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Docket Operations Facility
U. S. Department of Transportation
1200 New Jersey Avenue, SE, W12-140
Washington, DC 20590

Re: Docket No. FRA-2014-0033, Notice No. 1 [RIN 2130-AC48]

**Comments of the
Brotherhood of Locomotive Engineers and Trainmen (BLET/IBT)
International Association of Sheet Metal, Air, Rail and Transportation Workers Transportation Division (SMART TD)**

The Brotherhood of Locomotive Engineers and Trainmen (BLET) and the Transportation Division of the International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART TD) represent the vast majority of operating train crew members across the country and submit the following comments on behalf of our members.

At the outset we would like to thank the Federal Railroad Administration (FRA) for addressing the issue of train crew size and we fully support the idea of a two-person crew rule. Our comments are recommending that, in the interest of public safety, the final rule be made even stronger than what has been proposed.

On September 12, 2008, a Metro-Link train operated by a single engineer, missed a red signal and crashed head on into a Union Pacific freight train killing 25 and injuring 136. The NTSB found that the lone person in the cab was distracted.

On July 6, 2013, a Montreal, Maine and Atlantic Railway (MMA) train operated by a single-person crew rolled down the grade into the center of the Town of Lac-Megantic, Quebec. Sixty-three of the 72 crude oil tank cars derailed. Multiple explosions and intense fires enveloped parts of the town. The result: 47 people dead, over 2,000 people evacuated and extensive property damage. Canadian regulators shortly thereafter banned single-person crew operations on trains with hazardous materials.

On December 1, 2013, a Metro-North train traveling into New York City, above the speed limit, derailed killing 9 and injuring 61. Property damage exceeded \$9 million. The train was operated by a single person in the cab.

Just over a year ago, in a suburb of Philadelphia, Amtrak train No. 188, with a single engineer in the locomotive cab sped into a curve, derailed, and killed 8 and injured over 200. The NTSB found that the lone person in the cab was distracted by radio transmissions and had lost situational awareness.

A single person in the cab of these locomotives tie each of these tragedies together. The needless loss of life in these incidents could have easily been prevented by a second crew member in the cab of these trains. While the carriers look at the bottom line, and exact a cost-benefit analysis, that is no comfort to the families and communities scarred by these tragedies. Indeed, the nation's railroads have a 140-year history of focusing on their profitability. The costs associated with improving, and in this case maintaining, a safe railroad operation conflicts with their profitability. Since 1878, railroads have vigorously opposed every piece of safety legislation introduced in Congress, describing these safety propositions as unnecessary and regulatory overreach. Each rail safety law and regulation on the books is a response to numerous fatal events that the railroads refused to address without being required by law or regulation. This fact has given rise to the common acknowledgement that these laws and regulations were, literally, "written in blood." These include the Locomotive Inspection Act, Safety Appliances Acts, Signal Inspection Act, the Power or Train Brakes Safety Appliance Act, The Federal Employers Liability Act, The Federal Railroad Safety Act of 1970, the hazardous materials laws, the railroad safety improvements enacted in 1974, 1976, and 1994, the Rail Safety Improvement Act of 2008, and amendments to the whistleblower law.

The carriers once again see this sort of safety regulation as bothersome to their bottom line. The FRA, however, has the responsibility to the families, communities and public to ensure that more of these tragedies don't occur in the future. We ask that the FRA fully consider our comments with this in mind.

It should not go unnoticed that our sister industry, aviation, despite their extensive cutting edge technology, safety engineering and planes that can and do fly themselves, still maintain two person crews as the law of the land. Given that passenger trains can carry many more people than airplanes, and freight rail cars carry some of the most deadly and destructive chemicals known to man, the standard for the rail industry should be no less.

We firmly believe that the only safe way to operate a train is with a crew of at least two people - a federally certified locomotive engineer and a federally certified conductor.

Two persons on a crew is a necessity because:

1. There are far too many duties and responsibilities involved in operating a train for a single crew member to do them all safely and correctly, all of the time.

2. Modern technological advances, like Positive Train Control (PTC), are not making things easier for operating crews; they are making things more complex and they are no replacement for the second crewmember.

3. Fatigue is the number one safety issue in the freight rail industry. The vast majority of freight rail workers have unpredictable work schedules and are on call 24 hours a day, 7 days per week, and must report for duty with as little as 1 hour and 15 minutes notice. Unpredictable work schedules are the unfortunate norm that make fatigue the problem that it is.

4. A single person crew cannot perform all the tasks required. It is physically impossible for a single crew member to cut a rail crossing. Moreover, the rules involving train securement and going in between equipment prevent it. Scores of safety regulations to protect employees would have to be weakened to accommodate a one-person crew.

I. THE DUTIES AND RESPONSIBILITIES OF THE CREW DEMAND TWO PERSONS¹

Over the past 30 years, train crews have been reduced from 5 to 2 persons; and, during that same time period, our operating rules have grown more complex and trains and work assignments have gotten much longer. Instead of a one mile long train operating over 100 miles of track with 5 crew members, we now have trains exceeding 3 miles in length and traveling more than 300 miles in a single tour of duty with crews of two people. Longer trains and longer distances have created a far more challenging work environment.

Adopting policies that will require superhuman efforts in the performance of routine duties for twelve consecutive hours per day, and more than 50 hours each week, are doomed to adversely impact safety. Allowing single person train operations would be a significant degradation of rail safety for rail employees and the public.

We appreciate the recognition by FRA of the various important safety functions performed by certified conductors, and the recognition of the safety hazards created when a train has fewer than two crewmembers. The accidents mentioned above are all too painful a reminder.

There are many required activities in normal rail operations that cannot be performed by a single crewmember. Train operations need to reflect the coordination of efforts and good communications by a minimum of two certified crewmembers. This is supported by FRA's research. A July 2012 report by FRA entitled "Cognitive and Collaborative Demands of Freight Conductor

¹ At the RSAC deliberations on crew size, documents were submitted for the record entitled "Locomotive Engineer Task Identification and Description of Job Requirements" and "Train and Yard Employee Work Task Requirements." Both of these documents spell out in detail the tasks required of both the conductor and engineer. These documents will be provided in a separate filing to the docket. Additionally, FRA has issued reports regarding the physical and cognitive demands of both crafts. The report dated February 2013 entitled "Rail Industry Job Analysis: Passenger Conductor," spells out the passenger conductor's tasks. In a January 2009 report entitled "Technology Implications of a Cognitive Task Analysis for Locomotive Engineers," FRA points out the major cognitive challenges involved in operating a train. These include "the need for sustained monitoring and attention; maintaining an accurate situation model of the immediate environment (including the location, activities and intentions of other agents in the vicinity such as other trains and roadway workers); anticipating and taking action in preparation for upcoming situations; and planning and decision making, particularly in response to unanticipated conditions (e.g., person or object obstructing the track)." (pg. iv).

Activities: Results and Implications of a Cognitive Task Analysis” discusses many of the conductor’s activities in managing the train consist:

The conductor’s role in managing the train consist means that he or she must understand train makeup rules and apply them both in the yard and on the mainline. Experienced conductors understand the implications of car placement, car consist, and car weight and shape when building trains. Conductors on the mainline must look over the train consist and car list prior to departing the yard to ensure proper train makeup. Conductors must understand how the train’s consist will affect train handling, which is important to ensure locomotive engineer compliance when operating the train.

