

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY OF TRANSPORTATION

DOCKET NO. DOT-OST-2021-0036
NOTIFICATION OF REGULATORY REVIEW;
EXECUTIVE ORDERS 13990 AND 13992

COMMENTS OF
THE ASSOCIATION OF AMERICAN RAILROADS
AND THE AMERICAN SHORT LINE AND REGIONAL
RAILROAD ASSOCIATION

The Association of American Railroads (“AAR”) and the American Short Line and Regional Railroad Association (“ASLRRA”), on behalf of themselves and their member railroads (“the Railroads”), submit the following comments in response to DOT’s May 5, 2021, notice of regulatory review.¹ DOT has requested comment regarding the consistency of existing regulations and other agency actions with the policies and objectives set forth in Executive Orders (“EO”) 13990 (“Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis”) and 13992 (“Revocation of Certain Executive Orders Concerning Federal Regulation”).² The policy goals established in EO 13990 include, among other things, confronting the climate crisis, reducing greenhouse gas (“GHG”) emissions, prioritizing

¹ AAR is a trade association whose membership includes freight railroads that operate approximately 83% of the line-haul mileage, employ 95% of the workers, and account for 97% of the freight revenues of all railroads in the United States; and passenger railroads that operate intercity passenger trains and provide commuter rail service. ASLRRA is a non-profit trade association representing the interests of approximately 500 short line and regional railroad members and railroad supply company members in legislative and regulatory matters. Short lines operate 50,000 miles of track in 49 states, touching in origination or termination one out of every four cars moving on the national railroad system, serving customers who otherwise would be cut off from the national railroad network. 86 Fed. Reg. 23,876 (May 5, 2021).

² 86 Fed. Reg. 7,037 and 7,049 (Jan. 25, 2021).

environmental justice and ensuring access to clean air. EO 13992 establishes the President’s policy on use of available tools to confront urgent challenges facing our nation, specifically including climate change.

The Railroads comment below on two recent rulemaking proceedings undertaken by DOT’s Federal Railroad Administration (FRA) that directly further climate and environmental goals described in EOs 13990 and 13992.

America’s Freight Railroads – Safe & Environmentally Sound

The Railroads are committed to operating the safest, most efficient, cost effective, and environmentally sound freight rail transportation system in the world. To that end, railroads account for roughly 40% of U.S. long distance freight volume (measured by ton-miles) — more than any other mode of transportation, but only 2.1% of U.S. transportation-related GHG emissions.³ While safely transporting the nation’s critical goods, the freight rail industry is working to further increase fuel efficiency, reduce GHG emissions, and make rail operations even more sustainable and environmentally friendly. These initiatives directly align with the goals of EOs 13990 and 13992 with respect to climate change and the environment.

For example, due to technological enhancements and improved operating practices, railroads were 82% more fuel efficient in 2019 than in 1980.⁴ These gains were achieved, in part, via locomotive technology advances and operating approaches involving longer and more

³ According to the U.S. Environmental Protection Agency (EPA). See AAR, FREIGHT RAILROADS & Climate CHANGE, March 2021; <https://www.aar.org/wp-content/uploads/2021/02/AAR-Climate-Change-Report.pdf>.

⁴ *Id.* at AAR, FREIGHT RAILROADS & CLIMATE CHANGE.

efficiently controlled/planned trains. In 2019 alone, U.S. freight railroads consumed 656 million fewer gallons of fuel and emitted 7.3 million fewer tons of CO₂ than they would have if freight railroad fuel efficiency had remained at 2000 levels.⁵

DOT Rail Rulemakings Furthering the Policies of EOs 13990 and 13992

Safety is the first priority of both DOT and the Railroads, and two recent FRA rulemaking proceedings move safety forward while also directly advancing the President’s climate and environmental goals. The Railroads believe these rulemakings serve as examples of how regulatory modernization that facilitates greater efficiency can also deliver improvements in safety and environmental impact.

