BEFORE THE FEDERAL RAILROAD ADMINISTRATION

Docket No. FRA-2014-0033

TRAIN CREW STAFFING

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS

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The Association of American Railroads (AAR), on behalf of itself and its member railroads, respectfully submits these comments on the Federal Railroad Administration's Notice of Proposed Rulemaking in Docket No. FRA-2014-0033, entitled "Train Crew Staffing." AAR is a trade association whose membership includes freight railroads that operate 83 percent of the line-haul mileage, employ 95 percent of the workers, and account for 97 percent of the freight revenues of all railroads in the United States, as well as passenger railroads that operate intercity passenger trains and provide commuter rail service.

INTRODUCTION

The preamble to the proposed rule begins with the acknowledgement that "FRA cannot provide reliable or conclusive statistical data to suggest whether one-person crew operations are generally safer or less safe than multiple-person crew operations." 81 Fed. Reg. 13918, 13919. From this premise, the agency then goes on to *prohibit* one-person crew operations, subject to limited exceptions and a standardless "special approval procedure," on the theory that multiple-person crews are necessary to ensure safety.

The proposed rule is a textbook example of arbitrary and irrational regulation. If the FRA lacks any "reliable or conclusive" evidence that one-person crews are less safe than multiple-person crews, it has no basis for prohibiting one-person crews. The FRA has statutory authority to issue regulations for "railroad safety." 49 U.S.C. § 20103(a). It is not a permissible exercise of that authority to issue regulations without any evidence that the regulations will actually further safety. In fact, the NPRM acknowledges that prohibiting one-person crews may actually *jeopardize* safety. *See* 81 Fed. Reg. at 13932

(concluding that "it is possible that one-person crews have *contributed* to the improving safety record" of the rail industry) (emphasis added).

The FRA has historically treated crew size as a labor issue addressed through collective bargaining. The agency's proposal to regulate crew size is an abrupt break from the settled historic practices that have always governed the industry. Congress did not direct the FRA to regulate in this area. Congressional silence, coupled with the FRA's longstanding approach of leaving crew size to the collective bargaining process, demand substantial evidence justifying the need for this regulation—a standard the NPRM does not come close to meeting.

The FRA's proposal to mandate two-person crews comes at a time when the Department of Transportation—and the nation generally—have embraced regulatory flexibility and the idea that safety is advanced by encouraging rather than stifling technological innovation. Earlier this year, Secretary Foxx "announced a 10-year, $3.9 billion investment that would . . . remove roadblocks and red tape that have stalled development of autonomous technologies," such as self-driving vehicles. Michael Martinez, Detroit News, *Ford, Google, Others Form Self-Driving Advocacy Group* (Apr. 26, 2016).

The NPRM takes precisely the opposite approach by freezing the status quo. In the railroad context, just as in other dynamic industries, locking in the status quo will have the inevitable effect of fostering stagnation and frustrating innovation, stalling the development of new technologies that will further promote safety. In fact, by locking railroads into the status quo with a minimum crew-size regulation at the same time it is

promoting the development of autonomous vehicles, the Department of Transportation will be abandoning a level playing field and placing railroads at a competitive disadvantage relative to the trucking industry.

Railroads are the safest form of surface transportation—by far. Technological advances have enabled the railroads to reduce their accident rates to historic lows. The industry's safety record is likely to continue improving as Positive Train Control comes on-line—a new technology the industry is spending billions of dollars to implement and that will protect against human error by automating safety-related functions currently performed by crewmembers. The FRA Administrator recently stated that "I think one of the best ways for industries and regulators to improve safety . . . is to embrace technology and the data that comes along with that technology." *FRA's Feinberg to NARS: Embrace technology to improve safety*, Progressive Railroading (June 1, 2016). The NPRM stands in stark contrast to the Administrator's statement: the proposed rule discounts the safety benefits that technology has already produced—and will produce in the future once PTC has been fully implemented—and rejects the idea that data is a necessary predicate to risk assessment and regulation.

Against this backdrop, the FRA's proposal to mandate two-person crews makes no sense—and conflicts with the judgment of the National Transportation Safety Board. In the course of investigating the recent Amtrak derailment outside of Philadelphia, the NTSB examined the question of crew size. The NTSB urged the FRA to collect data *before* it regulates. The NTSB recommended that the FRA *first* modify its accident report form to include the number of crewmembers in the controlling cab at the time of

an accident—and *then* use the data it gathers to evaluate the safety adequacy of current crew-size regulations. *See* NTSB, RAR-16/02, *Derailment of Amtrak Passenger Train 188* at 18-19 (2016). The FRA's approach—regulate first, then gather the evidence to see whether its regulation was justified—gets it exactly backward.

The FRA acknowledges there is no emergency requiring immediate action on crew size. *See* 81 Fed. Reg. at 13943. Accordingly, there is no reason the FRA cannot proceed as the NTSB recommends, by collecting the necessary evidence and *then* deciding whether to regulate. In the FRA's draft of the NPRM, the FRA claimed, implausibly, that "it would take years to change the accident/incident reporting regulations to potentially begin collecting such data." But when FRA submitted its draft to the Office of Information and Regulatory Affairs (OIRA) for review, OIRA deleted that claim. *See* OIRA Redline at 9.

In grasping for a safety justification for a two-person crew mandate, the NPRM relies heavily on anecdotes from two derailments, offering a play-by-play analysis of how the crewmembers responded in the immediate aftermath of the accidents. It also relies on a series of studies extolling the benefits of teamwork. None of this comes close to constituting substantial evidence supporting the proposed rule. One-person operations have long been used throughout the United States and the world. If one-person operations were an unsafe practice, surely the FRA would have at least *some* evidence demonstrating this. But the FRA admits it has none.

In fact, the evidence that *does* exist shows that one-person crews are at least as safe as two-person crews. One-person operations have long been used by shortline

railroads in the United States. The Indiana Rail Road Company, for example, has been using one-person crews for nearly 20 years with an exemplary safety record. *See* Ex. D at 1. Likewise, passenger trains in the United States typically operate with one person in the cab. And many foreign railroads, including freight railroads throughout Europe, have used one-person crews for decades, achieving a safety record the FRA deems "acceptable." 81 Fed. Reg. at 13932. The data establishing the strong safety record of one-person operations is set forth in studies that AAR provided to the FRA in early 2015 but that were largely ignored in the NPRM. These studies are attached again to this comment, along with a new study containing additional data and analysis concerning European operations.

The FRA appears to have predetermined the outcome of this process rather than make a fair appraisal of the evidence with an open mind. It spurned the collaborative RSAC process by declaring in advance the only result it would accept. And when AAR and others urged the FRA to review the available data to determine whether crew size affected safety, FRA staff stated that the agency did not want "to use data to decide whether this issue is legitimate, or not." *See* Minutes of RSAC Train Crew Working Group (Dec. 18, 2013) at pp. 10-12.

In this regard, a review of OIRA's extensive edits to the FRA's draft NPRM raises disturbing concerns. Throughout the document, OIRA ordered the FRA to delete claims—such as the assertion that "it would take years" just to modify a data-gathering regulation—that are implausible, overstated, or simply untrue. At the same time, OIRA directed the FRA to disclose facts the FRA did not want to publicly mention, such as the

critical fact that the "FRA does *not* have information that suggests that there have been any previous accidents involving one-person crew operations that could have been avoided by adding a second crewmember." OIRA NPRM Redline at 16 (emphasis added). That OIRA felt duty-bound to make such extensive corrections to a document the FRA drafted in an attempt to justify its crew-size regulation raises serious concerns about the process the FRA followed in this case.

The FRA should withdraw its proposed regulation. It will harm AAR's members, including those railroads that will have to make immediate changes to their operations. *See* 81 Fed. Reg. at 13919. Even those railroads that are not forced to make immediate changes will be harmed by being locked into a frozen status quo indefinitely. By mandating a minimum crew size in the absence of any evidentiary support, the regulation will harm both the industry and the public by deterring future technological innovations that will further advance safety, by preventing railroads from reducing the cost of providing service, and by undermining the collective bargaining process.

It is no answer to say that railroads may ask for permission to use reduced crews in the future. Although the proposed rule contains "special approval procedures" allowing railroads to seek relief from the two-person mandate, those procedures are standardless and unworkable. They fail to provide any objective criteria that would give railroads certainty as to what they need to do in order to operate with a one-person crew. Instead, the procedures appear designed to give FRA limitless discretion and the power to disapprove one-person operations at the whim of agency staff—or to withhold approval in order to extract concessions from the railroads in other areas.

By contrast, the NTSB's recommendation—that the FRA begin by collecting data on the relationship between crew size and safety—has merit. Indeed, the NTSB's recommendation tracks one of the alternative proposals identified by the FRA: that the agency "not require railroads using or aspiring to use less than two person crews to attest but establish a data collection process in which FRA would collect the data necessary to identify problematic one-person operations [and] conduct further review of an operation if warranted by the data." RIA at 68; *see also* 81 Fed. Reg. at 13958. As the RIA explains, "[t]he advantages of this alternative [are] that it would provide FRA comprehensive information about one-person crew operations and allow railroads the flexibility to continue or start-up less than two person crews without incurring the cost of FRA approval." RIA at 68-69.

Absent any evidence that one-person operations are unsafe, there is simply no basis for enacting a general prohibition on one-person crews. The FRA should allow each railroad to make its own decisions as to crew size—including whether and under what circumstances one-person or autonomous operations may be appropriate—provided that the railroad can maintain or improve current levels of safety, as measured by objective data. Particularly at a time when regulators, industries, and society generally are all moving toward more flexible regulatory models that turn on performance-based outcomes rather than prescriptive mandates, the FRA should not take the railroad industry in precisely the opposite direction.