En route, one of the conductor’s main tasks is supervising overall operation and administration of the train to ensure safe and efficient operation. This involves communicating and coordinating closely with the locomotive engineer, monitoring locomotive engineer performance, and providing backup as needed. Conductors handle all radio communications and take care of paperwork when the train is in motion so that the locomotive engineer can concentrate on operating the train. The conductor also serves to remind the engineer about upcoming signals and slow orders and provides “look ahead” information to alert the engineer to hills, curves, grade crossings, etc. If the locomotive engineer is not in compliance with the railroad’s operating rules, it is the conductor’s job to bring it to the locomotive engineer’s attention or pull the emergency brake to bring the train to an emergency stop if he or she feels the train, its crew, or others outside the train are in danger. Finally, the conductor’s presence in the cab may help to keep the locomotive engineer awake and alert, and vice versa (Frings, 2011).

The conductor is also in charge of all radio communications in the cab. Radio communications come in spurts, meaning there can be lulls in communication and times of heavy interaction that require conductors to multitask. For example, a conductor may need to communicate with the dispatcher (or a roadway worker), copy the information back to the dispatcher and write it down, make sure the engineer received the information, and also maintain awareness of conditions outside the cab, which includes calling out signals and speed restrictions. This can be especially challenging when the dispatcher is speaking quickly and using railroad jargon.

Unexpected situations include anything from train equipment issues (e.g., mechanical performance, operability, etc.), to collisions and derailments. Although these unanticipated events run the gamut, train equipment issues are perhaps the most common unanticipated events that arise en route, and in these cases, it is the conductor who is responsible for troubleshooting and, when possible, repairing the problem.” (pgs. 2-3)

The FRA report further explains that it can take up to 5 years to gain sufficient experience to become a confident, expert conductor. It points out the characteristics that differentiate expert conductors from less experienced ones, including: a detailed mental knowledge of the physical territory; ability to maintain situational awareness of surroundings; ability to problem solve; ability to plan ahead as to signals, curves, crossings, and train meets; ability to multitask; ability to exploit external memory aids; and ability to foster shared situational awareness through active communication with the engineer and train dispatcher. (pgs. 3-4).

Supplementing the FRA analysis, there are numerous reasons why two crewmembers are necessary on a train:

1. Most significant of all is that a single crew member will get no reminders from a second crew member of 1) Train meeting points, 2) train authority limits, 3) upcoming slow orders, 4) work orders, 5) block signals, 6) road crossing mechanism failure, or other equipment failures 5) other restrictions involving the movement of their train. With single-person operations the engineer is responsible for everything. An engineer is a human being who invariably makes mistakes, as all humans do. Human error is the leading cause of accidents and incidents. The existing federal regulations and railroad rules require that the conductor remind the engineer of all of the above and more. Going to a single-person operation eliminates the safety redundancies in the cab that ensure rules compliance and the safe operation of the train and ignores FRA's own research on human error.

2. Train dispatchers routinely give instructions (mandatory directives) that an onboard crewmember must copy down on paper and repeat back to the dispatcher. FRA's regulations state that "[a]n employee operating the controls of moving equipment shall *not* receive and copy mandatory directives." 49 C.F.R. § 220.61(b)(2). (Emphasis added.) The practice therefore is that no one at the controls of a moving train or locomotive is to copy a mandatory directive, so the conductor handles this responsibility. A single crewmember would be required to stop a train in order to copy the directive, leading railroads to pressure the lone employee to copy "on the fly."

3. Many train operations would become impossible. Backing up a train would be impossible with a single-person operation. A single crew could not safely and timely perform a cut between rail cars. Routine rail operation issues that are dealt with today by the standard two-person crew in a safe and timely manner will become significant hazards for the local communities. Hot journals detected by sight or electronic monitoring devices, burst air hoses, broken knuckles and coupling devices, dragging equipment, shifted lading, separating the train at grade crossings, setting out defective equipment, and routine interchange of cars at industries and yards, cannot be performed by a single crew member. All of these events become major safety issues for the local community. Allowing one-person trains will effectively shift the main responsibility for safe operations from the railroad to our local communities.

Local communities will need to figure out how to move their emergency vehicles from one side of the tracks to the other side when a train is blocking a crossing, because the absence of a second train crew member means there will be no way to open that blocked crossing. The concept of having a roving crew member available in a highway vehicle to assist disabled trains demands that the local community accept the inevitable delay of the roving crew member due to traffic on a congested highway or approach to a blocked crossing, and/or in inclement weather. Hours-long delays in dealing with a disabled train blocking a grade crossing and then opening the crossing will become part of the normal process that the local community must deal with. Also, our experience with hot journals and shifted lading demonstrate that prompt action in correcting the problem, or isolating the equipment involved, have prevented many minor issues from becoming major problems. Removal of the second crewmember who today has the responsibility to

promptly leave the locomotive and inspect the disabled train ignores decades of safety considerations for local communities².

We suggest that after this rule goes into effect and before FRA allows any single-person operations, the agency conduct hearings in local communities that will be affected to determine the public support for this significant reduction in rail safety operations. This is an unfunded mandate for them, and most are probably unaware of what is being proposed. FRA's rail safety oversight responsibilities and congressional mandate should require more public notice of this significant change than merely publishing this NPRM in the Federal Register. Small, rural communities that will be impacted should have an opportunity to comment in a public forum before any waiver of a strong crew rule is approved.

4. When a train encounters a signal more restrictive than clear (green), railroad rules demand that the engineer "call" this signal to his/her conductor, who acknowledges the signal. (Some railroads require that all signals be communicated in this fashion). All railroads now classify moving on less than a clear signal as warranting immediate special attention from each member of the operating crew. Without the second crewmember, there is simply no one present to acknowledge the signal, and one of the oldest operating practices in the industry would simply be cast aside as inconvenient. Decision making review and the resulting safety redundancy will be eliminated.

5. Communicating with a track foreman while sounding the whistle for an approaching grade crossing, applying the brakes to reduce the speed of the train, listening for the radio report of a wayside side defect detector, inspecting a standing train in a siding, checking for the proper signal indication to determine that the signal is properly displayed, are all simultaneous actions required by the operating crew, not a single person.

6. Without a second crewmember to assist the locomotive engineer, an endless number of distractions would come into play. The lone crew member would not only have to operate the locomotive, but would also have to handle all radio communication, not just with the train dispatcher, but with signal maintainers, gang foremen, other train crews, etc. The single crewmember would also be responsible for all paperwork, including the train's manifest and the position of all hazardous materials in the train. Currently, these duties fall to the conductor, thereby relieving the train's engineer from the multi-layered distractions that can take the engineer's attention away from the immediate and most safety-critical task at hand — operating the train.

7. During the discussions and research that produced the requirements for a toilet on a locomotive, FRA learned of the significant distraction caused by the regular need for an operating

² The rail industry continues to have too many grade crossing collisions, and the numerous trespasser injuries and fatalities each year that require the train to stop and determine the condition of the person(s) struck by the train. In 2015 there were 2,059 rail highway grade crossing collisions, resulting in 244 fatalities and 967 injuries. That equates to 5.6 crossing accidents every day! Last year, there were 909 trespasser casualties (injuries and fatalities) on the railroads. In California alone there were 98 railroad trespasser deaths and 47 injuries. Our decades of experiences with grade crossing collisions and pedestrians prove that prompt action and relief for the injured by the operating crewmember has saved many lives and prevented events that could have been more tragic. Single-person operations will demand that the local communities accept a major part of the responsibility to assist the injured in a timely manner. Railroad operating rules do not permit the single person on the locomotive to leave the cab, so the life and health of the individuals involved in the collision will be left for the local community to address.

crewmember to go to the bathroom. In a single-person operation there will be pressure from railroads to discourage employees from stopping the train to go to the bathroom, jeopardizing the health of employees and the safe operation of the trains.

8. With a single employee crew, irreplaceable mentoring time would be lost. Conductors gain years of invaluable experience with the signal system, operating rules, air brake system, etc., before they become an engineer. The lack of two employees in the cab means a lack of conversation, learning and discussions of rules and signals, topography, etc. Much of the learning that takes place every time a railroad worker goes to work occurs in the cab of the locomotive, as the two employees share their collective knowledge, experience and wisdom acquired over the years.