1. “Miscellaneous Amendments to Brake System Safety Standards and Codification of Waivers,” 85 Fed. Reg. 80,544 (Dec. 11, 2020) (“Brakes 1” Final Rule)

FRA’s final rule implementing miscellaneous amendments to FRA’s brake system safety standards and other regulations was published in December 2020 and has now been in effect for approximately six months.⁶ As discussed below, in addition to the safety benefits flowing from that rule, ***the rule is already on pace to deliver an estimated reduction of locomotive CO₂ emissions exceeding 25,000 tons every year.*** These reductions are occurring right now, and are possible because FRA’s rule permitted the railroads to modernize and make their operations more efficient, while reducing safety risks to employees and the public.

⁵ *Id.*

⁶ A group of labor organizations has challenged the final rule in the U.S. Court of Appeals for the District of Columbia Circuit. SMART-TD, BLET v. FRA, et al; USCA Case #21-1049.

The final rule modified FRA regulations governing train air brake inspections (49 C.F.R. Part 232), in part by codifying longstanding industry waivers, many of which were adopted by DOT during the Obama Administration. Safety data gathered under those waivers demonstrated that more advanced testing methods for automated single car air brake tests, even when conducted on longer intervals, result in an 18% and 58% reduction in repeat freight car brake failures, respectively, when compared to the older test method conducted at 12-month intervals.⁷ In pertinent part, the final rule also extends the time period between certain air brake inspections in situations where cars are not connected to an air source (which often required idling of locomotives to comply with previous time off-air limitations, and also often while manual inspections of rail car air brakes are performed). FRA likewise noted in the final rule that extensive data in the rulemaking record clearly demonstrated the safety of extending the maximum off-air time period, including data showing “fewer undesired and unintended emergency brake applications occurring in Canada than in the U.S”, where the longer off-air time limit has been in place since 2008.⁸ FRA also recognized these updates to the regulation were appropriate due to the proliferation of technological improvements to air brake systems that have been implemented in the many decades since FRA largely adopted the previous restrictions, and which “have been beneficial in improving the overall health of brake systems.”⁹

⁷ 85 Fed. Reg. at 80,559.

⁸ *Id.* at 80,553.

⁹ *Id.*

Based on data collected under the existing waivers and via the rulemaking record, FRA indicated the regulation will result in safety improvements, reductions in employee injuries, reductions in harmful emissions, and could lessen the need for trains to occupy highway-rail grade crossings. The rule has the further benefit of harmonizing regulatory requirements between the U.S. and Canada, which has authorized longer off-air time periods since 2008.

In addition, because the final rule significantly reduces the need for unnecessary locomotive idling and operation, corresponding reductions in CO₂ and other harmful emissions are already being realized. According to the EPA's calculator, the estimated reductions of CO₂ emissions that can be achieved under the final rule represent the equivalent of the sequestration of carbon by over 28,000 acres of U.S. forest every year (a number which may increase if future freight traffic levels increase to match population growth).¹⁰ The final rule also realizes benefits for neighborhoods adjacent to railroad facilities and right-of-way, in the form of less locomotive idling noise, emissions, and trains occupying highway-rail grade crossings.¹¹

As noted, this rule currently is subject to legal challenge from labor organizations, which prefer the older requirements involving potentially more frequent manual testing and inspections. Given the safety and environmental benefits already accruing under the rule, and the Administration's explicit direction in EOs 13990 and 13992 that agencies should take to

¹⁰ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

¹¹ See Brakes 1 final rule's accompanying Regulatory Impact Analysis (document no. FRA-2018-0093-0022); available online at: <https://www.regulations.gov/document/FRA-2018-0093-0022>.

ensure that their rulemakings are consistent with environmental goals, the Railroads hope and expect DOT to vigorously defend its decision to finalize this rule.

2. “Amendments to Brake System Safety Standards Governing Operations Using an Electronic Air Brake Slip System”, 86 Fed. Reg. 3,957 (Jan 15, 2021) (“eABS NPRM”)

This FRA NPRM proposes to modernize certain other requirements for train air brake inspections through the use of electronic Air Brake Slip (eABS) systems instead of paper train inspection records. The eABS systems, which have been (and are still being) voluntarily developed by the Railroads, allow precise tracking of freight car inspections, mileage, and maintenance on an individual car basis. Existing regulations are based in part on considerations related to paper inspection records for an entire train, which pre-date railroads’ technological ability to accurately and efficiently track inspections and mileage electronically on a car-by-car basis. As a result, trains are required to stop more often than necessary for certain mechanical inspections and are limited in their ability to perform multiple set-offs or pick-ups, due to the previous recordkeeping limitations that necessitated treatment of all the cars in a train as a single unit to be managed by a paper record. The eABS system provides robust and constantly updated car-specific data. Coupled with the Railroads’ use of modern preventative and predictive maintenance strategies, wayside detectors and machine vision stations, modernized mechanical equipment components, and improved employee training programs, eABS systems permit far more efficient – and safe – train operations.¹² But this common sense modernization proposal offers substantial environmental benefits as well.

