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RAILROAD SAFETY ENHANCEMENT ACT OF 2007

HEARING

BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION AND MERCHANT MARINE INFRASTRUCTURE, SAFETY, AND SECURITY

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

JULY 26, 2007

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RAILROAD SAFETY ENHANCEMENT ACT OF 2007

THURSDAY, JULY 26, 2007

U.S. SENATE,
SUBCOMMITTEE ON SURFACE TRANSPORTATION AND
MERCHANT MARINE INFRASTRUCTURE, SAFETY, AND SECURITY,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:34 p.m. in room SR–253, Russell Senate Office Building, Hon. Frank R. Lautenberg, Chairman of the Subcommittee, presiding.

OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM NEW JERSEY

Senator LAUTENBERG. Good afternoon, the Committee is brought to order, and I want to welcome everybody to the Subcommittee's second hearing on railroad safety.

Now, frankly, the statistics are surprising. Although you hear about railroad accidents individually, it's hard to believe that 841 people died in railroad accidents last year, and thousands more were injured.

Some were employees, others were passengers. Some were residents who lived in, or trespassed near the railroad tracks, or the rail yard.

Last year two people in New Jersey were struck by trains in separate incidents in one day. The Federal Government is supposed to keep our railroads operating safely, and protect passengers, workers and people exposed to their operations. But Congress hasn't authorized America's rail safety program since 1994.

Now, it's time for us to provide direction to our Nation's rail safety policies. Based on this Subcommittee's first hearing on rail safety in May, Senator Smith—who is the Ranking Member of the Subcommittee, and I, drafted legislation to authorize and improve the U.S. Department of Transportation's railroad safety programs. The bill is called the *Railroad Safety Enhancement Act of 2007,* and we're introducing it today.

A draft copy has been shared with the witnesses and staff members of the Subcommittee, and we invite any Senators who want to be listed as original cosponsors of the bill to please join us. We know that there is substantial interest among our colleagues.

One part of our bill would require railroads to complete safety risk analyses of their operations. Using these, they would implement customized safety programs, targeting problem areas.

But there is no substitute for following current regulation. It's simply a common-sense way to ensure railroads address the most dangerous safety problems first.

Our bill would address three major areas of concern that affect the entire industry: employee fatigue, under the hours-of-service laws, new train controls, and railroad safety technology and grade-crossing safety. And, we will start with the employee fatigue and hours-of-service.

Under current law, train crews can work up to 400 hours in 30 days. One person can't work that much and stay awake, let alone be expected to keep anyone safe. Our bill would authorize the Department of Transportation to strengthen the antiquated laws on hours-of-service. It would also reduce limbo time, the time spent traveling back to an employee's duty station, after working or waiting for such transportation there.

Now, I'm pleased to welcome Senator Smith, and I know he has some concerns over this issue. And we'll continue to work together on this provision to perfect it.

Second, our bill requires railroads to embrace Positive Train Control, another railroad safety technology, which will reduce train crashes, and help save lives. For example, one system already in use will automatically brake a moving train, if the engineer doesn't start applying the brake in time to stop before a red stop signal. Putting Positive Train Control technology in place has been on the National Transportation Safety Board's most wanted list for the rail industry, since 1990. And I first proposed requiring this technology on the Northeast Corridor in 1987.

Our bill would create a reasonable deadline for railroads to implement this technology, in a way that's interoperable throughout the country, and provides grants to assist in the development of these tools.

Third, our bill improves pedestrian and grade crossing safety, to help prevent accidents and injuries, and worse, deaths. Ninety-four percent of all rail-related deaths involve highway grade-crossings, or trespassers. We need to pin down the problem locations in our towns and cities, which will require the cooperation of the states.

Our bill would require states to report the methods of protection at all highway grade-crossings to the Federal Government, so we can identify those problem areas.

States with historically high numbers of crossing accidents must also prepare comprehensive plans to increase safety, and to reduce accidents and deaths.

Our bill has many other important provisions, adding 200 more rail safety employees, increasing civil penalty amounts for failing to observe safety regulations, and requiring that the Federal Railroad Administration make public reports on its enforcement activities.

Now, I thank my colleague and Ranking Member, Senator Smith, for working on this bill with me, and I look forward to hearing from today's witnesses, after we've heard from Senator Smith.