9. Following the preventable accident at Lac-Mégantic, in which a major contributing factor was single-person operation, FRA issued a train securement requirement for standing trains. In order to properly secure a train, a sufficient number of handbrakes have to be applied to hold the train without the aid of the train's air brakes. This involves getting out of the locomotive, going from car to car, tying hand brakes, and then returning to the cab of the locomotive. Next, the air brakes need to be released to determine whether the train is secure. If the hand brakes do not hold the train, a crewmember must apply additional handbrakes until they do hold. Since the locomotive engineer cannot leave the locomotive until the train is secured, this is an impossible feat to accomplish with one crewmember. Allowing single-person operations would require significant rewriting and weakening of federal regulations and railroad operating rules in regards to train securement and train inspections.

10. Compliance with air brake testing requirements and protocols (both operating rules and federal regulations) cannot be accomplished because a single employee cannot be in more than one place at a time.

11. The possibility of crime against train crews likely would increase, as thieves and vandals will no doubt become aware that trains are being operated by a single employee. A single operator, in a remote or unsafe location late at night, is extremely vulnerable, especially when outside of the locomotive cab. When an encounter occurs, there might be no one who is aware of the incident for hours.

12. Since 9/11 there has been endless speculation about the possibility of terrorism against the nation's railroads and trains. Because it is impossible to patrol the entire railroad on a regular basis, the government and the railroads rely on railroad workers to watch out for and report suspicious activity. Single-person operations would reduce by half the number of workers in the field looking for suspicious activity. The engineer, having absorbed the duties of the second crewmember, in addition to running the train, cannot be relied upon to see even a fraction of what might be happening along the right-of-way.

13. Currently, railroad operating rules require a complete and thorough "job briefing" between members of the crew at the beginning of each tour-of-duty and when conditions change during the course of the trip. Job briefings are a vital safety component because they allow crewmembers to discuss the duties they are about to perform and agree on how they will perform

these duties in a safe and efficient manner. With a single employee crew, there can be no job briefing as there would be no other crewmember to confer with.

14. Twelve-hour runs are common in the freight rail industry. The vast majority of these runs are unscheduled and oftentimes crews are required to report for duty unexpectedly and are not adequately rested. Over the course of a 12-hour overnight run crewmembers become overwhelmed by fatigue, lose alertness and may fall asleep. With two crewmembers, there is an interaction that combats this inevitable fatigue. They keep each other alert to ensure that the train proceeds safely as required by our complex operating rules. If railroads adopt single-person operations, otherwise preventable fatigue-related catastrophic accidents will quickly bring the industry's fatigue problem into focus. The government will demand additional regulatory development, but only after significant property damage and the inevitable and unrecoverable loss of life occur.

15. If a lone person suddenly becomes incapacitated, there would be no one to assist him/her. A lone crewmember would be especially vulnerable when working on trains traversing remote areas for hundreds of miles. If that crewmember became ill or became incapacitated, it is virtually impossible to get help to that person in a timely manner.

16. For the lone crewmember operating over the road, even simple things can easily cause distraction. Getting lunch from the refrigerator, retrieving a dropped pen from the floor, grabbing a coat from a bag, looking up a specific rule, going to the bathroom -- all of this becomes a far more significant hindrance and a distraction to the lone crew member than when he or she has a partner to lend assistance. The appearance of a signal aspect that governs train movement also can be hard to distinguish from a single perspective inside the locomotive cab. Direct sunlight in the eyes of a crewmember can make determining signal color very difficult from only one vantage point. With an additional crewmember, the signal is called out from one crewmember -- who may have a better visual perspective -- to the other. Different signal positions in the field also create a scenario inside a locomotive cab where vantage point is critical to properly viewing a signal display and aspect early enough to act on it.

17. Some railroad operating rules have a napping policy. Given the lack of scheduling on most railroads, and the nature of freight pool and extra board work, the railroads have allowed train crews to take naps when the train is stopped and secure. However, only one crewmember is allowed to nap at a time. Short naps are a vital tool in combating fatigue, particularly on overnight 12-hour runs. With a single employee operation, the employee would be denied, by rule, the ability to nap, and fatigue will become an even greater safety issue than it currently is.

18. When an operating employee returns from vacation, or other extended period away from work, the territory the worker traverses may often feel a bit "rusty." The second crewmember can be very helpful in reorienting his/her partner to the territory. In addition, upon returning to work after such an absence, things may have changed -- operating rules, special instructions, speed restrictions, etc. Given the complex nature and myriad of rules and procedures that operating crews are subject to, it is easy to inadvertently overlook vital information. Once again, having that second crewmember present -- who typically has been on the job while the other was absent -- adds a layer of protection against a possible oversight by the train operator.

19. Currently, train crews are expected by rule to give a visual “roll by” inspection of other trains when meeting them and alert the other train’s crew of any abnormalities or unusual observations (shifted loads, hot wheel bearings, derailed wheels, etc.). The procedure is for the conductor to leave the cab of the locomotive to view the potential problems with another train on the other side of the track when safe and possible. Since the single crewmember cannot leave the cab of his train, unless it is secured, the roll by will have to be done by looking out the window of the locomotive at only one side, and most defects will go undetected.

These myriad of functions and duties and more cannot be adequately or safely performed by a single person.

II. NEW TECHNOLOGY HAS MADE THE JOB MORE COMPLEX, NOT EASIER

The historical necessity of federal safety oversight of railroad operations led to the creation of both engineer and conductor certification requirements. Technology has made the locomotive cab a more complex work environment with multiple, simultaneous demands for action in rail operations that frequently exceed the capacity and capability of one human being. FRA has addressed this demand for multiple simultaneous actions by restricting the crewmember from operating the locomotive while taking mandatory directives, for example, or from using electronic devices while the train is moving.

In this regard, we agree with FRA’s comment about additional cognitive demands created by PTC:

Four out of the five PTC systems tested used conservative braking profiles to slow the train to the desired target speed under restrictive assumptions (*e.g.*, heavy train or slippery track), train crews discovered that they would need to initiate braking at an earlier point than they were normally accustomed to if they wanted to prevent the PTC system from braking the train for them. *This earlier braking point conflicts with the experienced crews’ effective strategies for operating as efficiently as possible.*

The PTC systems also created *new sources of workload and distraction*. Sources of workload and distractions include the need to acknowledge frequent (and often non-informative) audio alerts generated by the PTC system and the need for extensive input to the PTC system during initialization and when error messages occur while operating the train.

81 Fed. Reg. at 13927 (emphasis added).

FRA’s human factors discussion is very helpful. However the term “situational awareness,” which has become fashionable in the industry, carries with it an inherent bias against the train crew. Nevertheless, FRA has identified the significant problems in human factors in the NPRM; namely, that of task overload.

As renowned human factors expert Sidney Dekker has noted:

Loss of situation awareness is the difference between:

- a) What you now know the situation was actually like;

- b) What people understood it to be at the time.

Dekker goes on to say: "It is easy to show that people at another time and place did not know what you know today. But that knowledge is not an explanation of their behavior. You must guard yourself against mixing your reality with reality of the people you are investigating. Those people did not know there was going to be a negative outcome, or they would have done something else. It is impossible for people to assess their decision or incoming data in light of an outcome they do not yet know about."

Dekker also discusses what is referred to as "loss of modal awareness." This concept is the more likely negative outcome that will be experienced as more duties are given over to automation in the locomotive cab. Loss of modal awareness will occur when a person is either unaware of a modal change in a computer program or cannot keep up with modal changes because they are occurring too quickly. Loss of modal awareness is a more specific problem than "situational awareness," because changing modes can be tracked whereas situational awareness places too much emphasis on one person trying to second guess what another person decided, with hindsight benefit of an accident after it occurred.