¹² As FRA explains in the NPRM, there are “fewer than two reported injuries per year that are related to causes that could have been identified in the course of an effective brake test.” 86 Fed. Reg. at 3,964. FRA accident reports show that in 2020 there were zero injuries or fatalities as a result of airbrake-caused reportable

Reduced locomotive idling and switching movements that flow from FRA's proposals will directly reduce GHG emissions and diesel fuel consumption. If finalized consistent with AAR's comment, AAR estimates a reduction of over 52,000 tons of additional CO2 emissions each year.¹³ Combined, the Brakes 1 and eABS rules promise a reduction of almost 80,000 tons per year of CO2 emissions. This estimate does not include resulting reductions in additional criteria pollutant emissions beyond CO2 emissions, nor does it attempt to quantify the value to the surrounding communities of reduced train idling and noise and less frequent need to occupy highway-rail grade crossings.

* * *

AAR's calculations of the reduced GHG emissions represented by these two FRA rulemaking proceedings is attached. This document has also been shared with EPA. The Railroads look forward to the opportunity to discuss with DOT, EPA, and other federal and state stakeholders the data and resources informing AAR's estimates, and ways in which

accidents (the railroad employee casualty rate was a record low in 2020). However, hundreds of employees are injured every year while climbing on and off railroad equipment, while operating handbrakes to secure freight cars, operating switches, and via slips/trip/falls and sprains/strains while walking on right of way in the railroad operating environment in varying weather conditions in order to conduct inspections and other duties. Mechanical-caused have also decreased dramatically in the past several decades, including 27% since 2000, according to FRA safety data.

¹³ See Comment of AAR and ASLRRRA (document no. FRA-2018-0093-0015); available online at: <https://www.regulations.gov/comment/FRA-2018-0093-0015>.

further emissions reductions can be achieved by freight railroads by modernizing DOT regulations.

Respectfully submitted,



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ATTACHMENT

Carbon Dioxide Emission Reductions Calculations

General Inputs

Diesel fuel consumed per hour of locomotive idling: 4.3 gallons.

Carbon Dioxide emissions per gallon of diesel fuel consumed: 22.38 lbs.

➤ **24 Hours Off Air Final Rule (85 Fed. Reg. 80,544 (Dec. 11, 2020))– Based on FRA assumptions**

Reduced Locomotive Idling to Avoid Exceeding the Off-Air Threshold: An annual equivalent of 40 locomotives would be allowed to return to service, versus remain hooked up to train consists to keep the brake systems on air. Such locomotives would idle 22 hours per day, 360 days a year for a total of 316,800 annual hours to keep consists on air. This translates into 1,362,240 gallons of diesel fuel burned annually. (316,800 hours of idling x 4.3 gallons of diesel burned per hour) and 15,246 tons of reduced carbon dioxide emissions annually (1,362,240 gallons of diesel fuel x 22.384 lbs of carbon dioxide per gallon of diesel fuel / 2000 lbs per ton).

Fewer Brake Tests: On average, FRA estimates 110,641 brake tests would be saved annually. FRA assumes there are 2 locomotives on each train and brake tests performed by two employees take one hour to perform. This translates into 951,513 gallons of diesel fuel burned annually. (110,641 brake tests x 2 locomotives per test x 4.3 gallons per locomotive per hour) and 10,649 tons of reduced carbon dioxide emissions annually (951,513 gallons of fuel x 22.384 lbs of carbon dioxide per gallon of diesel fuel / 2000 lbs per ton).

The total carbon dioxide emissions reduction for this final rule is 25,896 tons per year. Although FRA did not calculate the reduction in carbon dioxide emissions that will result from this rule, it did calculate the effect of the rule on nitrogen oxide and particulate matter emissions. However, FRA underestimated the reductions in NOx and PM emissions that will result by a factor of 4.