BACKGROUND

1. "Historically, crew size has been an issue for labor relations." 81 Fed. Reg. at 13937. Debates over crew size have been resolved through collective bargaining rather than under the guise of safety regulation. As discussed in detail in the attached Statement of A. Kenneth Gradia, "crew size has historically been one of the most important—if not *the* most important—issue in bargaining with the operating crafts since at least World War II," and "the long-standing expectation of both sides—carriers and unions—is that crew size is and will remain a subject of collective bargaining." Ex. F at ¶ 3.

The Gradia Statement reviews the long history of debates over crew size, and the unions' recurring argument that railroads cannot operate safely with reduced crews. That argument has been repeatedly evaluated by numerous presidential commissions, emergency boards, and arbitrators, and "[o]ver the long history of this issue, most neutral fact-finders have concluded that there is no evidence that larger crews are necessary for safety, especially during periods marked by the introduction and maturation of new technology." Ex. F at ¶ 5.

Current FRA regulations do not mandate a minimum crew size. And as recently as 2009, the FRA denied a petition to require multiple-person crews, explaining that it "has no factual evidence" that would justify such a mandate. *See Denial of BLET Petition on RCO and Other Single-Person Operations* (Nov. 10, 2009).

Indeed, as labor relations evolve and technology advances, the need for multiple-person crews—commonly used by Class I freight railroads for mainline operations—is waning. This is consistent with historic trends, as "technology has enabled a gradual

reduction in the number of train crewmembers from about five in the 1960s to two in 2014." 81 Fed. Reg. at 13937. There is a long history of technological improvements in the railroad industry leading to productivity gains while, at the same time, setting new safety records. The advent of diesel locomotives eliminated the need for firemen, for example, and end-of-train devices eliminated the need for a caboose and personnel at the end of the train.

Now, the Class I railroads are in the process of implementing PTC on some 55,000 miles of railroad track (at a total cost of approximately $10 billion plus maintenance). PTC is designed to automatically override certain human errors by positively enforcing mandatory directives—"any movement authority or speed restriction that affects railroad operation." 49 C.F.R. § 220.5. Despite this history of technological improvements decreasing crew size while simultaneously improving safety, the FRA now contends that PTC *prohibits* further crew reductions or, in the case of existing one-person crews, requires an *additional* crewmember.

The FRA has reversed course by seeking to mandate minimum crew-size for the first time in its history. This threatens to "override the settled, historical approach of [the] industry to address crew size through bargaining, with potentially painful consequences for the relationships that are critical to preserving labor peace." Ex. F at ¶ 68. As Ken Gradia explains:

> [M]andating crew size limits by federal regulation would undercut and disrupt the collective bargaining process in a fundamental way. Agreements on crew size are woven into the very fabric of the industry.

> The industry's preferential work rules, rates of pay, and benefits for operating crafts are attributable, at least in part, to trade-offs made with respect to changes in crew size. More specifically, operating employees have received a substantial part of the savings for past crew size reductions in the form of increased compensation. If crew size is set by regulation, it will, as a practical matter, limit the ability of the railroads and the unions to freely bargain for changes in staffing. This will not only overturn settled expectations—it will alter the long-term scope, direction and tenor of bargaining, with consequences that cannot be predicted and could be undesirable for the carriers or the employees (or both).

Id. at ¶ 4.

2. The FRA has broken with traditional practice in another respect—by departing from its normal approach to rulemaking.

AAR and its member railroads have actively participated in the FRA's Rail Safety Advisory Committee (RSAC) since its inception in 1996. The RSAC process brings together stakeholders from the rail industry, labor organizations, and the government, to facilitate communication and the development of realistic rules. The RSAC has worked through many issues in the last twenty years, resulting in consensus-based regulations for many areas of rail safety, including track safety standards, event recorders, locomotive crashworthiness, and conductor certification. As the FRA's website states, the RSAC's mission is to "seek agreement on the facts and data underlying real or perceived safety problems; identify cost effective solutions based on the agreed-upon facts; and identify regulatory options where necessary to implement those solutions." *See* https://rsac.fra.dot.gov/home.php.

The FRA rejected that process here. Rather than follow the RSAC's usual consensus-driven approach, the FRA proceeded by executive fiat.

At the August 29, 2013 RSAC meeting held in response to the derailment near Lac-Mégantic, Quebec, the RSAC accepted task statement 13-05, "Appropriate Train Crew Size." But when the working group convened its first meeting to discuss train crew size—on October 29, just two months later—agency staff members abruptly announced that they had "put Task Statement 13-05 aside" and informed the group that they had already decided "where this process needs to go"—namely, regulations requiring a minimum two-person crew. *See* Minutes of Oct. 29, 2013 meeting of Train Crew Working Group at 12 (in NPRM docket at http://1.usa.gov/1sYFhiw).

AAR recommended that before reaching any conclusions, it would make sense for the working group to at least *consider* the available data. AAR noted the success of this approach in the past, when the FRA, labor, and railroad management collaborated on an analysis of PTC-preventable accidents.

The FRA staff rejected the proposal. They explained that it was uncertain whether the agency's accident database would yield meaningful information concerning crew size in accidents. *See* Oct. 29, 2013 minutes at 11-13; Minutes of Dec. 18, 2013 meeting at 10 (in NPRM docket at http://1.usa.gov/1ZoR1p5). When AAR pointed out that looking at actual data was a logical way to carry out the working group's mandate to "report on whether there is a safety benefit or detriment from crew redundancy, including an analysis of observed safety data and outcomes from current crew deployment practices,"

FRA staff declared that the agency did "not want to use data to decide whether this is a legitimate issue or not." Dec. 18, 2013 minutes at 11-12.

The working group met four more times without reaching consensus. The NPRM states that over the course of these meetings, FRA officials were surprised to learn of the number of railroads operating in the United States with one-person crews. *See* 81 Fed. Reg. at 13938 ("Certainly, high level safety personnel at FRA were unaware of how many railroads, especially freight railroads, were regularly fielding trains with only a one-person crew."). But the agency has known about one-person operations for many years. For example, the FRA has known about and approved Indiana Rail Road's one-person operations since the mid-1990s. In fact, FRA officials worked closely with the railroad's employees to develop the railroad's practices for one-person operations.

The final meeting of the RSAC working group occurred on March 31, 2014. Two years passed before the FRA issued its proposed rule.

DISCUSSION

I. THE PROPOSED RULE CANNOT BE JUSTIFIED ON SAFETY GROUNDS.

The NPRM's preamble acknowledges that the "FRA cannot provide reliable or conclusive statistical data to suggest whether one-person crew operations are generally safer or less safe than multiple-person crew operations." 81 Fed. Reg. at 13919. That statement—which OIRA ordered the FRA to add to the NPRM—should be the beginning and the end of the analysis. If the FRA lacks "reliable" data indicating that two-person

operations are safer than one-person operations, then it has no business mandating minimum crew size.

The FRA's conduct during the RSAC process confirms the irrationality of its "no need for data" approach. As of August 29, 2013, the date on which the RSAC accepted the task entitled "Appropriate Train Crew Size," FRA publicly acknowledged that *it did not know* whether there was a link between crew size and safety. That is why the FRA tasked the RSAC with investigating and "[r]eport[ing] on whether there is a safety benefit or detriment from crew redundancy." 81 Fed. Reg. at 13936. Yet less than two months later, at the initial October 29, 2013 meeting, agency staff announced "that the agency's position on appropriate crew size is that . . . railroad safety is enhanced through the use of multiple crewmembers." *Id*. at 13937. The FRA did not identify what new information it had discovered between August 29, when it asked the RSAC to investigate and report back on whether crew staffing practices affect railroad safety, and October 29, when it announced its determination that safety is enhanced through multiple crewmembers.

The FRA now criticizes AAR for "proclaiming that the lack of safety data showing there was an existing problem should prevail as an argument." 81 Fed. Reg. at 13938. This gets it exactly backward. An agency may not regulate unless it can justify its regulation with substantial evidence that the regulation is necessary. *See* 5 U.S.C. § 706(2)(A). The FRA's misguided premise—that regulation is permissible unless the regulated party can affirmatively prove the contrary—erroneously transfers the burden of proof in administrative law.

By insisting that it "should not have to wait for horrific accidents" to occur before taking action, 81 Fed. Reg. at 13938, the FRA attacks a straw man. No one is arguing that regulation is prohibited until an accident has occurred. Rather, the question is whether there is sufficient evidence of risk to justify *this* regulation. And the answer to that question is plainly no.

The preamble recognizes that "railroads have achieved a continually improving safety record" during a time when average crew-size is being reduced. 81 Fed. Reg. at 13919. According to data collected by the FRA and available on its website, accident rates have fallen 43 percent since 2000, and 79 percent since 1980. The rail employee injury rate has fallen 46 percent since 2000, and 83 percent since 1980. And the grade crossing collision rate in 2015 was down 81 percent since 1980, and 42 percent since 2000. By any measure, recent years have been the safest in rail history. America's railroads today have lower employee injury rates than most other major industries, including trucking, inland water transportation, airlines, agriculture, mining, manufacturing, and construction. Even food store workers are at greater risk of injury than railroad workers. *See* "Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, 2014," http://www.bls.gov/iif/oshwc/osh/os/ostb4343.pdf. The dramatic reduction in freight rail accidents and injuries over the last several decades is the result of a dedicated team of safety experts who conduct rigorous research, examine problems in new ways, and apply technological advances to processes that make a safe system of transportation even safer.