Moreover, we recently wrote FRA asking for an emergency order to stop the use of "Trip Optimizer" and "LEADER" systems until they are properly vetted and we are able to mitigate the terrible distractions they are causing train crews. Our initial reports of PTC operations have also been negative. Trains are slowed and stopped in the wrong places; crews are being prompted to exceed their train's authority and are being constantly forced to interact with computer screens that distract them from the road ahead. To make matters even worse, rail managers are demanding that the crew document any instance in which they vary from the computer directives, or risk facing discipline. These recent technological additions pose the greatest electronic distractions we now face in the industry, making the second crewmember more vital than ever.

Train crews support the implementation PTC because it will help prevent collisions and save lives. However, FRA, the public and employees should not be forced to trade one safety enhancement like a second crewmember in order to get the benefits of PTC. Imagine being asked to trade your seat belt for an air bag in your car or vice versa. You want both. They are both designed to keep you safe, but they are not substitutes for one another; rather they are complementary to one another. Moreover, there will be operational demands that require overriding a PTC system once it is implemented.

III. FATIGUE AND OTHER FACTORS

The vast majority of freight rail workers have unpredictable work schedules. They are on call 24 hours a day, 7 days per week, and must report for duty with as little as 1 hour and 15 minutes notice. Unpredictable work schedules are the unfortunate norm. The changes to the hours of service law in the 2008 Rail Safety Improvement Act increased the rest requirement from 8 hours to 10 hours, but did nothing to address the issue of unpredictable work schedules or advance notice of on-duty times. Train crews are constantly called to work unexpectedly and required to work 12 hour shifts, often overnight. As a result, it is imperative that each train has a minimum of two crew members who can keep each other alert and ensure the train is operated safely.

Moreover, a person operating a train alone at all hours of the day and night in a small, dark space will experience a type of isolation and anxiety that has few analogues. How will rail carriers manage the feeling of working without a backup and the stress of someone carrying the entire burden of responsibility on his/her shoulders alone?

In addition to FRA's discussion and questions about efficiency are the negative by-products of downsizing the workforce. Operating a freight train with a single employee over hundreds of miles of mainline track, with hundreds of grade crossings and dozens of passing trains, causes an unjustifiable degradation of safety for the employees and local communities. The only positive contribution single-person operations will make is to reduce the payroll of the operating crews for a very profitable industry. Issues such as distrust, decreased productivity and lower worker morale on an already fatigued workforce have not been factored into the discussion, and we believe people specializing in social sciences would have much more to add in this regard due to it being outside the Labor Organizations' areas of expertise. We can, however, offer comments based on the real world experiences of practitioners of our crafts.

We request that FRA consider how new and different physical and cognitive burdens on lone crew members will affect safe operations. A reduction in workforce also will lead to a reduction in job quality. The railroad industry is already in the midst of a trend in which it is losing substantial institutional knowledge due to workforce age demographics. If the industry exacerbates this trend, in which employees feel continually overloaded with additional burdens that they were not previously required to perform, there will be a transient workforce of people who never become experts in their field, which is a significant safety risk.

Adding all of the duties and responsibilities of a conductor to those of a lone engineer creates very unsafe conditions. Moreover, to allow single-person operations when railroad operations are undergoing rapid and complex changes is particularly disturbing. For example, the newly added in-cab distractions, such as Positive Train Control ("PTC"), BNSF and General Electric's Trip Optimizer, and UP's and New York Air Brake's Leader — each of which requires the crew to frequently interact with an onboard computer — make the second crewmember more important than ever. The nature of the train crew's work is rapidly requiring more cognitive attention to in-cab information and prompts, in simultaneous coordination with the traditional train handling responsibilities.

In addition, many functions performed by a certified conductor cannot be safely handled by the engineer and vice versa. For example, a lone engineer cannot safely separate a train at a high-way-rail crossing, flag a crossing, properly secure a train left standing unattended, pick up and set-out cars, receive and acknowledge mandatory directives while moving, assist emergency responders or passengers, leave the locomotive to check for defects, inspect other trains while standing in a siding from the off side, and cannot deal with collisions and derailments without waiting for a third party to arrive from unknown locations, etc. Similarly, only a certified engineer can manipulate the controls of a locomotive, perform daily inspections on a locomotive, perform air-brake tests at the control stand of the locomotive, and make decisions regarding train handling and real time movements as they occur on a moving train. These examples are requirements of the job distinct from a conductor's duties.

The FRA acknowledges that current operations have achieved an improving safety record when two person crews are the norm. (81 Fed. Reg. 13919). Common sense dictates that the same level of safety cannot be maintained when the engineer is forced to absorb all of the duties of a conductor. There have also been countless accidents prevented by having the conductor in the locomotive. Safety redundancy and the concept that operations be fail-safe is particularly important on a railroad.

THE ONLY SAFE TRAIN OPERATION IS ONE THAT HAS BOTH A CERTIFIED CONDUCTOR AND A CERTIFIED ENGINEER.

Although there seems to be some suggestion that the second crew member may not necessarily need to be certified. The use of anyone other than a certified Conductor defeats the purpose of the rule as well as the standard already developed by FRA with regard to qualifications for this position. There is significant training and certification and recertification for a reason. The FRA has considered these positions safety-sensitive and has demanded that the persons holding them be properly trained. Congress mandated in the 2008 Rail Safety Improvement Act that FRA enact regulations to federally certify railroad conductors, which they did. To now say that the 2nd crewmember not need to be a conductor flies in the face of the law and FRA's own regulation in section CFR 49-242.³

IV. OPTIONS ONE AND TWO

In order to ensure the full benefits of this rule are achieved, FRA should establish a broad two-person crew requirement and avoid establishing a series of exceptions that would effectively exempt much of the industry from the minimum crew size requirement. If carriers seek exception to the standard, FRA should require them to apply for a waiver through the process established at 49 CFR Part 211. Under that process, carriers would be required to describe the need for operating single-person crews and demonstrate that doing so would not diminish safety. This approach applies a consistent standard across the industry while still providing avenues for narrow exceptions.

However, if FRA does not require carriers to seek a Part 211 waiver and instead moves forward with one of its two special approval/continuance of operations proposals offered in the NPRM, we strongly urge FRA to close the loopholes in both options that would permit carriers to begin/continue one-person operations prior to FRA's affirmative approval.

The NPRM proposes two options by which carriers *not* employing two-person operations prior to January 1, 2015 may begin operating single-person crews. Option 1 proposed section 218.35 requires such carriers to file a petition with FRA and allows the railroad to file a subsequent request with the agency if it fails to issue a decision within 90 days of receiving the petition. Notably, if FRA does not reply to the second request after 30 days, "the railroad may implement the

³ Although a person may be certified to perform the duties of an engineer and a conductor — and hold certification in both professions — the nature of the qualification and certification does not assume an individual is routinely performing both jobs simultaneously. The jobs are performed distinctly from one another, while sharing certain overlapping characteristics due to both positions sharing the cab environment in freight operations. Consequently, the analysis of Cognitive Tasks of Locomotive Engineers and Freight Conductors by FRA is instructive because it identifies the differences between each craft.

operation as described” in the petition, i.e. carriers can implement a new operating scheme that reduces its crew size without FRA’s affirmative approval.⁴

FRA’s Option 2 proposed 218.35 requires that carriers file with FRA certain information about the operation. At (e), the proposed regulation states that: “[a] railroad may initiate a start-up train operation with less than two crewmembers after the railroad submits the information identified in this section to FRA unless FRA informs the railroad that the information is incomplete.”⁵ The preamble explains that once the carrier asserts its operations are safe and begins running, the burden is on FRA to disprove the carrier’s asserted safety. Thus, this option substantially relies on carriers’ assessment of their own plans, potentially allowing unsafe operations to take place until some unspecified impetus prompts the agency to investigate.

