fuel Change (Billion Gals)	3.53	0.74
Carbon Emissions (Million Tons)	37.49	18.09

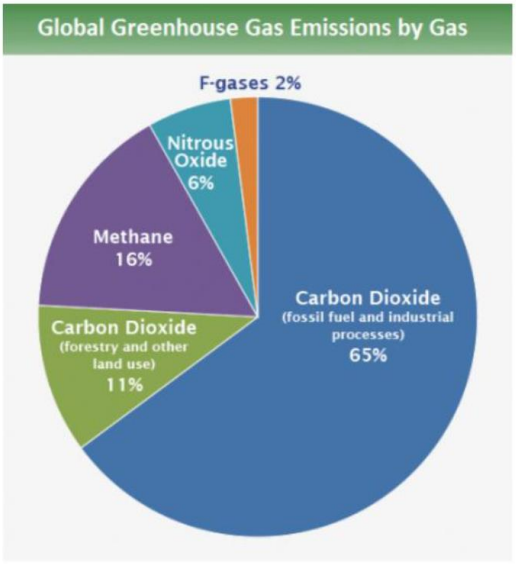
[3] CSX; 2020. *The CSX Advantage: Fuel Efficiency.*
[4] Bureau of Transportation Statistics; 2020. *Combination Truck Fuel Consumption and Travel*. Calculation assumes an average 20-ton freight capacity.
[5] Mingo, Roger D; December 2020. *Another Look at FHWA's Analysis of Twin 33 and Six-axle Single Combination Vehicles in the 2015 Comprehensive Truck Size and Weight Study*

Emissions

Transportation represents the largest share of greenhouse gas emissions by industry[6] and must be at the focal point of our efforts to combat climate change.

The increased emissions stemming from the diversion of freight from our rails to our roads is deeply concerning. A weight increase to 91,000 pound trucks would lead to an additional 37.49 million tons of carbon emissions stemming from truck freight. Adoption of double 33s would result in an additional 18.09 million tons of carbon dioxide emissions.

Carbon dioxide is responsible for 76% of all greenhouse gas emissions[7] and must be the focus of our efforts to combat climate change.



[6] United States Environmental Protection Agency; 2020. *Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions 1990-2018*

[7] Intergovernmental Panel on Climate Change; 2014. *Climate Change 2014: Mitigation of Climate Change*