A. One-Person Crews Are Being Used Safely.

There is abundant real-world evidence that one-person crews are just as safe, and perhaps even safer, than multiple-person crews. Railroads in the United States and other nations have safely used one-person crews in a wide variety of operating contexts for many years. The NPRM appears to recognize this point, acknowledging that the existing one-person operations "have not yet raised serious safety concerns." 81 Fed. Reg. at 13950. In fact, the NPRM ultimately concludes that "it is possible that one-person crews have *contributed* to the [industry's] improving safety record." *Id*. at 13932 (emphasis added). As discussed below, the real-world performance of one-person crews—as reflected in data from the United States and around the world—establishes that they pose no risk to safety.

1. In early 2015, AAR presented an expert study prepared by the consulting firm Oliver Wyman concluding, based on U.S. accident data, that single-person train crew operations are just as safe as multiple-person train crew operations. The study, attached as Exhibit A to these Comments, compared aggregate statistics on relevant equipment incidents and casualty incidents for 2007 through 2013 for operators using single-person crews versus operators using multiple-person crews. As to equipment incidents, the study found that "[w]hile the data may not conclusively support a claim that single-person crew operations are safer than multiple-person crew operations (given the possible existence of other influencing factors), it does appear that single-person crew operations are at least as safe as multiple-person crew operations." Ex. A at 24. As to casualty incidents, the study likewise found that "those rail operators using single-person

crews are at least as safe as their counterparts relying on multiple-person crew[s] to operate their trains." *Id*. at 26. In the NPRM, the FRA ignored these findings.

AAR also commissioned an expert study from the consulting firm ICF International that forecasted accident rates for one- and two-person crews once PTC has been fully implemented. That study, which used a fault-tree analysis, found virtually no difference in accident rates between one- and two-person operations. *See* Ex. C at 1. In fact, "[t]rain accidents due to rollaways decrease by a factor of 10 with the removal of a second person from the cab due to fewer potential situations and additional care taken when the sole operator leaves the cab." *Id*. at 5. The NPRM ignored this report as well.

An additional source of data comes from U.S. passenger trains, which have been operated for many years with only one crewmember in the cab (other crewmembers may serve the passenger compartments but do not routinely ride in the cab). These have been widely viewed as safe operations. As the FRA advised the NTSB in 1986: "Many passenger trains have been operated for years with only one person in the control compartment. Some of these operations have been in place for over 50 years and they have compiled an outstanding safety record." Response to NTSB Recommendation R-85-051 (May 20, 1986). The trend toward one-person crews for passenger trains has only increased since that time. Operating with a single crewmember in the cab is now the standard for commuter trains and for Amtrak trips. Notably, the proposed rule does not require any change to that standard, allowing the second crewmember to be anywhere on the train.

The recent Amtrak derailment outside of Philadelphia does not provide grounds for a two-person crew mandate. In fact, the NPRM *conflicts* with the NTSB's recommendations arising from that derailment. First, the NTSB Chairman recently testified before Congress that based on accidents the Board has investigated, "we don't find that two person crews are necessarily an improvement." *Oversight of the Amtrak Accident in Philadelphia: Hearing before the House Committee on Transportation and Infrastructure* 41 (June 2, 2015). Second, the NTSB has recommended that the FRA *first* collect crew-size information in accident reports and *then* examine the data to determine whether to regulate crew size. The Board explained:

> [T]he NTSB concludes that the FRA accident database is inadequate for comparing relevant accident rates based on crew size because the information about accident circumstances and number of crewmembers in the controlling cab is insufficient. Accordingly, the NTSB recommends that the FRA modify form 6180.54 (Rail Equipment Accident/Incident Report) to include the number of crewmembers in the controlling cab of the train at the time of an accident (R-16-33). The NTSB further recommends that after form 6180.54 is modified as specified in Safety Recommendation R-16-33, the FRA use the data regarding number of crewmembers in the controlling cab of the train at the time of an accident to evaluate the safety adequacy of current crew size regulations.

See NTSB, RAR-16/02, *Derailment of Amtrak Passenger Train 188* at 19. The FRA is wrong to reject the NTSB's recommendation to gather the necessary data *before* making any regulatory changes.

The RIA contains a section entitled "Safety Performance of Railroads With One-Person Crew Operations" that uses "paired *t*-tests" as a way of justifying the proposed rule. The FRA takes safety data from Class II and III railroads that have some one-person and some two-person operations, then uses that data to draw conclusions about the safety of one-person crews. *See* RIA at 16 ("The overall accident rate for each group was used to . . . determine if railroads with any one-person operations have a statistically significant higher overall accident rate than similar railroads having no one-person operations."). The FRA's approach to the Class II and III data is flawed because it fails to distinguish among the safety performance of different crew sizes within the data set (*i.e.*, it does not compare trains with one-person crews to trains with two-person crews; it compares railroads that operate some one-person trains to those that do not). This contradicts the FRA's position with respect to the European safety data, discussed below. When AAR argued that the European data showed that one-person operations were just as safe as two-person operations, FRA rejected that argument on the basis that "it would be misleading to present this record as the performance of one-person crews without normalizing or separating rail operations within the country" based on crew size. RIA at 19. Yet that is precisely what FRA has done with the Class II and III data—drawing conclusions based on aggregate safety data without regard to crew size. If the FRA believes it is "misleading" to assess the performance of one-person crews based on the overall performance of railroads that use a mix of one- and two-person crews, it should not have taken that approach with Class II and III railroads.

2. The experience of the Indiana Rail Road Company (INRD) confirms that one-person crews are just as safe as multiple-person crews. *See* Statement of Robert Babcock (attached as Ex. D). INRD has been using one-person crews since 1997. In 2015, INRD utilized one-person crew operations on about 31 starts per week. *See* Ex. D. at ¶ 3.

The implementation of one-person crew operations at INRD was the result of research, innovation and use of new technology. In addition to consulting with the FRA, INRD studied the operations of New Zealand's Tranz Rail, which implemented one-person crews in 1987. INRD observed Tranz Rail's operating practices, reviewed its Alternative Train Crewing Handbook, interviewed employees, and discussed issues of alertness and fatigue with Tranz Rail officials. INRD also obtained information from a study performed by Tranz Rail that concluded that the health and safety of individuals and the public were not compromised by employing one-person crew operations. Ex. D at ¶ 7. Finally, INRD considered suggestions and safety concerns of its own employees and management. *Id*. at ¶ 9.

INRD's evidence and data—collected over nearly two decades—establishes that one-person crews are just as safe as two-person crews. INRD has had only *one* FRA-reportable human factor incident involving a one-person crew in 19 years of operations. With regard to non-FRA reportable human factor incidents, INRD examined data from 2006 through 2013. During that time period, one-person operations accounted for 24% of INRD man-hours, but only 5.7% of human factor incidents. Two-person crews, on the other hand, accounted for 76% of INRD man-hours, but accounted for 94.3% of human

factor incidents. And the fact that the Brotherhood of Locomotive Engineers and Trainmen agreed to their members operating one-person trains on INRD demonstrates that the union believes these operations are safe. *See* Ex. D at ¶¶ 25-26.

If there were any objective or empirical evidence that operating with one-person crews endangered the safety of INRD employees or the public, INRD would not continue one-person operations regardless of the attendant efficiencies. But there is simply no such evidence.

3. One-person crews are commonly used in other nations—and the data confirms that they are safe. The NPRM acknowledges this fact, concluding that the "evidence . . . indicates that the safety records of these foreign operations are acceptable." 81 Fed. Reg. at 13932. European safety regulators agree. In the United Kingdom, for example, where one-person freight operations are common, the Rail Safety and Standards Board found that "one-person crews were at least as safe as multiple crew operations." RIA at 21.

As discussed in detail in the supplemental report from Oliver Wyman, attached as Exhibit B, there is extensive safety data documenting the performance of one-person crews in Europe. This data demonstrates that one-person operations are just as safe as two-person operations. Oliver Wyman examined rail safety data collected by the European Railway Agency, which includes data from 28 European nations. That data shows that one-person crews have similar or lower accident rates than two-person crews in five of the six accident categories measured—collisions with other trains or obstacles; derailments; level crossings; fires on rolling stock; and other accidents. The *only*

exception was the category of "accidents to persons caused by rolling stock in motion," which generally involves non-employees hit by a railway vehicle (and there is no evidence to suggest that crew size played a role in those accidents).

The findings in Oliver Wyman's supplemental report amplify the findings in its original report. Wyman's original report explained that "[i]nternationally, the use of single-person crews for trains is widespread in developed markets similar to the United States in size and complexity." Ex. B at 1. "In Europe and Australia, for example, the use of single-person crews is the dominant practice on many freight railroads, including those in Germany, France, Sweden, Australia, the United Kingdom, and Queensland/New South Wales." *Id*. The Wyman study analyzed safety data for collisions, derailments, serious employee injuries, fatalities, and signals passed at danger, and found that "[f]or all of these categories, major European operators using single-person crews appeared to be as safe as Class I multiple-person crew operations." *Id*. at 2.

The NPRM attempts to minimize the significance of the European evidence on the grounds that it is difficult to ascertain crew size from accident data, and European operations are generally less challenging than U.S. operations. Neither rationale is persuasive.

The first critique—the purported limitations of the data—overlooks the fact that there are uniform crew size policies in almost every European nation. For that reason, it is easy to impute the crew size onto the safety data. As Oliver Wyman explains, operations within almost every European country are typically one crew size or the other, meaning that the overall data for the country generally represents either one-person or

two-person operations, not a mixture. Ex. B at 45. One-person freight crews are the norm throughout Western Europe except for Portugal. Some Eastern European nations have one-person crews (*e.g.*, Poland), whereas others have two-person crews (*e.g.*, Estonia and Bulgaria). *Id*. at 10. Indeed, only Croatia and Slovenia do not have a clear uniform crew size. *Id*. at 75. The FRA could have examined the publicly available data from Europe and readily segregated one-person from two-person operations.