STATEMENT OF HON. GORDON H. SMITH, U.S. SENATOR FROM OREGON

Senator SMITH. Thank you, Mr. Chairman. It's a pleasure to work with you on this bill as we develop it. I appreciate the courtesies you've extended to me and my staff.

Let me be clear—this legislation is, by no means, a perfect product yet. Rather, it's a work in progress, and I think it's important to work together to ultimately get a better handle on this issue. And so I'm confident that the final product will benefit from today's hearing.

Railroads are an integral component of the Nation's transportation system, and ensuring the safety of railroads is of critical importance. As domestic and global economies continue to grow, the demands on all modes of transportation, including rail, will undoubtedly continue to increase.

While traffic volume on railroads has increased in recent years, the actual rate of accidents has decreased. The low rate of rail-related accidents has made rail one of the safest ways to move goods throughout the country.

The legislation the Committee will take up aims to further improve upon the safety record of our railroads, through a number of key measures, including improving highway-rail grade-crossing safety, developing and implementing new rail technologies, and reforming hours-of-service laws to reduce fatigue and related accidents.

So I look forward to hearing from our witnesses on these, and other issues surrounding rail safety. And I also look forward to continuing to work with my colleagues to improve this legislation to get it to a place where it can pass the U.S. Senate.

I welcome our witnesses and thank you, Mr. Chairman.

Senator LAUTENBERG. Thank you, Senator Smith.

And I welcome the panel, already seated there, Joe Boardman, Administrator of the Federal Railroad Administration; John Tolman, President of the Brotherhood of Locomotive Engineers and Trainmen, Division of the Rail Conference of the International Brotherhood of Teamsters; Mr. Ed Hamberger, President and CEO of the Association of American Railroads; and Mr. David Solow, CEO of Southern California Regional Rail Authority.

I want to thank all of you for joining us, and I note the different interests represented, or let's say, the different activities. Interests are all the same, the interests are to improve safety.

And we invite you, and Mr. Boardman, you're first, and we'll allow 5 minutes, please. And try to give your summary, testimony in that time. But the record, of course, is open for your full written statement.

STATEMENT OF HON. JOSEPH H. BOARDMAN, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Mr. BOARDMAN. Thank you, Mr. Chairman, Ranking Member Smith. I appreciate the opportunity to be here, and I appreciate the hard work and thoughtfulness that went into the bill that you just introduced, I've looked it over.

I'd like to concentrate today, if I can, on the hours-of-service regulation issues. We believe that train crew member fatigue has played an increasing role in railroad accidents over the past decade, through poor judgment, miscommunication and inattentiveness, and failure to follow standard operating procedures. The challenge before us is to ensure that crew members consistently have an adequate opportunity to rest, do not suffer from medical disorders that can disrupt sleep, and are fully engaged in, and committed to, maintaining alertness.

However, the statutory provisions that govern the hours-of-service of railroad train crews, dispatchers, and signal maintainers are antiquated—essentially, a century old—and woefully inadequate to address present realities.

For example, under those laws, train crews may work on a schedule of eight hours on-duty, eight hours off-duty, perpetually. Engineers and conductors often work 60 to 70 hours a week—and may be called to work during the day or night, which may disrupt sleep patterns and reduce their ability to function.

Moreover, the hours-of-service laws contain no substantive rulemaking authority. The lack of regulatory authority over duty hours—has precluded FRA from making use of scientific learning on this issue of sleep-wake cycles—and fatigue-induced performance failures.

Behavioral science has progressed to the point, and computer models can accurately predict the likely effect of specific sleep-and-rest patterns on employee performance. Now, we recognize that specific amendments to the hours-of-service laws might mitigate some of the sources of fatigue, and yet we believe that sincere—and well-intentioned attempts at providing short-term relief will almost certainly result in unintended consequences that may limit FRA's—and the industry's—ability to consider or provide better solutions downstream.

Even if exceptions are provided for in statute, treating "limbo" time as on-duty time, for instance, may force carriers to reduce the length of many assignments to avoid the possibility of violations, under circumstances where safety could not be seriously compromised, and may significantly increase the cost of any further reforms.

Hours-of-service issues are inherently complex, and they need to be properly considered within the overall context of fatigue prevention and management. FRA is committed to achieving significant progress in this area, but we require the regulatory authority to do so.