We also note that only option 1 requires that labor officials be notified of carriers’ plans to reduce crew size, as option 2 makes no such requirement. Under both scenarios, employees and their representatives must be required to be part of this decision-making process and must be notified of such impending changes to operating procedures.

The NPRM also offers two competing proposals by which carriers operating one-person freight trains prior to January 1, 2015 may request to continue such operations. Option 1 proposed 218.133 requires that railroads file with FRA a description of the operation which includes a series of elements including a safety analysis. This option seemingly permits carriers to continue one-person operations “[u]nless FRA notifies a railroad that an operation is deemed unsuitable for continuance or may only continue with any additional conditions attached...”⁶ While the preamble describes this option as requiring carriers to receive FRA’s explicit approval before continuing operations, the actual regulatory text quoted above suggests the opposite is true.

Even more concerning, option 2 proposed 218.133 permits carriers to continue conducting one-person operations simply “upon filing the description of each operation with FRA.”⁷ Notably, under this option, carriers must perform a safety analysis but merely keep it on file and make it available to the agency upon request. Moreover, FRA states that existing one-person operations “will be presumed to have been operating with an adequate level of safety, unless FRA determines otherwise.”⁸ We have serious concerns for the weight this option gives to carriers’ judgment of its own safety. FRA must carefully review current single-person operations and make its own determinations as to whether operations are safe.

No single-crew operations should be permitted to operate with fewer than two professionals until FRA has reviewed the carrier plans and determined safety will not be diminished. While we endorse a broad two-person crew requirement and instructing carriers to pursue a waiver through Part 211, if FRA moves forward with either of these proposed options for existing or start-up op-

⁴ Federal Railroad Administration, Department of Transportation, Train Crew Staffing Notice of Proposed Rulemaking. March 15, 2016, FR 81, 13965.

⁵ *Id.* at 13966.

⁶ *Id.* at 13965.

⁷ *Id.* at 13965-13966.

⁸ *Id.* at 13952.

erations, the shortcomings addressed above must be closed. Otherwise, FRA's work to regulate the safety of operations by establishing a minimum crew size will be swiftly subverted.

V. RESPONSE TO FRA QUESTIONS NOT ANSWERED ABOVE

A. FRA further "requests public comment on how railroad operations can and do safely and efficiently comply with these regulations with one-person crews or autonomous trains." The notion that automated trains are at all safe is only fostered by the public's and Congress's unfamiliarity with the technical aspects of railroad operations, Positive Train Control and crewmembers' responsibilities. The public has little, if any, awareness of the consequences of an autonomous freight train derailment.⁹ Simply put, drone freight trains would be an unmitigated disaster waiting to happen as they roll through neighborhoods, moving over public crossings, and adjacent to schools and other locations of high population density.

As for complying with existing regulations, single person operations would require a rewrite and weakening of nearly all safety regulations with no experience basis. Wholesale carve-outs would need to be made of safety provisions that currently require one crewmember to operate the train while another crewmember can be mobile in order to tend to other parts of the same train. But autonomous operations raise complications and safety trade-offs that simply cannot and should not be addressed without a far deeper and more learned examination. This is not the time — and this NPRM is not the place — to initiate a discussion concerning about such a dangerous and potentially calamitous suggestion.

B. FRA also seeks comment regarding what "risk mitigating measures will railroads use to safely and efficiently comply with these regulations using one-person crews." The rail carriers have said on many occasions that the introduction of PTC alone would provide an acceptable rationale for crew size reduction. However, this assertion flies in the face of what PTC is mandated and designed to do. In its final rule regarding PTC, FRA rightly recognized that crew size reduction cannot be conflated with PTC:

Train crews perform as a team and are required by railroad and FRA rules to do so. The importance of having assigned crew members fully involved in train operations is also clearly the intent of Congress in the RSIA. The Congress mandated the certification of the conductor to work in concert with the already federally certified locomotive Engineer. For the conductor and engineer to fulfill the expectations of Congress, it is necessary for both crewmembers to have sufficient information to perform their duties. For the conductor to be able to fulfill the assigned obligations, the conductor must have ready access to certain information, including the authority information being received from the dispatcher. As described below, FRA believes that safety would be materially diminished if

⁹ For example, during the NTSB hearing on the Paulsboro, NJ derailment which resulted in the leak of vinyl chloride into the Mantua Creek, the hearing disclosed that the derailment occurred just outside the back yard of the fire chief — the town's chief safety officer — who stood on his back porch and concluded he was safe because the gas cloud remained below the elevation of his home. Furthermore, it was the two-person crew who left in opposite directions from the derailment site to alert approaching first responders of the danger that prevented what could have caused significant injuries. Without their presence, one can only imagine what would have happened.

the conductor in freight operations were denied access to the same information in the same format as the engineer.

75 Fed. Reg. 2668 (Jan. 15, 2010).

We fully concur with this FRA policy. We also support FRA's position that "safety regulations were written with at least a 2 person crew in mind and that operating with one person by themselves may in some cases compromise railroad and public safety and that it is difficult to comply with current safety regulations and operating rules when operating with 1 person." FRA presentation RSAC Crew Size Working Group, "Appropriate Train Crew Size Task No. 13-05," December 18, 2013.

In this regard, FRA asks whether any of the legions of regulations that were predicated on a two-person crew "should ... be revised to allow one-person crews to operate safely and efficiently." There is no question that numerous regulations would have to be substantially revised and weakened to address single-person operation. As for the frame of reference from which FRA would determine what sort of changes would retain an appropriate level of safety, we cannot say. The current rail safety regulatory scheme is the product of nearly two centuries of trial and error — during which tens of thousands of lives and limbs were lost — from lessons learned in a multi-person crew operation that only recently has been reduced to two persons and, even today, not in all situations.

In CFR Parts 200-299 there is hardly a section that would not require a revision in order to not only allow single person operations to occur, but to perform those operations safely and efficiently. To do so, all the industry would have to engage in is a drafting effort that would strain the most liberal cost benefit analysis. A rule-by-rule examination would be required and we, submit, no rule should be changed unless safety-related effects of the change can reasonably be projected.

C. FRA also seeks "comments on the range of safety risks posed by work trains and the 4,000 trailing tons limitation to see if it is too expansive." 81 Fed. Reg. at 13947. We have two. The first is that FRA already has imposed limitations on what work may be performed when a single person is operating a train; they can be found in Section 218.24, which is mentioned nowhere in the NPRM and, therefore, FRA has not provided a sufficient basis for us to envision how FRA intends to meld this provision with the existing limitations.

Secondly, FRA appears not to have taken into account the various types of movements a work train can make. FRA notes that the 4,000 trailing tons threshold "would allow a railroad to operate a work train with potentially up to 50 cars attached to locomotives." *Id.* When such a work train is at the site where work is being performed it generally is stationary or moving at very slow speeds, which presents one set of safety risks. However, when the train is being moved from the location where maintenance crews assemble to the worksite — or is being transported from one work area or reporting site to another — the movements of the train are indistinguishable from those of any other 50-car freight train, which presents an entirely different set of safety risks. Emergency responders stuck at a crossing that is blocked by a train being operated by a single-person crew that is stopped with a burst air hose will be no more understanding if told that

they were impeded by a work train, and not a “real” train. We believe the 4,000 trailing tons threshold is an arbitrary factor that is rooted in railroad economics rather than railroad safety.