The second critique—that European operations are generally less challenging than U.S. operations—is wrong because it fails to recognize that European operations typically demand a *higher* degree of operating precision to maintain safety due to the density of operations, the "open access" system, and the track configurations, among other reasons. *See* Ex. B at 20-23. The standard gauge European network averages 54 trains per day per line kilometer, more than double the 22.3 in the United States. It has 201,470 route kilometers, comparable to the Class I railroads' collective 151,399 kilometers (or the full U.S. system's 222,932). Its territory has a GDP of $17.1 trillion (compared to $17.4 trillion for the United States). *Id*. at 15. Nor is the European network dominated by simple point-to-point trains shuttling between two endpoints. In Germany, for example, the rail network handles a mix of 1 million tons of freight and 7.38 million passengers per day, with a density that can exceed 400 trains per day in the busiest double-tracked areas. *Id*. at 24. Although the FRA notes that European freight trains are generally shorter than U.S. freight trains, it is not clear why that makes U.S. operations less suitable for one-person operations. To the contrary, the shorter trains and higher

frequency mean *more* trains on the network, with the attendant increase in signals, switching, and dispatch communications. *Id*. at 20.

Adding to the complexity of European operations is the high proportion of passenger service (at considerably higher speeds) operating on the same lines, which introduces more operational complexities as well as a higher likelihood of injury in the event of an accident. European operators navigate an "open access" model in which hundreds of operators use the same infrastructure. Germany has 230 freight operators and 135 passenger operators. Ex. B. at 25. France has 18 freight operators and 12 passenger operators. *Id*. at 27. Moreover, in Europe, freight operations frequently involve cross-border shipments, and the high population density of Europe means operations are often closer to population centers than they are in the United States. *Id*. at 22. All of this makes the engineer's job potentially more complicated—and the consequences of an error graver—but Western European nations have done it safely for years with one person in the cab. The FRA's wholesale dismissal of this experience is arbitrary and capricious, and reflective of its predetermined mission to prevent crew size reductions regardless of what the data might show.

B. The "Evidence" Discussed In The NPRM Cannot Justify A General Prohibition On One-Person Crews.

Because the "FRA does not have data to prove a direct correlation between higher rates of safety and multiple person crews," 81 Fed. Reg. at 13919, the proposed rule relies heavily on anecdotes concerning two derailments, along with five studies that

purportedly demonstrate the safety benefits of multiple-person crews. None of this material is sufficient to justify the proposed rule.

1. The preamble gives a play-by-play account of the crewmembers' actions during two derailments—Lac-Mégantic, Canada, and Casselton, North Dakota—that supposedly illustrates the value of having multiple crewmembers. But this type of anecdotal "evidence" is an insufficient basis for regulation, and the investigative reports arising from these derailments directly contradict the lessons the FRA seeks to draw from them. Indeed, the preamble acknowledges—once again, in language that the FRA did *not* write but was added at the direction of OIRA—that the "FRA does not have information that suggests that there have been any previous accidents involving one-person crew operations that could have been avoided by adding a second crewmember." 81 Fed. Reg. at 13921.

The Lac-Mégantic derailment. The preamble discusses the circumstances surrounding the Lac-Mégantic derailment, focusing on the fact that it involved a single crewmember who failed to properly secure the train at the end of a tour of duty. 81 Fed. Reg. at 13921-23. But Canada's Transportation Safety Board exhaustively investigated the cause of the accident and "*could not conclude* that use of a one-person crew was a cause or contributing factor to the accident." 81 Fed. Reg. at 13921 (emphasis added). If investigators found no evidence that the use of a one-person crew was even so much as a "contributing factor," the Lac-Mégantic derailment plainly provides no support for mandating two-person crews throughout the United States.

The FRA resists this conclusion, asserting that "it is distinctly possible that a train crew with a minimum of two-persons would have had more options available to secure the train safely, thereby potentially posing less of a risk of a runaway train." 81 Fed. Reg. at 13923. But the Canadian safety board made no such finding. To the contrary, it stated that "it is impossible to conclude whether the presence of another crewmember would have resulted in different actions to secure the train." *Id*. The NPRM's speculative theory—which the preamble concedes was raised not by any safety regulator but rather "by some labor members of FRA's Federal advisory committee"—conflicts with what the safety regulators *did* find: that there was simply no proof "that having another crewmember would have prevented the accident." *Id*.

The Casselton derailment. The preamble also discusses the derailment in Casselton, North Dakota as an example of "how having multiple train crewmembers can improve safety for the general public and the crewmembers themselves." 81 Fed. Reg. at 13923. Here too, the FRA has drawn conclusions that simply are not supported by the facts of the accident.

The NPRM notes the various ways in which one crewmember warned his colleague about the imminent danger. For example, the preamble notes that one crewmember warned the other to brace for impact; that one crewmember warned the other that the train was on fire; and that one crewmember advised the other crewmember to run. 81 Fed. Reg. at 13924. The agency contends that all of this shows the safety benefits of a second crewmember. But it ignores the obvious point that if there had only been one crewmember, the second person would not even have been in danger. This is

no small point; the FRA's proposed approach will ensure that at least two crewmembers will always be at risk in any train accident.

The preamble also cites the Casselton derailment as illustrating how a second crewmember can assist with "post-accident risk mitigation," such as by splitting a train to move cars away from a fire. 81 Fed. Reg. at 13924. But even here, the FRA acknowledges that it would be speculative to conclude that these emergency moves could not have been made by a one-person crew, noting only that "there is a question" whether a one-person crew could have performed them because it would have taken more time and been more "logistically difficult." *Id*. (concluding only that "it is arguable that the two-person train crew benefited from each other's presence"). In fact, there is no reason an engineer could not separate derailed cars and then use remote control operations to move the unaffected part of the train away from the accident in the same amount of time as a two-person crew would take to separate and move the unaffected cars. Moreover, the "post-accident risk mitigation" rationale, even if it had merit in the context of derailments involving trains carrying hazardous or flammable materials, has little if any applicability to general merchandise trains, where there is little risk of harm to people or to the environment from a delay in response. Finally, the NPRM simply ignores the fact that a utility employee could have been dispatched to the scene in the time it took for the crewmembers to begin splitting the train.

2. The proposed rule also relies on six reports that purportedly illustrate the safety benefits of multiple crewmembers. According to the FRA, these reports "show that one-person train operations pose increased risks by potentially overloading the sole

crewmember with tasks, and that PTC does not substitute for all the tasks performed by properly trained conductors." 81 Fed. Reg. at 13919.

Nothing in these reports justifies the proposed rule's general prohibition on one-person operations.

a. The FRA cites a 2012 report from the John A. Volpe National Transportation Systems Center for the proposition that "conductors and locomotive engineers operate as a joint cognitive system." 81 Fed. Reg. at 13925. According to the NPRM, this report underscores the many important tasks conductors perform and demonstrates that a PTC system cannot perform all of these tasks. Thus, the NPRM reasons, the report "raises issues for each railroad that might be considering one-person train operations." *Id*.

The 2012 Volpe report does not support a general prohibition on one-person operations. At most, it suggests that railroads should identify "how the locomotive engineer's responsibilities would change in a one-person operation," and whether increased training would be necessary to replace the expertise one obtains as a conductor before becoming an engineer. 81 Fed. Reg. at 13925. The NPRM's assertion that railroads may be unable to find qualified engineers if there is not a pool of conductors to choose from, *see id*. at 13926, is meritless. INRD has identified, hired and trained qualified conductor/engineers for years with no difficulty.

b. The FRA relies on a 2013 Volpe report that discusses "the kinds of knowledge, skills, abilities, and other characteristics" required to successfully perform the conductor's job on a passenger train. 81 Fed. Reg. at 13926. The report says nothing

about the role of a freight train conductor, and thus does not support application of the proposed rule to freight train crews. Nor does it establish the need for two crewmembers in the *cab* of a passenger train.

c. The FRA discusses a report examining fatigue in the railroad industry. The NPRM reasons: "Extrapolating from the findings in the study, it appears that a railroad considering a one-person train crew operation should consider whether the crewmember is likely to be fatigued," and "prior to implementing a one-person operation, it would be prudent for the railroad to consider what redundancy backstops have been implemented in case the crewmember falls asleep on the job." 81 Fed. Reg. at 13926. Nothing in this report warrants a general prohibition on one-person operations. To the contrary, the report simply recommends that railroads consider the question of fatigue—and take steps to address the risk of fatigue-related accidents. Here too, INRD's experience is highly relevant. In its nearly two decades of one-crew-member operations, INRD has never had an incident that was caused by crew fatigue. *See* Ex. D at ¶ 19.

d. The FRA cites a 2009 Volpe report that "examined the cognitive demands and activities of locomotive engineers in today's environment and the changes in cognitive demands and activities that are likely to arise with the introduction of new train technologies." 81 Fed. Reg. at 13926. Although the report observes that PTC may introduce new sources of distraction for an engineer, it "does not explicitly consider any additional sources of cognitive workload that may arise should there be a transition to single person operations." Report at 3. Therefore, the report acknowledges, "[a]dditional analyses would be needed to explicitly address the one-person operation case." *Id*.

Moreover, in the report, "the PTC systems are described and analyzed as they were implemented at the time that site visits and interviews occurred (between 2002 and 2005)," and "[i]n some cases the PTC systems have undergone substantial modifications since that time." *Id*.