We strongly recommend that existing hours-of-service laws be replaced with flexible regulations based on modern scientific understanding of fatigue. Today I'm again asking you for your support for legislation that will permit us to put into action what has been learned.

In order to apply this scientific knowledge to the problem of fatigue, we first propose to sunset the hours-of-service laws, but retain their protections as interim regulations embodying their provisions.

And next, we propose to make use of the extensive research findings, in reviewing the issue of fatigue, through the FRA's Railroad

Safety Advisory Committee, and to develop, as necessary, new, science-based requirements that can help us reduce the number and severity of human-factor-caused train accidents and casualties. We believe revised, benchmark limits are needed for work hours, and requirements for rest periods, to provide simple guidance for fixed schedules, where that will suffice.

We also propose to authorize FRA—under certain circumstances—to permit railroads to comply with an improved fatigue-management plan, as an alternative to complying with the benchmark limits set forth in any proposed regulations.

With the tools now available, we will be able to evaluate proposed fatigue-management approaches, to ensure that they include an objective evaluation of a wide variety of more flexible work schedules by validated techniques. In fact, under such conditions, we believe that the most safety-critical railroad employees would be protected by performance-based fatigue-management programs that will enhance safety, while holding down costs.

For the sake of the public and employee safety, it's time to make a long-overdue change, by granting the Secretary rulemaking authority over hours-of-service, so that FRA—as the Secretary's delegate—is authorized to directly address the major cause of far too many train accidents.

Thank you.

[The prepared statement of Mr. Boardman follows:]

PREPARED STATEMENT OF HON. JOSEPH H. BOARDMAN, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Chairman Lautenberg, Ranking Member Smith, and other Members of the Subcommittee, I am very pleased to be here today, on behalf of Secretary of Transportation Peters, to discuss the reauthorization of the Federal Railroad Administration's (FRA) rail safety program. At your May 22 hearing, also on this subject, FRA's witness Associate Administrator for Safety Jo Strang included in her testimony an overview of FRA's day-to-day work to reduce the number and the severity of railroad accidents, a status report on the agency's implementation of our National Rail Safety Action Plan, a summary of our passenger safety rulemakings and other key safety initiatives, and an analysis of rail safety statistics. Today, for the sake of brevity, I will provide an update of these safety statistics (at Appendix A) and, otherwise, focus on rail safety legislation alone.

In February of this year, the Administration submitted its rail safety reauthorization bill, the Federal Railroad Safety Accountability and Improvement Act, to the Congress. The bill has been introduced, by request, in both the House and the Senate. I want to thank you again, Chairman Lautenberg, for introducing the Administration bill, by request, for yourself and Senator Smith. The Administration bill has been designated as H.R. 1516 and S. 918, respectively. In addition to proposing to reauthorize FRA's vital safety mission, this bill calls for important—and in some cases historic—substantive changes in the rail safety laws that we expect will materially improve safety. I look forward to working with you to help secure their enactment.

The U.S. Department of Transportation (DOT) has also provided a views letter on H.R. 2095 as introduced by Chairman Oberstar and Chairwoman Brown. DOT also plans to provide its comments on major rail safety reauthorization legislation introduced in the Senate.

The Administration's Rail Safety Bill (H.R. 1516, S. 918)

The Administration's rail safety reauthorization bill would reauthorize appropriations for FRA to carry out its rail safety mission for 4 years. FRA has made a full copy of the proposal available on our website at *http://www.fra.dot.gov/us/content/48,* including the supporting analysis for each section. Let me take this opportunity to discuss the major provisions of the Administration bill and how we believe they will further FRA's safety efforts.

A. Authorizes Safety Risk Reduction Program and Protects Confidentiality of Risk Analyses Produced

In order to enhance the accountability of railroads in assuming full responsibility for the safety of their employees and operations, the bill would authorize appropriations for the addition of a safety risk reduction program to supplement FRA's current safety activities. The bill requests Congressional endorsement of this pilot program, which FRA has already begun on a voluntary basis. Since rail-related accidents, injuries, and deaths are already at historically low levels, FRA seeks to augment the agency's traditional behavior-based and design-specification-based regulations with a robust risk reduction program to further drive down those key indicators and measures of risk at a reasonable cost and in a practical manner before accidents and injuries occur.