24 Hrs Off Air (Using FRA Assumptions Final Rule Economic Analysis)						
	Avg Annual Hrs	Gallons/hr idle locomotive		Gallons fuel/yr	Lbs CO2/gallon Diesel	Tons CO2/Yr
1. Idling Locomotive	316,800	4.3		1,362,240	22.384	15,246
	Avg Annual Events	Gallons/hr idle locomotive	Locomotives/train	Gallons fuel/yr	Lbs CO2/gallon Diesel	Tons CO2/Yr
2. Brake Tests	110,641	4.3	2	951,513	22.384	10,649
Total 24 Hrs Off Air						25,896
* 316,800 = 40 locomotives, 22 hrs/day, 360 days/yr						

➤ **eABS Proposal (86 Fed. Reg. 3,957 (Jan. 15, 2021))**

The average duration of train stops is 2 hours and the average number of locomotives per trains that stand to benefit from the increased flexibility proposed is 2.94. The amount of diesel fuel consumed per train stop is 25.28 gallons (2 hrs x 4.3 gallons/hr of locomotive idling x 2.94 locomotives/train).

Additional Set Outs & Pick Ups: There are 120,991 train stops impacted and 52.7%, or 63,762 of these can be avoided under the proposal. This equates to 1,612,165 gallons of fuel that can be saved annually (63,762 stops/yr x 25.28 gallons of fuel per stop) and 18,043 tons of reduced carbon dioxide emissions annually (1,612,165 gallons of fuel x 22.384 gallons of carbon dioxide per gallon of diesel fuel / 2000 lbs per ton).

In addition, a considerable amount of fuel is used to accelerate and regain track speed following a train stop. The average number of cars in a train was 75 in 2019. While track speed varies, an average of 50 mph is representative for locations where stops would be prevented. Assuming 36 loaded cars and 39 empty cars in a consist as well as 6,665 tons per train, it takes 5.81 minutes and an additional 30.8 gallons of diesel fuel to reach track speed. For the 63,762 stops for set outs and pick ups avoided, this equates to an additional 1,953,870 gallons of fuel that can be saved annually (63,762 stops/yr x 30.8 gallons of fuel per stop) and 21,980 tons of reduced carbon dioxide emissions annually (1,953,870 gallons of fuel x 22.384 gallons of carbon dioxide per gallon of diesel fuel / 2000 lbs per ton). Although additional fuel is also consumed to stop the train, that amount is not accounted for in this analysis.

Increased Mileage Between Air Brake Tests: Approximately 45,000 air brake tests would be saved annually. This translates into 1,137,780 gallons of diesel fuel saved annually (45,000 tests x 25.28 gallons of fuel per stop) and 12,734 tons of reduced carbon dioxide emissions annually (1,137,780 gallons of fuel x 22.384 gallons of carbon dioxide per gallon of diesel fuel / 2000 lbs per ton).

The total carbon dioxide emissions reduction for the AAR eABS proposal is 52,575 tons per year.

eABS (AAR proposal -- input provided in comments to FRA NPRM)									
	Avg train stop duration (hrs)	Gallons/hr idle locomotive	Avg # locos/train	# idling events/yr	Train Stops Saved	fuel consumed/ event	Gallons fuel/yr	Lbs CO2/ gallon Diesel	Tons CO2/Yr
1 SetOuts/PickUps	2	4.3	2.94	120,991	63,762	25.28	1,612,165	22 38	18,043
	Avg duration (minutes)				Train Stops Saved	fuel consumed/ event	Gallons fuel/yr	Lbs CO2/ gallon Diesel	Tons CO2/Yr
... Train Acceleration	5.81				63,762	30.8	1,963,878	22 38	21,980
	Avg train stop duration (hrs)	Gallons/hr idle locomotive	Avg # locos/train		Brake tests saved	fuel consumed/ event	Gallons fuel/yr	Lbs CO2/ gallon Diesel	
2. Mileage Increase	2	4.3	2.94		45,000	25.28	1,137,780	22.384	12,734
TOTAL unlimited Set Outs & Pick Ups and Mileage Increase									52,757