The report of former NTSB Board Member John Lauber explains in detail how engineers will not be distracted by the PTC system. *See* Ex. E (previously submitted in connection with the PTC rulemaking, FRA-2008-0132). Lauber concludes that the FRA is incorrect in making the "very surprising" argument that PTC—which is, "by intention and design, directly related to the safe operation of the train by the operating engineer"—may actually *jeopardize* safety. *Id*. at 4. Lauber explains that "[t]here may well be issues related to the integration of PTC functions into the engineer's roles and responsibilities, but this is a matter of proper system design, operating procedures, and training, and to claim that these are 'distracting' is odd to say the least." *Id*.

The FRA's speculative theorizing about the risks of distraction is further rebutted by INRD's experiences with a one-person crew. INRD has structured its operations to avoid any such risks. This illustrates just one way to implement one-person operations. INRD train operators on a one-person crew are not distracted by managing consist and train makeup because they handle trains that have already been made up. The train operator receives the train consist of a complete train from customer service. In the event any pick ups or set outs of railcars are required, the one-person crew must wait for another employee to perform those actions. Moreover, a train operator who is performing one-person operations must stop the train before copying a mandatory

directive from dispatch. INRD rules require that before a train dispatcher may issue a mandatory directive to a one-person crew, the dispatcher must ask the crew, "Are you stopped?" Finally, each INRD locomotive has an in-cab alerter that continuously monitors train operator vigilance; senses the train operator's control inputs such as throttle, brakes and horn; and prompts the train operator for response if no activity is detected after thirty seconds. If no response is received, the in-cab alerter initiates a safe emergency stop. *See* Ex. D at ¶ 15.

e. The FRA relies on a 2013 Volpe report discussing "Human Systems Integration," which it defines as "a systematic, organization-wide approach to implementing new technologies and modernizing existing systems that emphasizes the importance of the end-user in the system acquisition process." 81 Fed. Reg. at 13928. The report notes that "[i]t is not clear how the introduction of PTC will affect cognitive and collaborative processes, but findings suggest that it will not account for all the cognitive and physical support functions the conductor currently provides." Report at 27. Thus, "if a railroad chooses to transition to one-person operations based on technology such as PTC, a proper [Human Systems Integration] analysis would require that the railroad answer certain fundamental questions about the operation for the system designers." 81 Fed. Reg. at 13929.

The analysis of PTC's cognitive demands on engineers was based on site observations and interviews conducted between 2000 and 2005—a time when PTC technology was in its early stages. Report at 20; *see also id*. at 40 (noting that report was based on old information and that "PTC has since been redesigned"). In any event, the

report does not support a general prohibition on one-person operations. To the contrary, the report specifically *envisions* one-person operations based on PTC. The report recommends that railroads that have implemented PTC, and that seek to move to one-person operations, think through a series of questions to ensure safe operations. *Id*. at 39-41.

f. The FRA discusses a 2011 conference report analyzing key aspects of successful teams. 81 Fed. Reg. at 13929-30. This report has virtually nothing to say about PTC or a potential move to one-person crews. The NPRM seems to acknowledge the limited value of the report. *See, e.g.*, *id*. at 13929 ("Unfortunately, the conference report does not answer [the] implied question" whether a one-person crew would plan ahead to the same extent a multiple-person crew would.); *id*. (discussing whether certain "strengths of teamwork" would be lost if the team consists of one person, and conceding that this issue is "not addressed by the conference report"). The report's many unanswered questions—along with the fact that its discussion is at a very high level of generality and does not analyze PTC in detail—make the report of little relevance to this rulemaking. Indeed, as the NPRM ultimately acknowledges, the conference report simply "suggests that the impact [of PTC] is unknown until PTC is implemented and the impact it would have on a two-person crew is studied." *Id*. at 13930.

C. The Claim That Some FRA Regulations Will Not "Work As Intended" With One-Person Crews Is Meritless.

The NPRM asserts that "FRA's regulations were designed for at least two crewmembers," and that "some" regulations "will not work as intended when one-person

train crews are deployed." 81 Fed. Reg. at 13932 (capitalization altered). These arguments are misplaced. There have been ongoing one-person operations in the United States for decades. These operations fully comply with FRA regulations—and the agency has never suggested otherwise.

If a railroad were to commence new operations with a one-person crew, it would ensure that those operations comply with all FRA safety regulations. And if the agency is concerned that some regulations, even if they were not being violated, would not "work as intended," the rational solution would simply be to modify the regulations to account for the change and technological advancement in the industry, rather than enact a general prohibition on one-person operations. *See* Executive Order No. 13563 (Jan. 18. 2011) (requiring federal agencies to conduct "retrospective analysis of rules that may be outmoded, ineffective, insufficient, or excessively burdensome, and to modify, streamline, expand, or repeal them in accordance with what has been learned").

1. The NPRM states that a one-person crew "may have difficulty determining that the track is clear" before performing a "shoving or pushing movement." 81 Fed. Reg. at 13932 (citing 49 C.F.R. § 218.99). But as the NPRM notes, FRA regulations allow the use of cameras for performing these movements, *see id*. (citing 49 C.F.R. § 218.99(b)(3)(i)), or a railroad could simply assign an additional employee to assist with this particular task, or implement safe procedures through remote control operations.

2. The NPRM expresses concern that an engineer may "encounter logistical difficulties in throwing some switches and then returning those switches and locking them in the normal position after use." 81 Fed. Reg. at 13932 (citing 49 C.F.R.

§§ 218.103-107). But many switches can be operated from the locomotive or by a non-crewmember or remote dispatcher.

3. The NPRM's concerns about a one-person crew's ability to protect passengers in case of an emergency, 81 Fed. Reg. at 13933, is not applicable to the freight railroads, and passenger railroads currently operate with at least two crewmembers on the train (not in the cab), and have no plans to reduce that staffing.

4. The NPRM states that a one-person crew may make it more difficult to discover alcohol or drug use by co-workers. 81 Fed. Reg. at 13933. But railroads already have many safeguards in place, including pre-employment testing, random testing, and testing for cause. Moreover, the NPRM overlooks the many other ways that alcohol or drug use can be detected, such as through inward-facing cameras and job briefings that are held at the start of each shift. In short, the engineer on a single-person crew will still come into contact with co-workers in the course of his or her duties.

The NPRM also states that "without a second crewmember to monitor the sole crewmember's attentiveness, there is a risk that more locomotive engineers will be tempted to use cell phones and other prohibited devices when nobody is around to observe them." 81 Fed. Reg. at 13933. The FRA offers no evidentiary support for this speculation. It would be just as easy to predict that crewmembers in a two-person crew may be tempted to show their colleague something on their cell phone, or may think a quick call or text would be safe because the other person will be monitoring the train operation. The risk of cell phone use should be addressed through inward-facing cameras

or cell-phone detection technology, which deter unauthorized use and provide evidence in the event of an accident.

5. The NPRM notes that "[s]ome radio and wireless communication requirements were written with the expectation that there would be at least two crewmembers on a train." 81 Fed. Reg. at 13933. For example, the NPRM points to FRA regulations "requir[ing] that an employee copying a mandatory directive received by radio transmission shall not be an employee operating the controls of moving equipment." *Id*. But the need to copy mandatory directives received by radio will become far less frequent with a vital PTC system, and as the NPRM acknowledges, "a one-person train crew could stop a train to receive a mandatory directive by radio" in any event. *Id*.

Noting the risk of radio communication failure, the NPRM highlights the benefit of having a "redundant communication" in the form of a second radio in the second locomotive that could be operated by a second crewmember. 81 Fed. Reg. at 13934. But any such benefit would be marginal at best, because many train consists operate with only one locomotive, because a malfunctioning radio could be promptly replaced or repaired in short order, and because PTC will offer a redundant safety net in the event of radio failure.

6. The NPRM hypothesizes that one-person crews would have difficulty addressing highway-rail grade crossing activation failures because there would be no one available to serve as a flagger to stop motorists. 81 Fed. Reg. at 13934. But this concern could be addressed through far less burdensome means than requiring an additional

crewmember on every single train. For example, railroads could modify their operating practices to require that a mobile utility employee monitor trains in a specific geographic zone and be available to assist with these types of emergency situations.

II. THE NPRM IGNORES THE PROPOSED RULE'S SIGNIFICANT COSTS AND OVERSTATES ITS BENEFITS.

The NPRM's cost/benefit analysis is seriously deficient. It substantially understates the costs of the proposed rule, and substantially overstates the benefits. A two-person crew mandate will impose staggering costs on railroads with no safety benefit.

A. The NPRM Fails To Take Into Account The Safety Costs Of The Proposed Rule, As Well As Its True Cost To The Railroad Industry.

1. The NPRM acknowledges the safety risks "of a requirement to have more than one crewmember on a train, such as additional incidents caused by crew distraction." 81 Fed. Reg. at 13919. It also recognizes that "having a second crew person on board a train may not prevent or mitigate an incident but could add to the number of persons killed or seriously injured when one occurs." *Id*.

Yet despite acknowledging the increased dangers the proposed rule will create, the FRA dismisses them because it "does not have readily available information for estimating such potential countervailing impacts of this proposed rule." 81 Fed. Reg. at 13919; *see also id*. at 13920 (explaining that the FRA's "cost estimates do not include any safety costs from using two-person crews instead of one or zero person crews, such as additional accidents caused by non-engineer crew distracting the engineer or additional

deaths and serious injuries from having more people on board trains involved in accidents").

This purported "lack of information" is not a legally sufficient excuse, and these gaping holes in the FRA's analysis render its assessment of costs and benefits all but worthless. An inability to pinpoint how many deaths a regulation will cause does not entitle the agency to treat the number as zero.

The FRA's reasoning is flawed in many other respects. For one thing, there *is* readily available information for estimating these risks, as discussed below. Moreover, an ostensible lack of data did not prevent the FRA from estimating the purported safety *benefits* of the proposed rule, so it is arbitrary and capricious for the agency to brush aside the *dangers* of the proposed rule on that basis.