In the rail safety context, such a risk reduction program is intended to ensure that the systems by which railroads operate and maintain their properties are adequate to meet or exceed safety objectives. Our current risk reduction program is intended to encourage an open collaboration with industry's labor and management so that they will try, and eventually adopt, voluntary risk reduction approaches. FRA is placing much greater emphasis on developing models of how railroads can systematically evaluate safety risks and implement plans to eliminate or reduce the chance for workers to make mistakes that can lead to accidents or close calls. A safety risk reduction program could integrate previous voluntary efforts in the human factors area (such as behavior-based safety methods and close call reporting), while extending similar risk management techniques to track safety and other areas.

To encourage railroads to produce thorough, as opposed to superficial, risk assessments, a companion provision in the bill would bar public disclosure by DOT of records required under the safety risk reduction program, except for Federal law enforcement purposes. Also in order to promote the preparation of substantive risk analyses by railroads, the provision would forbid discovery by private litigants in civil litigation for damages of any information compiled or collected under the program, and would forbid admission into evidence of the same information in civil litigation by private parties for damages. Here is an example of how this provision would work if enacted. A commuter railroad undertakes, develops, and writes a collision hazard analysis required by an FRA order issued under the risk reduction program and implements the results of the analysis. In this process, the railroad identifies a bridge abutment near a crossover as a collision hazard. It is unlikely that the railroad would be able to remove this collision hazard (a derailment could send the cars into the fixed structure), but the railroad could mitigate the risk by reducing operating speeds and by further training its employees on safely transiting the location. DOT would not be allowed to release the railroad's written hazard analysis except to enforce Federal law, and the hazard analysis (as well as information compiled or collected under the program) would also be protected from discovery in a civil action by private parties for damages.

FRA is mindful that any restriction of public access to information may be controversial and requires careful scrutiny. However, to prevent misuse of the data developed under the risk reduction program, we are convinced that assuring confidentiality is essential to promote full, accurate, and timely disclosure by both the railroads and their employees, making certain that such programs are meaningful and more likely to bring about tangible improvements in safety.

B. Grants Rulemaking Authority over Hours-of-Service to the Secretary of Transportation

Human factors are a primary or contributing factor in more than a third of all train accidents, constituting the leading cause of train accidents. Fatigue is at least a contributing factor in one of every four serious human factor train accidents. We believe that crewmember fatigue has played an increasing role in railroad accidents over the past decade through poor judgment, miscommunication, inattentiveness, and failure to follow standard operating procedures. The challenge before us is to ensure that crewmembers consistently have adequate opportunity to rest, do not suffer from medical disorders that can disrupt sleep, and are fully engaged in, and committed to, maintaining alertness.

However, the statutory provisions that govern the hours-of-service of railroad train crews, dispatchers, and signal maintainers are antiquated—essentially a century old—and woefully inadequate to address present realities. For example, under those laws, train crews may work on a schedule of 8 hours on-duty, 8 hours off-duty, perpetually. Engineers and conductors often work 60 to 70 hours a week, and may be called to work during the day or night, which may disrupt sleep patterns and

reduce their ability to function. Please see Appendix B, "Scientific Learning Demonstrating the Inadequacy of the Hours-of-Service Laws."

Moreover, the hours-of-service laws contain no substantive rulemaking authority. The lack of regulatory authority over duty hours—authority that other DOT agencies have with respect to their modes of transportation—has precluded FRA from making use of scientific learning on this issue of sleep-wake cycles and fatigue-induced performance failures. Behavioral science has progressed to the point that computer models can accurately predict the likely effect of specific sleep and rest patterns on employee performance. The models provide useful guidance to aid employee scheduling practices, and as discussed in FRA's May testimony, the agency published a validation report of one such model in 2006. Yet, only the Union Pacific Railroad Company and the Canadian Pacific Railway are making use of a sleep model to evaluate their own crew scheduling practices. Most railroads have yet to integrate use of such models into their operations and have refrained from making public commitments to use this capability in the future. Further, over the past 15 years, the history of attempts by rail labor and management to cooperatively improve fatigue management has not experienced steady progress.