D. As for remote control locomotive (“RCL”) operations the NPRM states:

Although FRA has long perceived RCL operations as being best utilized for switching services, it is understandable that a railroad might need to move an RCL from one location to another where the RCL can be more efficiently used. FRA has recently become aware that more railroads appear to find it an acceptable practice to use a one-person RCL job to service customers. FRA does not find the practice inherently unsafe given the limitations of the technology. However, FRA might be more concerned if railroads tried to operate the one person RCL jobs at speeds greater than 15 mph, and with increased complexity beyond the known acceptable limitations previously acknowledged by the industry. The NPRM reflects these acceptable limitations and a copy of the correspondence reflecting those agreed upon limitations has been added to the docket. The RCL operations limitations do not contain a distance restriction, although FRA’s guidance on the issue explained that the agency expected that an added limitation would be for these operations to be restricted to main track terminal operations. Considering the 15 mph speed restriction, FRA did not anticipate that RCL operations would expand beyond main track terminal operations. Although FRA does not believe that RCL operations that are so limited need a distance restriction, FRA would appreciate any comments on this issue.

Id. at 13947. A RCL locomotive can be moved from one location to another by operating it in conventional mode and that would alleviate every concern FRA might have. We take exception to FRA’s suggestion that operating RCL on mainlines at greater speeds and for greater distances is not inherently unsafe given the limitations of the technology. At this point, FRA does not have the data to evaluate the issue and apparently is basing its finding on mere surmise because these movements about which the agency says it “recently became aware” apparently have not yet resulted in an accident or incident that came to its attention.

E. FRA also seeks comments on Helper Service. These locomotives are used by some railroads to do more than provide helper service. We agree that it may be safe for a train to assist another train that has incurred mechanical failure or lacks the power to traverse difficult terrain, but not with a single person. A proper locomotive brake test that is required cannot be made with a single employee. Helper service assignments should have a certified engineer and certified conductor. Furthermore, a few railroads also attempt to use single person helper locomotives to switch cars at locations away from the terminal. That practice must be addressed by this regulation and expressly prohibited for the safety of the employees and the public.

F. FRA also seeks comments on the use of light locomotives. We urge FRA to reconsider excepting light locomotives. Light locomotives are the most difficult to slow and stop of all train movements because of the sheer weight of the locomotives and the low number of brake shoes on the wheels and low amount of braking power. Nine locomotives weighing 200 tons each reach a total weight of 1800 tons. A single locomotive pulling 50 empty cars weighing an average of 30 tons each, also equals 1800 tons. The light locomotives have 54 wheels braking and the train with one locomotive and 50 cars has 206 wheels of braking power. Every engineer knows that one has to be extremely careful operating light locomotives because of their very poor braking. In addition there also is no way to properly test the release of locomotive brakes

when locomotive power is reconfigured or a new lead locomotive is added, without a second crew member visually checking.

VI. PUBLIC AND CONGRESSIONAL SUPPORT

The public has also signaled its strong support for a two-person requirement. A survey of six states and five congressional districts, conducted between January and December of 2015 by DFM Research on behalf of the SMART Transportation Division, highlights the broad support for two-person crews. (Compilation attached) Respondents to the survey were asked about general concerns about train derailments, support levels for two-person crew legislation and commonly used arguments supporting and opposing a two-person crew requirement. The combined results of all eleven surveys show 86% support among respondents for legislation mandating two-person crews and only 10% in opposition. This support cuts across geographic, demographic and partisan lines. Specifically, the survey data indicates that 82% of self-identified Republicans, 84% of Independents and 91% of Democrats support a two-person mandate. Alabama and Minnesota, states with vastly different partisan demographics, support a two-person crew mandate at rates of 87% and 83% respectively. Further, the survey data shows that women and men are both very likely to support two-person crews, with 88% of female respondents supporting such a policy along with 83% of male respondents.

Legislation requiring that all freight trains in American are operated by a crew of at least two people – a certified conductor and a certified engineer – has also received bipartisan support in Congress. During the 113th Congress, H.R. 3040, the Safe Freight Act, was introduced by Congressman Michael Michaud, a Democrat, and had 82 bipartisan cosponsors. This Congress, the same legislation was reintroduced by Representative Don Young, a Republican former Chairman of the House Transportation and Infrastructure Committee, and has similarly received bipartisan support from 62 House members. Cosponsorship of the bill, H.R. 1763, the Safe Freight Act, ranges from Congressmen Louie Gohmert and Trent Franks, Republican members of the conservative House Freedom Caucus, to Congressmen Raul Grijalva and Keith Ellison, Democratic leaders of the House Progressive Caucus.

* * * * *

We appreciate the opportunity to address the NPRM and look forward to fully participating in the rulemaking process, including by providing testimony at the upcoming public hearing.

Respectfully submitted,



Dennis Pierce
National President, BLET/IBT



John Previsich
President, SMART-Transportation Division

**December
2015**

**Two-Person Crew
Combined Survey Results**



DFM Research

Dean Mitchell, Consultant

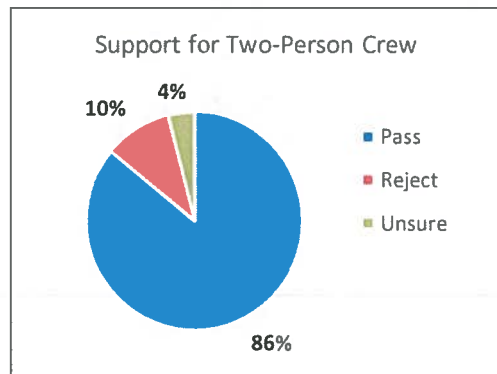
Saint Paul, MN 55102

www.dfmresearch.com

To: Interested Parties
 From: DFM Research, for SMART Transportation Division
 Date: January 13, 2016
 RE: Support Level for Two-Person Crew

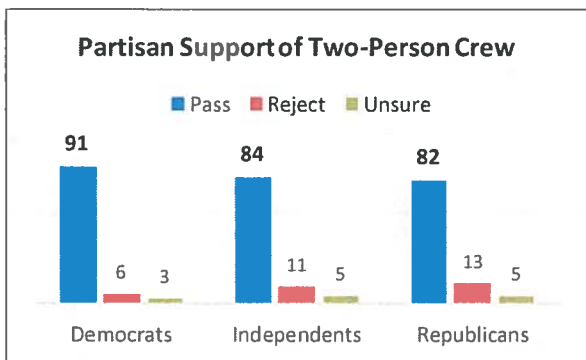
The result of 11 surveys in 2015 representing a diverse geographic mix of the American community (plus survey from data from 2013 and 2014) clearly and consistently demonstrate strong support for legislation requiring a crew of two individuals on all freight trains. The combined data (5,510 interviews between January and December 2015) is from six states and five congressional districts (representing in total about ten percent of the American population) using both cell phones and landlines.

During the course of the interviews, all respondents were asked about train derailment concerns, support levels for two-person crew legislation, and message testing of commonly used arguments by both rail management and rail labor regarding their position on two-person crew legislation. The arguments against two person crew legislation are from a 2013 AAR letter to Congress and other statements from railroad executives. The combined results show 86 percent support two-person crew legislation, with only 10 percent in opposition.



Generally speaking, there is minimal variation amongst demographic groupings; with women, those with some college education, and Democrats slightly more likely to support two-person crew legislation than their counterparts. Findings include:

- Women are more likely than men to support two-person crew legislation: 88 percent of women support legislation, compared to 83 percent of men.
- Those who report some college education are slightly more likely to support two-person crew legislation (88 percent), than those with a college degree (82 percent) or a high school education (86 percent).



- Support levels vary little (well within the margin of error) based on age; ranging from 84 percent of those under age 40, to 87 percent over the age of 65.
- The data indicates that two-person crew legislation is not a partisan issue when it comes to constituents; 82 percent of self-identified Republican 84 percent of Independents and 91 percent of Democrats support the legislation.