More Sources of Distraction. The FRA is correct to recognize the risk that adding a second crewmember to the cab will lead to more frequent incidents of crewmember distraction. *See* RIA at 5 ("[T]here may be some safety costs associated with requiring a second crew member" because "a second crew member may distract the engineer by discussing non-work-related matters."). It is possible that the engineer could lose situational awareness by engaging in conversations with the other crewmember, or by being distracted by something the other crewmember is doing. A single-person crew eliminates this risk entirely.

The danger of one crewmember distracting another was examined in the wake of the 2008 Metrolink crash at Chatsworth, California. Metrolink convened an independent panel of experts to make recommendations to increase safety. Those experts *rejected* the

idea that a second crewmember "would result in improved safety of train operations," expressing "concern that a second person in the cab of the locomotive or cab car could become a distraction to the engineer." *Metrolink Commuter Rail Safety Peer Review Panel Final Report* 55 (2009). The expert panel elaborated: "Many accidents have occurred . . . where two sets of eyes have been in the cab. These situations have occurred, presumably, because of distractions related to conversations between crewmembers, other communications occurring within the cab of the locomotive or possibly simultaneous inattention by both crewmembers. In fact, there is no quantitative evidence that a second set of eyes within the cab provides an added safety benefit." *Id*. at 59. The California Public Utilities Commission similarly concluded that a "[s]econd set of eyes provides only minimal safety improvement and should be employed only on a temporary basis given the fact that it could aggravate engineer distraction and, consequently, engineer error." *Commuter Rail Collision-Avoidance Report in R.08-11-017* at 41, *adopted*, 2010 WL 4912419 (Cal. Pub. Utils. Comm'n Nov. 19, 2010).

When other safety authorities have emphasized the danger of one crewmember distracting the other, it is arbitrary and capricious for the FRA to brush this known risk aside on the basis that it cannot find "readily available information." 81 Fed. Reg. at 13919.

More Crewmembers Exposed To Injury During Accidents. An additional flaw in the NPRM's analysis is its failure to account for another known danger of mandating two-person crews: the fact that it will inevitably expose a greater number of crewmembers to injury when accidents occur. By reducing the number of crewmembers

from two to one, the number of personnel exposed to potential injury is reduced by 50 percent. For this reason, single-person crews are likely to reduce the overall number of train crew casualties. Here too, the NPRM expressly recognizes that "having a second crew member aboard may result in an additional injury or fatality if a serious accident occurs," RIA at 5, but declines to factor the risk into its cost/benefit analysis based on a purported lack of "readily available information." 81 Fed. Reg. at 13919.

This rationale is hard to fathom. The FRA possesses extensive accident data, and it would not be difficult for the agency to determine the number of injuries or fatal accidents involving crewmembers in the cab of a locomotive. Nor would it be difficult to separate the types of serious accidents likely to harm all persons in the cab (*e.g.*, crashes, derailments) from individualized mishaps like slip-and-fall injuries. Thus, the FRA could easily project the number of lives saved and injuries avoided through the use of one-person crews. In fact, there are well-documented accidents that demonstrate the dangers of requiring additional crewmembers in the cab. *See, e.g.*, NTSB report RAR-07-01 (discussing a July 10, 2005 head-on collision of two freight trains in Anding, Mississippi in which all four crewmembers were fatally injured); NTSB report RAR-13-02 (discussing a June 24, 2012 head-on collision of two freight trains near Goodwell, Oklahoma in which three crew members were fatally injured).

The NPRM acknowledges that the proposed rule will impose additional risk of fatalities and injuries in accidents like the ones noted above—but it erroneously ignores those risks in calculating the rule's costs.

2. The NPRM massively underestimates the proposed rule's cost on the railroad industry, projecting a mere $1 million per year burden. The NPRM's cost analysis contains numerous errors, miscalculations and critical omissions, including the following:

First, the NPRM uses an incorrect average trip distance and labor cost, resulting in a significant understatement of the proposed rule's cost to the industry. The NPRM uses the *shortline* railroad trip distance of 35.8 miles to calculate Class I railroad costs instead of the *Class I* railroad trip distance of 131 miles. 81 Fed. Reg. at 13939; RIA at 38. The NPRM uses the Oliver Wyman analysis in developing a high-end Class I railroad cost estimate. RIA at 51. However, when doing so, it neglects to use the Oliver Wyman Class I railroad trip distance or to include all of the labor cost elements. Both of these factors are key determinants of overall cost.

The average length of haul for Class I railroads was 1,006 miles in 2014. *See* AAR, *Railroad Facts* at 39 (2015). To complete such a trip would take 28 35.8-mile starts, or less than 10 crew starts if each crew start operates 131 miles. Clearly the 10-crew-start model makes more business sense for a Class I operation. It is simply illogical to assume that shortline and Class I railroad crews travel the same distance per start.

Labor costs associated with the second crewmember should account for overtime wages as well as fringe benefits and payroll taxes. Because railroad operations are complex and include local labor agreements that can vary based on type and length of operation, Class I crews often receive overtime pay. Considering straight time paid and overtime paid figures that also take into account the true labor time per trip obtained from

the National Railway Labor Conference, Oliver Wyman calculated a base per-crew start cost of $238.31. Ex. A at 41. When fringe benefits and payroll tax are added, the cost per employee becomes $411.99 per trip. *Id*. The true cost is even higher, since it includes personal safety equipment and supervisory, administrative, and training costs.

Using a shortline railroad 35.8-mile trip distance—and omitting important cost elements such as overtime—results in a second crewmember cost of $74.77 per trip, which is 5.5 times lower than the $412 cost per trip calculated using the well-substantiated 131-mile trip distance and accounting for the relevant labor cost elements. When spread over 2.85 million trips per year, the difference translates into $48 million per year that is not accounted for in the FRA cost estimate—or a total of $264.7 million over the first ten years assuming a gradual implementation of single-person crews.

Second, the NPRM contains a mathematical calculation error that results in a significant underestimation of the high-end cost imposed by the "special approval process" for operating with one-person crews. In estimating the high-end cost, the NPRM includes the annual administrative and analytical costs for Years 1 through 10. However, rather than count the *aggregate* cost, the NPRM only counts the cost for Year 10. By erroneously excluding the costs for the number of trips that would occur with single-person crews in Years 1 through 9, the FRA calculates a total cost of $10.6 million for "additional inputs" required as a condition for approval (RIA at 41)—instead of the mathematically correct total cost of $58.6 million, undiscounted. The table below demonstrates the error.

Special Approval Process Costs – High End

Year	Administrative & Analytical Costs	Number of New Single-Person Crew Starts	Mitigation Costs (Additional Inputs)
1	$ 1,475,958	285,000	$ 1,065,473
2	$ 1,475,958	570,000	$ 2,130,945
3	$ 1,475,958	855,000	$ 3,196,418
4	$ 1,475,958	1,140,000	$ 4,261,890
5	$ 1,475,958	1,425,000	$ 5,327,363
6	$ 1,475,958	1,710,000	$ 6,392,835
7	$ 1,475,958	1,995,000	$ 7,458,308
8	$ 1,475,958	2,280,000	$ 8,523,780
9	$ 1,475,958	2,565,000	$ 9,589,253
10	$ 1,475,958	2,850,000	$ 10,654,725
Total	**$ 14,759,584**	**15,675,000**	**$ 58,600,988**

Third, the NPRM does not attribute any costs to denial of "special approval" requests for new Class I railroad operations with fewer than two crewmembers. For *existing* operations, the NPRM includes costs associated with adding a second crewmember to single-person operations that are not approved for continuance. The NPRM assumes that 16 percent of existing Class I railroad operations will be denied their request to continue and includes 100 percent cost for adding a second crewmember. *See* RIA at 38. In contrast, the NPRM does not include any costs for denial of requests for new single-person operations under the special approval process. The NPRM assumes that the regulatory burden it is adding for new operations will be limited to the additional technological or operational restrictions it may place on those single-person operations it does approve, which it assumes to be 10 percent of the savings that would result from reducing the crew size to one. Given that the cost of outright denial would be 100 percent of the savings associated with those operations and the magnitude of the

operational change that implementation of PTC will enable, this cost should have been included. Including these costs would trigger the threshold for "economically significant" rulemakings of $100 million in any one year. As the 2015 Oliver Wyman study demonstrated, annual (net) cost savings could total between $878 million and almost $1.7 billion based on two scenarios for implementing single-person operations. Ex. A at 45, 47.

Fourth, the NPRM uses an incorrect speed for estimating trip duration and costs for shortline railroad single-person operations. The NPRM uses Class I average speeds to determine the trip durations and thus the additional labor cost for shortline railroad operations that do not qualify for exceptions. *See* RIA at 37, 43. Shortline railroad train speeds are characteristically lower than Class I railroad speeds because shortline railroads operate on classes of track with lower maximum speeds making it impossible for them to achieve the speeds that Class I trains generally can. Using a higher speed leads to a shorter trip duration and thus less additional labor necessary to complete the trip using two crewmembers than if operating at the slower shortline average speed. Using an appropriate shortline train speed would lead to a trip duration estimate that reflects actual duration, which can then be translated into costs by applying the labor cost. The NPRM also fails to take into account the additional pre-departure and post-arrival activities that would require additional labor time from the second crewmember to ensure proper coordination for safe train operation.