We recognize that specific amendments to the hours-of-service laws might mitigate some sources of fatigue. Yet, we believe that sincere and well-intentioned attempts at providing short-term relief will almost certainly result in unintended consequences that may limit FRA's and the industry's ability to consider or provide better solutions downstream. Even if exceptions are provided for in statute, treating limbo time as on-duty time, for instance, may force carriers to reduce the length of many assignments to avoid the possibility of "violations" under circumstances where safety could not be seriously compromised, and may significantly increase the cost of any further reforms. Hours-of-service issues are inherently complex, and they need to be properly considered within the overall context of fatigue prevention and management. FRA is committed to achieving significant progress in this area, but we require the regulatory authority to do so.

We strongly recommend that the existing hours-of-service laws be replaced with flexible regulations based on a modern, scientific understanding of fatigue. Today, I am again asking for your support for legislation that will permit us to put into action what has been learned. In order to apply this scientific knowledge to the problem of fatigue, the Administration bill first proposes to sunset the hours-of-service laws, but retain their protections as interim regulations embodying their substantive provisions. Next, the proposal calls for FRA, as the Secretary's delegate, to make use of the extensive research findings in reviewing the issue of fatigue through FRA's Railroad Safety Advisory Committee, and to develop as necessary new, science-based requirements that can help us reduce the number and severity of human factor-caused train accidents and casualties. We believe revised "benchmark" limits are needed on work hours, and requirements for rest periods, to provide simple guidance for fixed schedules, where that will suffice.

The bill would also authorize FRA under certain circumstances to permit railroads to comply with an approved fatigue management plan as an alternative to complying with the "benchmark" limits set forth in any prospective regulations. With the tools now available, we will be able to evaluate proposed fatigue management approaches to ensure that they include an objective evaluation of a wide variety of more flexible work schedules by validated techniques. In fact, under such conditions, we believe that most safety-critical railroad employees would be protected by performance-based fatigue management programs that will enhance safety while holding down costs.

For the sake of public and employee safety, it is time to make a long-overdue change by granting the Secretary rulemaking authority over hours-of-service so that FRA as the Secretary's delegate is authorized to directly address the major cause of far too many train accidents.

C. Promotes Crossing Safety

Accidents at highway-rail crossings and dedicated pedestrian crossings over railroad tracks account for more than a third of all fatalities arising from railroad operations. In 2006 alone, according to FRA's preliminary figures, 368 people were killed at crossings. The bill seeks to prevent accidents, injuries, and deaths at crossings and to make crossings safer through two main provisions.

1. Requires Reports by Railroads and States to DOT on the Characteristics of Crossings

Currently, reporting to the DOT National Crossing Inventory is strictly voluntary. FRA is the custodian of the inventory, and the quality of the data is only as good as what states and railroads have historically reported. Some information is missing

from the Inventory altogether. Too much information that is in the Inventory has become outdated, rendering its use at least problematic. The bill would remedy these information deficits by requiring that railroads and states provide the Secretary with current information regarding the country's approximately 277,000 at-grade and grade-separated highway-rail crossings and dedicated pedestrian crossings over railroad tracks. Mandatory reporting would make this unique national database more current and complete, which would help (i) States better rank their crossings by risk and channel resources to the most dangerous crossings first, and (ii) DOT and transportation researchers identify the most promising ways to reduce crossing casualties. The bill would, therefore, require initial reports on all previously unreported crossings and then periodic updates on all crossings.

2. Fosters Introduction of New Technology to Improve Safety at Public Highway-Rail Grade-Crossings

Only about 40 percent of the Nation's 144,000 public highway-rail grade-crossings are equipped with an active device to give warning to motorists and pedestrians at the crossing. Many crossings have only crossbucks. Active warning devices are expensive to install and maintain, and, perversely, safety engineering improvements at one crossing are often cited in tort actions to prove or insinuate the relative inadequacy of warning signs or devices at another crossing. Under the Administration bill, if the Secretary has approved a new technology to provide advance warning to highway users at a grade crossing, the Secretary's determination preempts any State law concerning the adequacy of the technology in providing the warning. FRA believes that this proposal would help encourage the creation and deployment of new, cost-effective technology at the Nation's approximately 80,000 public grade crossings that still lack active warning devices. Let me provide an example of innovative crossing safety technology. Under an FRA waiver the Twin Cities and Western Railroad Company and a supplier successfully demonstrated a warning system designed for lower-volume roadways and rail lines using dedicated locomotives. The system uses the Global Positioning System and a data radio link between the locomotive and each crossing. This product is now being commercialized by a major signal supplier.