In conclusion, no matter who you are, where you live, or what your partisan inclinations, Americans strongly support two-person crew legislation.

Combined Data

11 Surveys Representing 45 Congressional Districts from 2015
Data Weighted by District/State

Q22: Now considering everything you just heard about that would require all freight trains to operate with a crew of at least two people; would you vote YES to pass such legislation, or would you vote NO and reject such legislation?

Yes, Pass	86%
No, Reject	10
(VOL) Unsure	4

<u>Gender</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Men	83%	13	4
Women	88	8	4
<u>Age</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
18-39	84	12	4
40-64	86	10	4
65 plus	87	8	4
<u>Education</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
High School/Less	86	9	5
Some College/AA Degree	88	9	3
Bachelor/Graduate Degree	82	13	5
<u>Party Identification</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Democrat	91	6	3
Independent	84	11	5
Republican	82	13	5
<u>State / District</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Alabama	87	9	4
IA-1	80	15	5
CA-10	75	19	6
FL-13	86	9	5
Missouri	82	14	4
Minnesota	83	12	5
North Carolina	90	7	3
IL-17	87	9	4
Nebraska	84	10	6
North Dakota	88	6	5
NY-22	82	9	9

Alabama

Partisan Voting Index Rating: R+14

Interviews: 600 respondents by live caller using cell phone and landlines.

Margin of Error: ± 4.0 percentage points with a 95 percent confidence

Interview Dates: December 12-19, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 7,500 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area and 2,500 cell phone numbers, which then were stratified into the seven congressional districts.

Survey Sponsor: SMART Transportation Division's Alabama State Legislative Board

Q23: Now considering everything you just heard about a potential state law that would require a crew of two individuals on all freight trains. If you could vote again, would you vote YES to pass a two-person crew state law, or would you vote NO, and reject a two-person crew state law?

Yes, Pass	87%
No, Reject	9
(VOL) Unsure	4

<u>Gender</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Men	84%	12	4
Women	89	6	5
<u>Age</u>			
18-39	84	11	5
40-64	89	8	3
65 plus	89	5	6
<u>Education</u>			
High School	89	6	5
Some College	90	8	2
College Degree	79	15	6
<u>Race</u>			
White / Caucasian	87	8	5
Black / African American	88	9	3
<u>Party Identification</u>			
Democrat	92	7	1
Independent	82	11	7
Republican	86	8	6

Iowa 1st District

Partisan Voting Index Rating: D+5

Interviews: 400 respondents by live caller from Stone Research Services of Indianapolis, Indiana
Margin of Error: ± 4.9 percentage points with a 95 percent confidence
Interview Dates: November 4-11
Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 6,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area and 2,000 cell phone numbers, which then were stratified into five distinct geographical regions.
Survey Sponsor: SMART Transportation Division's Iowa State Legislative Board

Q23: Now considering everything you just heard about H.R. 1763, The Safe Freight Act. If you could vote on this federal legislation once again, would you vote YES to pass H.R. 1763 or would you voted NO, and reject H.R. 1763.

Yes, Pass	80%
No, Reject	15
(VOL) Unsure	5

<u>Gender</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Men	76%	20	4
Women	84	11	5
<u>Age</u>			
18-39	80	14	6
40-64	81	15	3
65 plus	77	17	6
<u>Education</u>			
High School	83	10	7
Some College	81	14	5
College Degree	73	25	2
<u>Region</u>			
Linn County	83	13	4
Black Hawk County	71	20	9
Dubuque Area	81	12	7
Northern Counties	87	10	3
Southern Counties	76	20	3
<u>Party Identification</u>			
Democrat	87	7	6
Independent	75	21	5
Republican	78	18	4

California 10th District

Partisan Voting Index Rating: R+1

Interviews: 365 likely voters in California's 10th Congressional District; conducted by live caller from Stone Research Services of Indianapolis, Indiana

Margin of Error: ± 5.1 percentage points with 95 percent confidence

Interview Dates: October 6-14, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 8,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area and 2,000 cell phone numbers, which then were stratified into three distinct geographical regions.

Survey Sponsor: SMART Transportation Division's National Legislative Office

Q22: Now considering everything you just heard about H.R. 1763, The Safe Freight Act. If you could vote on this federal legislation once again, would you vote YES to pass H.R. 1763 or would you voted NO, and reject H.R. 1763.

Yes, Pass	75%
No, Reject	19
(VOL) Unsure	6

<u>Gender</u>	<u>Pass</u>	<u>Reject</u>	<u>Unsure</u>
Men	75%	20	5
Women	75	18	7
<u>Age</u>			
18-39	67	26	7
40-64	78	16	6
65 plus	77	17	6
<u>Education</u>			
High School	72	18	11
Some College	77	16	7
College Degree	76	22	2
<u>Race/Ethnicity</u>			
White	77	18	6
Latino	74	22	4
All Other	67	19	13
<u>Region</u>			
Modesto	72	20	8
Stanislaus County	80	16	4
San Joaquin County	71	22	7
<u>Party Identification</u>			
Democrat	83	14	3
Independent	65	24	11
Republican	74	21	6

Florida 13th District

Partisan Voting Index Rating: R+1

Interviews: 400 respondents by live caller from Stone Research Services of Indianapolis, Indiana
Margin of Error: + 4.9 percentage points with a 95 percent confidence
Interview Dates: July 20-27, 2015
Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 6,500 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area and 1,250 cell phone numbers.
Survey Sponsor: SMART Transportation Division Florida State Legislative Board

Q22: Now considering everything you just heard about H.R. 1763, The Safe Freight Act which would require all freight trains to operate with a crew of at least two; if you could vote on this once again, would you vote YES to pass H.R. 1763, or would you vote NO and reject H.R. 1763?

Yes, Pass 86%
 No, Reject 9
 (VOL) Unsure 5

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	84%	12	5
Women	87	7	6

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	82	12	6
40-64	88	9	3
65 plus	86	6	8

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	87	7	6
Some College/AA Degree	90	7	4
Bachelor/Graduate Degree	80	14	7

<u>Race</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
White/Caucasians	87	8	5
All Others	80	13	7

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	92	4	5
Independent	81	12	7
Republican	85	10	5

<u>Political Ideology</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Liberal	92	3	5
Moderate	89	5	6
Conservative	77	18	4

Missouri

Partisan Voting Index Rating: R+5

Interviews: 680 respondents by live caller from Stone Research Services of Indianapolis, Indiana
Margin of Error: ± 3.8 percentage points with a 95 percent confidence
Interview Dates: June 22 – July 3, 2015
Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 8,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area and 2,000 cell phone numbers, which then were stratified into five distinct geographical regions.
Survey Sponsor: SMART Missouri State Legislative Board

Q22: Now considering everything you just heard about H.R. 1763, The Safe Freight Act which would require all freight trains to operate with a crew of at least two; if you could vote on this once again, would you vote YES to pass H.R. 1763, or would you vote NO and reject H.R. 1763?

Yes, Pass	82%
No, Reject	14
(VOL) Unsure	4

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	79%	17	4
Women	84	11	5

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	81	14	4
40-64	82	13	4
65 plus	81	14	4

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	80	13	7
Some College/AA Degree	88	11	1
Bachelor/Graduate Degree	78	18	3

<u>Race</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
White/Caucasians	81	14	4
All Others	83	12	4

<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
St. Louis Metro	83	14	3
Kansas City Metro	87	9	4
Northern Missouri	82	14	5
Central Missouri	80	15	4
Southern Missouri	79	16	5

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	88	9	3
Independent	82	13	5
Republican	76	19	5

Minnesota

Partisan Voting Index Rating: D+2

Interviews: 665 residents over the age 18 that reside in Minnesota

Margin of Error: ±3.8 percentage points

Interview Dates: April 11-19, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided 8,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area, and 2,250 cell phone numbers; which then were stratified into five distinct geographical regions. Calls conducted by professional callers of Stone Research Services based in Indianapolis, Indiana.