Fifth, by relying on a 10-year analysis and a very long crew size-reduction schedule instead of a 20-year analysis with a more realistic schedule, the NPRM ignores

a substantial portion of the cost imposed on the industry. The NPRM's cost model adds costs for new single-person operations incrementally from Year 1 through 10 at a rate of 10 percent each year. Thus, the NPRM's cost estimate incorrectly includes only one year of full costs for crew size reductions due to PTC. *See* RIA at 52. Even when corrected to include the costs for Years 1 through 9, the 10-year analysis is biased towards the lower-cost years, resulting in a lower breakeven point than would be necessary if the analysis focused more on the full implementation state. In addition, the transition period may not be as drawn out as the NPRM assumes and the full-implementation point may be reached much sooner than 10 years after the rule is issued.

The NPRM attempts to take into account the perpetuity of the cost burden on train operations by assigning a nominal cost of $1 per annual crew start impacted in both the low-end and high-end cost estimates. *See* RIA at 52-53. Such a low nominal estimate would clearly be insufficient to account for any ongoing costs, which can be particularly high for material or technological mitigations.

Although the NPRM does evaluate a 20-year scenario in its Sensitivity Analysis, it accounts for only one year of mitigation costs related to the special approval process and the absurdly low $1 per crew start. *See* RIA at 67. The 20-year analysis approach should be the primary scenario because it provides a more complete evaluation of the costs and the benefits, and would be especially useful for comparing the costs and benefits in the final state of implementation.

Finally, it bears mention that the "special approval" procedures do not mitigate the proposed rule's costs in any meaningful way. Because the proposed approval process is

so ill-defined—a point discussed further below in Part III.B—it is impossible to say that it would allow *any* new one-person operations. But even if the FRA allowed *some* reduced crew operations under the proposed procedure, the imposition of this unjustified regulation would still impose unacceptable costs. In particular, the mere existence of the prohibition is likely to stifle innovation, discouraging railroads from adopting new technologies that might permit reduced crews. The regulation will also discourage research and investment in these new technologies because the technologies would be rendered useless in a regime where they are either prohibited outright by the FRA, or wrongly deemed inferior to having the same functions performed by humans. Likewise, even with an exemption procedure in place, the proposed rule will disrupt the collective bargaining process. As discussed in Ken Gradia's statement, Ex. F, the settled expectation is that crew-size issues will be handled in negotiations. If the FRA mandates a standard, the railroads will be required to seek other means of controlling costs.

B. The NPRM Overstates The Proposed Rule's Purported Benefits.

The NPRM overstates the benefits of the proposed rule. The RIA asserts that "FRA expects benefits from the proposed rule to originate from three sources: 1) improving the ability of train crews to effectively and efficiently manage post-accident/incident emergency response, 2) ensuring all operational tasks are not left without a crewmember or technological device to complete them, and 3) continuing to have the same ability to detect crewmembers under the influence of drugs and alcohol." RIA at 57. As to each category, the FRA's benefits assessment is flawed.

First, the purported benefits arising from post-accident emergency response derive in large part from the FRA's analysis of the Casselton derailment. RIA at 57-59. But it is arbitrary, counterintuitive, and dangerous for the agency to conclude that a good way to handle post-accident response is to require *additional* people to be present in the cab of a locomotive that derails or crashes. The FRA's "economic" analysis of the safety benefits purportedly arising from improved post-accident response, RIA at 59, cannot be credited when the agency's speculation about injuries avoided does not take into account the injuries *caused* by its rulemaking. Indeed, the arbitrary and outcome-driven nature of this cost/benefit analysis is underscored by the fact that "FRA screened the rail accidents that were investigated by NTSB to examine the benefits that can be attributed to the intervention of train crews post-accident," *id*., but declined to make the far less speculative assessment of how many lives would be saved by permitting one-person crews.

Second, the RIA relies on the supposed benefits arising from "preventing worker overload and ensuring train task fulfillment." RIA at 64-65. But the NPRM does not identify the specific tasks the second crewmember would perform or how he would assist the engineer in avoiding task "overload." Nor does the RIA make any attempt to quantify these purported benefits. It simply asserts that any benefits are "difficult to estimate as there is very limited data on the actual risk because PTC is not yet implemented." *Id*. at 65. In fact, as former NTSB Board Member John Lauber has explained, PTC presents no meaningful risk of task overload. *See* Ex. E. Moreover, the conductor, who has no duties with regard to train handling, is not well positioned to assist the engineer with these

responsibilities. *Id*. Indeed, job studies conducted in connection with previous rounds of crew-size reductions showed that employees in the cab (other than the engineer) spend significant portions of their time doing nothing other than passively watching for potential hazards. *See* Ex. F at ¶ 26.

Third, the RIA relies on the proposed rule's ostensible benefits in enforcing drug and alcohol regulations. RIA at 60-63. But the agency offers no basis for concluding that permitting one-person operations will lead to accidents arising from drug or alcohol abuse, or would otherwise frustrate detection and enforcement efforts. In fact, the RIA concedes that the "FRA has no evidence of greater alcohol or drug use [on] one-person trains." RIA at 4. Almost the entirety of the RIA's discussion concerns the risk posed by operators under the influence of drugs or alcohol. It is only at the end of the discussion that the agency concedes the critical point: the "FRA is not able to reliably quantify the safety impact of the proposed rule in this area." RIA at 63. Indeed, after acknowledging that the FRA has no evidence of heightened drug or alcohol use on one-person trains, the RIA expressly admits that there may be *no* impact whatsoever. *See id*. ("[U]nder a scenario with broader use of one-person crews . . . more risk *could* be attributed to drug and alcohol use.") (emphasis added). Where, as here, a purported benefit not only cannot be quantified, but is not even likely to exist, it should not be included in the cost/benefit analysis.

Finally, the RIA notes in passing the proposed rule's purported benefits in preventing the unauthorized use of cell phones. RIA at 63-64. But as noted above, those purported benefits are speculative. The risk of improper cell phone use should be

addressed through inward-facing cameras or cell-phone detection technology, not by mandating a minimum crew size.

III. THE FRA SHOULD WITHDRAW THE PROPOSED RULE AND TAKE A DIFFERENT APPROACH TO CREW SIZE.

A. The FRA should withdraw its proposed rule and follow the alternative approach proposed in the NPRM and RIA under which the agency would issue a rule that does "not require railroads using or aspiring to use less than two person crews to attest but [instead] establish[es] a data collection process." RIA at 68-69; *see also* 81 Fed. Reg. at 13958. Given the substantial data that already exists on the safety of one-person operations over a long period of time, that data collection process will simply confirm what is already evident: that one-person operations are just as safe as two-person operations. In the unlikely event the data objectively and conclusively revealed an issue involving operation of a train with less than two crewmembers, the FRA could revisit the situation and work with the relevant stakeholders, voluntarily or by regulation, to understand the data and develop process improvements, since all stakeholders support safe operations practices. This approach would give the FRA comprehensive information about one-person operations while maintaining the agency's authority to halt any operations shown to be unsafe. At the same time, it would give railroads the flexibility to begin or continue one-person operations without incurring the cost of FRA approval.

More generally, a crew-size regulation should focus on safety outcomes rather than mandate the specific ways in which the railroads must conduct their operations. To further public and employee safety interests, the FRA should allow the industry to

unilaterally implement crew-size reductions—including a move to fully automated operations—as long as it does not diminish current safety metrics. The FRA should establish performance standards correlated to the concern at issue and measured by objective safety data, and permit railroads to make their own decisions as to crew size provided they can meet those standards. This approach would avoid locking the industry into the technological status quo and would enable the railroads to improve safety in light of technological advances.

B. The FRA requests "comments on its special approval procedure options and would appreciate suggestions for improving this proposed process or suggesting alternatives." 81 Fed. Reg. at 13957. Because there is no basis for a general prohibition on one-person crews, as explained above, the question of a "special approval procedure" should not even arise. It is the FRA's burden to demonstrate the justification for its general prohibition, not the railroads' burden to demonstrate the justification for "special approval" to engage in operations that the evidence shows are safe.

In any event, the process outlined in the NPRM is flawed because there is a complete lack of objective criteria as to when a petition will be granted. Instead, the FRA has proposed what appears to be a purely subjective test. This misguided approach deprives the railroads of fair notice as to what standards they need to meet in order to operate with fewer than two crewmembers. Although the NPRM identifies examples of the types of information a railroad might include in a "special approval" petition for continuing operations under "Option One," 81 Fed. Reg. at 13950-51, it carefully avoids any suggestion that including this information would result in the FRA *approving* the

petition. Likewise, although the NPRM includes a procedure for approving new operations under "Option Two," here too the FRA avoids stating what information or evidence would be sufficient to obtain agency approval. *Id*. at 13956. The bottom line is that *neither* option is acceptable.

The standardless "special approval procedures" give the FRA unlimited discretion to deny petitions for whatever reason the agency may deem appropriate; they offer no useful guidance as to what the agency's decisional criteria will be; and they offer no assurance whatsoever that a railroad will actually obtain "special approval" no matter how strong a showing it makes. The FRA should retract these unworkable approval procedures, along with the rest of the proposed rule.

CONCLUSION

For all the reasons discussed above, the FRA should withdraw its proposed rule.

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Dated: June 15, 2016

BEFORE THE FEDERAL RAILROAD ADMINISTRATION

Docket No. FRA-2014-0033

TRAIN CREW STAFFING

SUPPLEMENTAL COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS

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August 15, 2016

The Association of American Railroads (AAR), on behalf of itself and its member railroads, respectfully submits these supplemental comments on the Federal Railroad Administration's Notice of Proposed Rulemaking in Docket No. FRA-2014-0033, entitled "Train Crew Staffing." These supplemental comments address four discrete issues that were raised during the July 15 public hearing.

DISCUSSION

1. Undisclosed Data and the Duke Study

The public hearing focused in large part on whether there is any data supporting the proposed rule. *See, e.g.*, Hr'g Tr. 11 (Mr. Lauby: "Much of the criticism of the proposal revolves around concerns that there is no data to support this rule making."). As AAR's opening comments demonstrated, the data that *does* exist contradicts the claim that two-person crews will enhance safety.