D. Expands the Secretary's Authority to Disqualify Individuals Unfit for Safety-Sensitive Service

Another provision of the bill would expand the Secretary's existing disqualification authority to cover individuals who, after opportunity for a hearing, are deemed to be unfit for safety-sensitive service in the railroad industry because of a violation of the Hazardous Materials Regulations related to transporting hazardous material by rail. Currently, FRA, as the Secretary's delegate, may disqualify an individual only for a violation of the rail safety laws or regulations, not the Hazardous Materials Regulations, even though violation of the Hazardous Materials Regulations may involve a greater potential accident risk or consequence (in the event of an accident). This proposal would logically extend our disqualification authority over railroad employees and complement current initiatives to strengthen FRA's safety compliance program.

E. Protects Rail Safety Regulations from Legal Attack on the Ground that They Affect Security and Repeals the Statutory Requirement for the Secretary of Homeland Security to Consult with the Secretary of Transportation when Issuing Security Rules that Affect Rail Safety

The bill would also bar legal challenges to DOT safety regulations on the basis that they affect rail security. In many cases, rail safety and security are intertwined, if not linked inextricably, and part of the justification for certain DOT regulations is that they enhance rail security. The bill would clarify the scope of the Secretary's safety jurisdiction and help deter or quickly rebuff any legal challenge that asserts that DOT has exceeded its statutory authority in issuing such regulations.

Of course, the U.S. Department of Homeland Security (DHS) would continue to exercise primary responsibility for the promulgation of rail security regulations. In this regard, the bill would repeal the statutory provision that, when issuing security rules that affect rail safety, DHS must consult with DOT. We believe the provision is unnecessary and confusing in light of other statutes, Executive Orders, and existing inter-Departmental cooperation formalized under the DOT–DHS Memorandum of Understanding and its related annexes on rail security.

F. Clarifies the Secretary's Authority to Issue Temporary Waivers of Rail Safety Regulations Related to Emergencies

The bill would clarify that FRA, as the Secretary's delegate, may grant a temporary waiver without prior notice and an opportunity for public comment and hear-

ing, if the waiver is directly related to an emergency event or needed to aid in recovery efforts and the waiver is also in the public interest and consistent with railroad safety. Although FRA's normal practice is to set aside time for public comment and hearing on waiver petitions, this process appreciably slows down issuance of waivers necessary for emergency response and recovery efforts. Yet granting a waiver without such procedures risks legal challenge. The provision would free FRA from this dilemma and allow the agency to support emergency response and recovery efforts by dispensing with prior notice and an opportunity for comment and hearing, and by otherwise expediting the process for granting waivers. Further, the relief granted would be temporary (a maximum of 9 months), and the normal waiver procedures would have to be followed to extend the temporary relief granted should doing so be necessary.

G. Authorizes the Monitoring of Railroad Radio Communications

Currently, FRA is permitted to monitor railroad radio communications only in the presence of an authorized sender or receiver, such as a railroad employee. Yet, when railroad employees know that FRA is present, they tend to be on their best safety behavior. Therefore, FRA cannot be sure whether the level of compliance observed is normal, and we are less able to identify what are, under ordinary circumstances, the most frequent and serious instances of noncompliance. Access to candid communications offsite would yield a truer picture of compliance levels.

The bill would address this concern by letting FRA safety inspectors monitor and record railroads' radio communications over their dedicated frequencies outside of the presence of railroad personnel for the purpose of accident prevention (including accident investigation) and, with certain exceptions, to use the information received.

As FRA's objective of accident prevention is ordinarily fulfilled daily by conducting safety inspections of railroad operations and enforcing the rail safety laws, monitoring of radio communications would not only help achieve that objective, but would greatly improve the efficiency of those inspections, the accuracy of the results, and the effective deployment of FRA's limited inspection resources based on those more accurate results.

H. Clarifies and Relaxes the Existing Statutory Provision on Moving Certain Defective Equipment for Repair

Finally, I would like to mention that the bill would amend a complicated statutory provision that states the conditions for hauling a railroad car or locomotive with a safety appliance or power brake defect for repair without civil penalty liability, including the requirement that equipment be back-hauled to the nearest available repair point. Back hauls required by statute can be both unsafe (because of the hazards related to switching a car out of one train and into another train), and inefficient (because the car is stopped from moving toward its destination and forced to go to a different place that is physically closer than the next forward point for repair). The proposal would allow the equipment to be moved to the next forward point of repair under clear regulatory safeguards for moving defective equipment that are more consistent with the movement-for-repair provisions applicable to vehicles with other types of defects, such as Freight Car Safety Standards defects.

