



Freight Train Length

KEY TAKEAWAY: Railroads carefully consider several factors when determining train length. Thanks to improved infrastructure, advanced modeling tools, training programs and technological advancements, railroads have safely increased train length while improving overall safety record, enhancing fuel efficiency, and reducing GHG emissions.

BACKGROUND

Railroads have operated millions of trains exceeding 8,500 feet without incident in the past 80 years. The industry's [safety record](#) has improved even though trains have increased in length. Since 2000, based on FRA data, there has been a:

- 30% drop in derailment rates for all railroads since 2000.
- 75% decrease in the hazardous materials (hazmat) accident rate since 2000 based on preliminary data and per carload, is at its lowest rate ever.
- 42% reduction in Class I railroads' mainline accident since 2000.
- 63% drop in the rate of injuries and fatalities for Class I railroad employees since 2000, reaching an all-time low in 2023.

CLASS I RAILROAD TRAIN LENGTHS

What HF3499/SF4161 bill would dub as "long trains" have operated safely for decades in Minnesota, and the industry's safety record has dramatically improved during that period. In 2021, median train length on Class I railroads — meaning half were longer, half were shorter — was 5,400 feet. Just 10% of trains were longer than 9,800 feet and fewer than 1% of trains were longer than 14,000 feet.

RAILROADS ARE COMMITTED TO SAFE OPERATIONS, NO MATTER THE TRAIN LENGTH.

While processes differ slightly by company, railroads consider several factors when determining how rail cars and locomotives are arranged and train length. These factors include but are not limited to commodity mix, terrain, track conditions, layout, congestion, crew training and more.

- **Investments:** Railroads have added new sidings and lengthened existing sidings on routes used for longer trains, which allow trains of various lengths to make way for other trains safely. The locomotive, car fleets, and track have been upgraded by freight rail's capital expenditure programs, averaging well over \$23 billion a year over the last five years.
- **Operations:** Railroads review the characteristics of a route, incorporate lessons learned for the most effective operation of trains on that route, and confirm the safe operation by such measures as supervised pilot runs and modeling simulations that predict the performance of changes to a train's makeup.

- **Training:** Railroads offer training, both simulator-based and on-the-job, for in-cab technologies like energy management systems, PTC, and distributed power. This includes adapting to changes in train composition or a crew's introduction to new territories. The FRA mandates that locomotive engineers demonstrate proficiency on assigned routes, with annual railroad evaluations.

TECHNOLOGY ENABLES LONGER TRAINS. LIMITING THEM WOULD HURT THE ENVIRONMENT.

Technologies like distributed power (DP) allow safe operation of longer trains. DP places locomotives throughout the train, improving control and handling, especially on challenging terrain. "Train builder" algorithms further optimize train composition for efficiency and safety.

Moving a given amount of freight in fewer trains requires less fuel. Because GHG emissions are directly related to fuel consumption, longer trains mean reduced GHG emissions. That's why capping train length is not environmentally sound. AAR analysis of federal data finds: If 25% of the truck traffic moving at least 750 miles went by rail instead, annual greenhouse gas emissions would fall by approximately 13.6 million tons. Emissions would rise further if a cap on train length and the subsequent reduction in rail efficiency caused freight to divert to trucks, which are significantly less fuel efficient than rail.

THE FEDERAL GOVERNMENT OCCUPIES THE SPACE FOR TRAIN LENGTH POLICY.

HF3499/SF4161 would limit the length of a train in the State of Minnesota to 8,500 feet, but the United States Supreme Court held long ago that a similar effort by the State of Arizona was unenforceable.¹ The Supreme Court ruled in *S. Pac. Co. v. Arizona* (1945) citing two key reasons. First, the Commerce Clause of the U.S. Constitution limits state laws that burden interstate commerce. Second, the Court found the Arizona law decreased safety by requiring more, shorter trains, increasing overall traffic.

Congress has further created a preemptive federal regulatory scheme in recognition of the critical role that the national rail network plays in our economy, and with the intent to implement uniform rail operating and safety standards across the country. Congress enacted the ICCTA in 1995 with language explicitly stating that the STB's jurisdiction over transportation by rail carriers and the operation of their networks is *exclusive*.² Congress defined the broad scope of the STB's exclusive authority to include the movement of locomotives, railcars, and equipment, and the operation of a railroad facilities.³

Congress wanted to avoid a patchwork of regulations adopted by individual states with potentially parochial interests that would impede the flow of interstate commerce.

¹ *S. Pac. Co. v. Arizona*, 325 U.S. 761 (1945).

² 49 USC § 10501(b).

³ 49 USC §§ 10501(b)(1), 10102(g).