In this regard, the FRA should disclose several data sources that the FRA appears to have relied on, but has not made publicly available. On May 20, 2016, AAR sent the FRA a letter (attached hereto) identifying five specific categories of data and asking that this information be posted to the rulemaking docket at least 10 days prior to the close of the comment period. The FRA never responded or made the information available.

In addition, AAR has learned of an ongoing FRA-funded study being conducted at Duke University. *See* Hr'g Tr. 63-64. One purpose of the study is to examine whether there is a correlation between crew size and safety. The fact that the government continues to investigate this question—at the same time it has proposed a rule based on

the assumption that there *is* a correlation between crew size and safety—raises serious concerns, and further underscores the absence of evidence supporting the proposed rule.

2. <u>Blocked Crossings</u>

Several witnesses expressed concern that a one-person crew might have greater difficulty in separating a stopped train blocking a highway-rail grade crossing. *See, e.g.*, Hr'g Tr. 38.[1] As the hearing testimony reflects, blocked crossings are the subject of public concern today, even with two crew members in every cab. Obviously the presence of a second crew member alone does not solve the problem—and FRA has presented no evidence that would permit the conclusion that eliminating the second crew member would result in more or longer blocked crossings. As has been the case with every crew-size reduction to date, the railroads will develop and implement whatever procedures and technologies are necessary to maintain safe operations. In fact, as Indiana Rail Road and others testified at the hearing, there are several ways the blocked-crossing issue is already being addressed in the event of a shift to one-person crews—and additional ways will become available as technology develops.

One approach would be to create a "roving conductor" position—an individual prepared to assist any train within a defined territory. The roving conductor would be poised to respond quickly and help with both routine operations and emergency assistance, including separating or "cutting" a train to permit emergency access across a

[1] The discussions of blocked crossings typically came in response to leading questions from the panel. *See* Hr'g Tr. 26 (asking Sen. Heitkamp to address blocked crossings); *id*. at 38 (asking Mayor Darch to address blocked crossings); *id*. at 53 (asking Mr. Harris to address blocked crossings).

crossing. Because the roving conductor would be in a vehicle, he or she would in some cases have quicker and more efficient access to the rear of long trains, and would not have to run the safety risks inherent in walking alongside a long train, over varied terrain and conditions, to get to a trouble spot.

Alternatively, or in addition, the railroads could use remote-controlled operations to clear cars from a blocked crossing. An employee with a remote-control unit can move a train without being onboard. As of today, the railroads primarily use remote control operations for yard operations. To remove cars from a blocked crossing, an engineer could separate a section of the train and move that section of the train with the locomotive without having to physically be on the locomotive. This approach would enable a crossing to be cleared just as quickly as if there were a second crew member onboard.

The point is that there are already a variety of ways to ensure that the elimination of a second crew member riding in the cab does not adversely impact the incidence or duration of blocked crossings. New technologies and approaches will continue to be developed. Requiring two crew members on every train, all the time, simply in case the train is forced to stop at a highway-rail grade crossing unnecessarily subjects that second crew member to exposure to risk, while offering no demonstrated safety benefit to the public or to other railroad employees.

3. <u>Collective Bargaining</u>

The panel agreed that the question of crew size has historically been addressed through collective bargaining, but suggested that a rule was necessary and justified on the

theory that no one involved in the collective bargaining process was looking out for public safety. *See* Hr'g Tr. 101 (Mr. Lauby: "[W]hen the collective bargaining takes place, how was safety reflected in those bargainings?"). This suggestion is unfair because it implies that neither the railroads nor the unions are concerned about safety. It is also inaccurate. The railroads and the unions alike have long histories of focusing on safety. The railroads would never implement a practice they believed was unsafe. Rail operations in the United States have never been safer than they are today, as technological advancements have enabled the railroads to reduce their accident rates to new lows. Likewise, the unions would not agree to operations that they believed were unsafe, as it is their members who would be placed at risk. There is ample precedent throughout history to show that the railroads and their employees can reduce crew size safely through the collective bargaining process.

More broadly, the function of safety regulators is not, and never has been, to represent the public interest in the collective bargaining process. The role of a safety regulator is to promulgate safety regulations if and when there is a reasonable and objective basis to conclude that such regulation is necessary to mitigate real safety risks. If there is no evidence that one-person operations are unsafe, there is no basis for the FRA to make a rule prohibiting them. Nothing gives the FRA authority to promulgate a rule in the absence of such justification, just so that it can have "a seat at the table" and intervene in collective bargaining to represent its view of the public interest in those negotiations. That is simply not the FRA's job.

4. The "Special Approval Procedures"

During the hearing, John Graham—the former Administrator of the Office of Information and Regulatory Affairs, and currently the Dean of the School of Public and Environmental Affairs at Indiana University—discussed how the proposed rule's "Special Approval Procedures" are unworkable. He observed that when government regulators are given broad discretion to approve exemptions under vague standards, they will often use—or be perceived to use—that discretion as leverage to extract concessions on unrelated issues. The panel asked Dean Graham whether there was any evidence substantiating his observation. Dean Graham responded that there exists a vast scholarly literature documenting this exact phenomenon. Hr'g Tr. 127-28.

To complete the record, below is a list of just some of the articles addressing this issue:

- Richard A. Epstein, *Government By Waiver*, 7 Nat'l Aff. 39 (2011)
- T. Randolph Beard et al., *Eroding the Rule of Law: Regulation as Cooperative Bargaining at the FCC* (2015)
- *The Growing Gap Between Emerging Technologies and Legal-Ethical Oversight* 189 (Gary E. Marchant et al., eds., 2011)
- Brian W. Smith and Laura R. Biddle, *Is the Bank Merger Regulatory Review Process Ripe for Change?*, Bank Accounting & Fin., Apr.-May 2005, at 12

Here, the "special approval" process includes no standard against which requests will be evaluated, and no defined set of objective criteria that can be met to assure

approval. Rather, the proposal is that the FRA will exercise unfettered discretion to grant approvals. This is a scenario ripe for perceived or actual unfairness.

CONCLUSION

For all of the reasons provided in AAR's opening comments filed on June 15, 2016, testimony provided at the public hearing on July 15, 2016, and these supplemental comments, the FRA should withdraw its proposed rule.

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Dated: August 15, 2016

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VIA REGULATIONS.GOV

May 20, 2016

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RE: FRA-2014-0033 -- Request to post relevant agency information to public docket

Dear Sirs:

In reviewing the train-crew staffing NPRM and RIA, AAR has become aware of data sources which the agency appears to have relied upon but which are not disclosed or clearly identified. Relatedly, AAR is aware of several FRA-proposed studies and other data sources that appear to have relevance to the rulemaking.

AAR believes the rulemaking process for the proposed train-crew staffing rule would benefit from the public availability of all relevant agency materials. Accordingly, AAR is requesting that the agency post the following materials to the docket no later than 10 days prior to the end of the comment period:

1. Source for and Calculation of "Average Train Speed In the Industry"

On pages 36-37 of the RIA, FRA cites the AAR Performance Measures for "average train speed in the industry." However, that source includes only an average train speed for each individual Class I railroad for given time periods. It does not include any data from other railroads, and does not provide a basis for weighting the data for the individual railroads to calculate a meaningful composite or average. Please clarify the data and calculations used to reach the figure cited.

2. FRA Technical Bulletin 04-12 ("Single Person Crews")

This technical bulletin is specifically cited in the Operating Practices Compliance Manual (Nov. 2012) (at B-4), but does not appear to be available on the FRA website. Please provide a copy of the document.

3. Materials from Annual Sections 240/242 Meeting

FRA's Operating Practices staff holds an annual meeting of agency and railroad representatives to discuss trends and developments relating to the decertification of engineers and conductors, and related appeals to the FRA Locomotive Engineer and Operating Crew Review Boards. AAR believes that data from these sessions may provide insight on issues relevant to this rulemaking.

Accordingly, AAR requests that FRA post to the docket any agendas, minutes, presentations, or reports from the last five such annual meetings.

4. FRA Study: Automated Freight Train Technologies

Item FRA-TC-002 in the FRA 2015 Broad Agency Announcement requested proposals for research on the topic of automated freight train technologies, explaining that "[i]t is currently thought that increases in freight rail capacity and safety could be achieved by implementing automated or remote controlled train operation, especially on some long haul cross county routes."

Please post to the docket any concept papers or proposals submitted in connection with the request (redacted to protect proprietary information if necessary), information sufficient to identify any award to carry out work under this request, and, if applicable, any statements of work, reports or studies (interim or final) produced in connection with such an award.

5. FRA Study: Human Performance Modeling and Simulation

Item FRA-HF-001 in the FRA 2015 Broad Agency Announcement requested proposals for research on the topic of human performance modeling and simulation, noting the need to "examine the impact of new technology on human performance," and requesting "recommendations for the optimal manning of systems in terms of numbers of personnel and quality of skills needed for safe operation of the system."

Please post to the docket any concept papers or proposals submitted in connection with the request (redacted to protect proprietary information if necessary), information sufficient to identify any award to carry out work under this request, and, if applicable, any statements of work, reports or studies (interim or final) produced in connection with such an award.

6. Any Additional Studies or Proposals for Studies Related to Train Crew Staffing
Because AAR may not be aware of all the relevant studies FRA has conducted, or has asked others to conduct, please produce all additional studies or proposals for studies related to train crew staffing.

Thank you for your assistance.

Please contact me at (202) 639-2100 or kkirmayer@aar.org if you have any questions about this request.

Sincerely,

Kathryn D. Kirmayer