Further, the bill would also define some key statutory terms and then provide FRA, as the Secretary's delegate, with rulemaking authority to define others. Currently, FRA may provide only guidance on the meaning of these terms, and this has contributed to an atmosphere of uncertainty about the requirements of the statute in day-to-day application. For example, FRA has received many complaints over the years that cars have been hauled past a repair point that FRA does not consider to be a repair point. This proposal would, therefore, help dispel such uncertainty and promote understanding and compliance with the provisions governing the safe movement of equipment with a safety appliance or power brake defect.

I would like to emphasize that, while all of the provisions I have discussed are among the major provisions of the bill, there are other significant provisions I have not mentioned today that will also enhance rail safety. These include providing FRA rail security officers with greater access to Federal, State, and local law enforcement databases, officer-protection warning systems, and communications for the purpose of performing the Administrator's civil and administrative duties to promote safety, including security, and for other purposes authorized by law. All of these provisions are set forth in the bill the Secretary presented in February, and I would be glad to discuss each of them in detail with you.

Legislation Proposing Amendments to the Rail Safety and Security Preemption Provision at 49 U.S.C. 20106

The Administration's bill does not include a provision that would revise the preemption provision at 49 U.S.C. § 20106 (Section 20106). Section 3 of H.R. 1401, as

passed by the House provides that causes of action for damages under State law are not preempted under Section 20106 unless compliance with the State standard makes compliance with the Federal standard impossible. It further provides that the Secretaries of Transportation and Homeland Security may preempt positive State law and regulations only by covering the subject matter. Common law tort claims related to the same subject matter would not be preempted. The effect of this proposal would be that an ever-changing myriad of State and local standards would be established through tort litigation, based on the findings of individual judges and juries, who will undoubtedly have limited exposure to and understanding of the Federal standards at issue, and even less understanding of the consequences of their decisions beyond the implications for the immediate plaintiffs. The result of this amendment would be to eviscerate national uniformity, as the existence of Federal requirements and the railroad's compliance with them would have no bearing on the potential for liability in the event of an accident or terrorist incident. The effective standard would be the latest tort judgment in each State, without any assurance whatsoever that compliance with that standard would save a railroad from future liability. Faced with limitless tort liability and the need to meet these changing standards all around the country, nationally uniform standards would lose their meaning and effectiveness, and safety and security would be compromised. For this reason, the Administration's views letter on H.R. 1401 threatens a Presidential veto if section 3 remains in the bill.

Another proposed amendment to Section 20106, the provision at Section 616 of H.R. 2095 as passed by the House Transportation and Infrastructure Committee, provides a State cause of action for damages for personal injury, death, or property damage resulting from a violation of Federal railroad safety and security standards. However, the amendment goes too far by providing that a State cause of action is also created for a railroad's failure to "adequately comply" with any Federal regulation or order and "adequately comply" with its plan or standard created pursuant to a Federal regulation or order; this provision will generate needless litigation and undercut the national uniformity that section 20106 aims to achieve. If the Committee needs further information to address this important issue, FRA staff would be glad to provide assistance.

Conclusion

The Administration's rail safety reauthorization bill would enable FRA to continue its existing rail safety initiatives and to enhance rail safety systematically in many ways. I look forward to working with the Subcommittee to bring about the enactment of the Administration's bill, and to help make our Nation's railroad system even safer. Thank you.

APPENDIX A

The Railroad Industry's Safety Record

The railroad industry's overall safety record is very positive, and most safety trends are moving in the right direction. While not even a single death or injury is acceptable, progress is continually being made in the effort to improve railroad safety. This improvement is demonstrated by an analysis of FRA's database of railroad reports of accidents and incidents that have occurred over the nearly three decades from 1978 through 2006. See 49 CFR Part 225. (The period 1978 through 2006 is chosen for analysis because the worst year for rail safety in recent decades was 1978, and 2006 is the last complete year for which preliminary data are available.) Between 1978 and 2006, the total number of rail-related accidents and incidents has fallen from 90,653 to 13,139, an all-time low since FRA's existing database was first established in 1975, representing a decline of 86 percent. Between 1978 and 2006, total rail-related fatalities have declined from 1,646 to 912, a reduction of 45 percent. From 1978 to 2006, total employee cases (fatal and nonfatal) have dropped from 65,193 to 5,165, the record low; this represents a decline of 92 percent. In the same period, total employee deaths have fallen from 122 in 1978 to 16 in 2006, a decrease of 87 percent.