Survey Sponsor: SMART Transportation Division's Minnesota Legislative Office

Q22: Now considering everything you just heard about SF 918, the two-person train crew bill. If you could vote on this once again, would you vote YES to pass SF 918, or would you vote NO and reject SF 918?

Yes, Pass	83%
No, Reject	12
(VOL) Unsure	5

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	80%	16	4
Women	86	9	5
<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	83	12	5
40-64	81	14	5
65 plus	88	7	4
<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	83	10	7
Some College/AA Degree	86	11	3
Bachelor/Graduate Degree	80	15	5
<u>Race</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
White/Caucasians	85	11	4
All Others	72	21	7
<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Twin City Urban	81	13	6
Twin City Suburban	83	13	5
Southern Minnesota	88	6	5
Western Minnesota	84	11	5
Northern Minnesota	84	13	2
<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	89	8	3
Independent	80	13	7
Republican	80	15	5

North Carolina

Partisan Voting Index Rating: R+2

Interviews: 600 residents over the age 18 that reside in North Carolina
Margin of Error: ±4.0 percentage points
Interview Dates: March 9-20, 2015
Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 7,500 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area, and 2,500 cell phone numbers; which then were stratified into five distinct geographical regions.
Survey Sponsor: SMART Transportation Division's North Carolina State Legislative Office

Q22: Now considering everything you just heard about legislation that would require all freight trains to operate with a crew of at least two people; if you could vote, would you vote YES to pass such legislation, or would you vote NO and reject such legislation?

Yes, Pass 90%
 No, Reject 7
 (VOL) Unsure 3

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	88%	8	4
Women	92	6	2
<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	89	9	3
40-64	91	6	3
65 plus	91	5	3
<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	92	7	2
Some College/AA Degree	91	6	3
Bachelor/Graduate Degree	88	7	5
<u>Race</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
White/Caucasians	89	7	4
Black/African-American	96	4	0
All Others	88	8	4
<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Charlotte Area	88	8	5
Raleigh-Durham Area	86	8	6
Eastern NC	91	7	2
Central NC	91	6	3
Western NC	94	5	1
<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	94	4	2
Independent	90	6	4
Republican	86	10	4

Illinois 17th District

Partisan Voting Index Rating: D+7

Interviews: 400 residents over the age 18 that reside in Illinois' 17th Congressional District

Margin of Error: ±4.9 percentage points

Interview Dates: February 21-24, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 5,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area, and 2,500 cell phone numbers; which then were stratified into four distinct geographical regions.

Survey Sponsor: SMART Transportation Division's Illinois State Legislative Office

Q24: Now considering everything you just heard about that would require all freight trains to operate with a crew of at least two people; would you vote YES to pass such legislation, or would you vote NO and reject such legislation?

Yes, Pass	87%
No, Reject	9
(VOL) Unsure	4

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	84%	12	5
Women	90	6	4

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	88	9	3
40-64	85	9	6
65 plus	90	7	4

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	87	8	5
Some College/AA Degree	92	5	3
Bachelor/Graduate Degree	77	19	5

<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
North District	90	8	3
Quad City Area	88	8	4
South District	85	10	5
Peoria Area	82	12	6

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	97	1	1
Independent	86	9	5
Republican	75	17	8

<u>Ideology</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Liberal	95	3	1
Moderate	90	7	3
Conservative	80	12	8
Tea Party (Favorable)	80	12	8
Tea Party (Unfavorable)	91	7	2

Nebraska

Partisan Voting Index Rating: R+12

Interviews: 600 residents over the age 18 that reside in Nebraska
Margin of Error: ±4.0 percentage points (unless otherwise noted)
Interview Dates: February 3-8, 2015
Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 6,000 residential random phone numbers and 2,200 cell phone numbers.
Survey Sponsors: SMART Transportation Division's Nebraska Legislative Board

Q11: Now considering everything you just heard about LB 192 requiring a crew of two on all freight trains. If you could vote, would you vote YES to pass LB192, or would you vote NO and reject LB192?

Yes, Pass LB 192 **84%**
 No, Reject LB 192 **10**
 (VOL) Unsure **6**

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	81%	13	6
Women	87	8	5

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	82	13	5
40-64	87	7	6
65 plus	81	11	8

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	83	11	6
Some College/AA Degree	86	9	5
Bachelor/Graduate Degree	84	10	6

<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
1 st District	83	10	7
2 nd District	86	11	3
3 rd District	84	9	6

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	89	5	6
Independent	86	10	4
Republican	80	13	7

<u>Ideology</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Liberal	85	9	5
Moderate	87	9	4
Conservative	82	11	7
Tea Party (Favorable)	82	13	5
Tea Party (Unfavorable)	89	8	3

North Dakota

Partisan Voting Index Rating: R+10

Interviews: 400 residents over the age 18 that reside in North Dakota

Margin of Error: ±4.9 percentage points

Interview Dates: January 17-26, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 4,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area, and 1,700 cell phone numbers; which then were stratified into five distinct geographical regions.

Survey Sponsors: SMART Transportation Division's North Dakota Legislative Board

Q18: Now considering everything you just heard about the Safe Freight Act; suppose you could vote on the bill. Would you vote YES to pass the Safe Freight Act or would you voted NO, and reject The Safe Freight Act?

Yes, Pass	88%
No, Reject	6
(VOL) Unsure	5

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Men	83%	11	6
Women	93	2	5

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
18-39	87	8	6
40-64	89	6	5
65 plus	90	5	5

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
High School/Less	88	3	8
Some College/AA Degree	88	9	3
Bachelor/Graduate Degree	88	7	5

<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
East City	94	3	3
West City	82	10	8
East Rural	83	10	7
Central Rural	92	7	1
West Rural	87	4	9

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Democrat	93	3	3
Independent	88	6	6
Republican	85	9	5

<u>Ideology</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
Liberal	92	2	6
Moderate	91	4	5
Conservative	84	11	5
Tea Party (Favorable)	79	11	9

New York 22nd District

Partisan Voting Index Rating: R+3

Interviews: 400 residents over the age 18 that reside in New York's 22nd Congressional District

Margin of Error: ±4.9 percentage points

Interview Dates: January 10-15, 2015

Sample: Landline and cell phone sample. Random digit numbers provided by Survey Sample International (SSI) of Fairfield, CT. SSI provided Stone Research with 5,000 residential random phone numbers from a pool of listed and unlisted numbers in the boundary area, and 2,500 cell phone numbers; which then were stratified into three distinct geographical regions.

Survey Sponsor: SMART Transportation Division's National Legislative Office

Q24: Now considering everything you just heard about the Safe Freight Act; suppose you could vote on the bill. Would you vote YES to pass the Safe Freight Act or would you voted NO, and reject the Safe Freight Act?

Yes, Pass	82%
No, Reject	9
(VOL) Unsure	8

<u>Gender</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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<u>Men</u>	79%	13	9
<u>Women</u>	86	6	8

<u>Age</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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18-39	82	11	7
40-64	85	8	7
65 plus	78	9	13

<u>Education</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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High School/Less	79	11	10
Some College/AA Degree	84	8	8
Bachelor/Graduate Degree	87	8	5

<u>Region</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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South Counties	87	6	7
Middle Counties	77	11	12
North Counties	82	11	7

<u>Party Identification</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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Democrat	86	10	4
Independent	78	13	9
Republican	84	5	11

<u>Ideology</u>	<u>Yes</u>	<u>No</u>	<u>Unsure</u>
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Liberal	89	7	4
Moderate	85	9	6
Conservative	78	10	11
Tea Party (Favorable)	75	12	12