Contributing to this generally improving safety record has been a 74-percent decline in train accidents since 1978 (a total of 2,891 train accidents in 2006, compared to 10,991 in 1978), even though rail traffic has increased. (Total train-miles were up by 7.8 percent from 1978 to 2006.) In addition, the year 2006 saw only 28 train accidents, out of the 2,891 reported, in which a hazardous material was released, with a total of only 69 hazardous material cars releasing some amount of product, despite about 1.7 million movements of hazardous materials by rail.

In other words, over the last almost three decades, the number and rate of train accidents, total deaths arising from rail operations, employee fatalities and injuries,

and hazardous materials releases all have fallen dramatically. In most categories, these improvements have been most rapid in the 1980s, and tapered off in the late 1990s. Causes of the improvements have included a much more profitable economic climate for freight railroads following deregulation in 1980 under the Staggers Act (which led to substantially greater investment in plant and equipment), enhanced safety awareness and safety program implementation on the part of railroads and their employees, and FRA's safety monitoring and standard setting. (Most of FRA's safety rules were issued during this period.) In addition, rail remains an extremely safe mode of transportation for passengers. Since 1978, more than 11.2 billion passengers have traveled by rail, based on reports filed with FRA each month. The number of rail passengers has steadily increased over the years, and since 2000 has averaged more than 500 million per year. Although 12 rail passengers died in train collisions and derailments in 2005, none did in 2006. On a passenger-mile basis, with an average about 15.5 billion passenger-miles per year since the year 2000, rail travel is about as safe as scheduled airlines and intercity bus transportation and is far safer than private motor vehicle travel. Rail passenger accidents—while always to be avoided—have a very high passenger survival rate.

As indicated previously, not all of the major safety indicators are positive. Grade-crossing and rail trespasser incidents continue to cause a large proportion of the deaths associated with railroading. Grade-crossing and rail trespassing deaths accounted for 97 percent of the 912 total rail-related deaths in 2006. In recent years, rail trespasser deaths have replaced grade crossing fatalities as the largest category of rail-related deaths. In 2006, 521 persons died while on railroad property without authorization, and 368 persons lost their lives in grade crossing accidents. Further, significant train accidents continue to occur, and the train accident rate per million train-miles has not declined at an acceptable pace in recent years. It actually rose slightly in 2003 and 2004 (to 4.05 and 4.39, respectively) compared to that in 2002 (3.76), although it dropped in 2005 (to 4.11) and in 2006 (to 3.57), close to the all-time low of 3.54 achieved in 1997.

The causes of train accidents are generally grouped into five categories: human factors; track and structures; equipment; signal and train control; and miscellaneous. The great majority of train accidents are caused by human factors and track. In recent years, most of the serious events involving train collisions or derailments resulting in release of hazardous material, or harm to rail passengers, have resulted from human factor or track causes. Accordingly, the National Rail Safety Action Plan makes human factors and track the major target areas for improving the train accident rate.

APPENDIX B

Scientific Learning Demonstrating the Inadequacy of the Hours-of-Service Laws

The following four examples illustrate some of the ways in which the existing hours-of-service statutory regime fails to reflect the latest scholarship on the subject of fatigue.

First, current scientific information indicates that to feel well rested most people need approximately 8 hours of sleep per night. The current hours-of-service laws require a minimum off-duty period of only 10 hours if an employee in train and engine service has worked 12 consecutive hours in the previous 24-hour period. If an employee works 11 hours and 59 minutes or less, the laws require a minimum rest period of only 8 hours. Very few employees work 12 consecutive hours; therefore, most may legally be called back to duty with only 8 hours off-duty. During that off-duty time, the employee must travel to and from work and attend to personal needs such as bathing and eating. Crew-calling practices allow the employee to be called as little as 2 hours prior to the beginning of the next duty period. Given these circumstances, it is certain that the current law permits employees to work with less than 8 hours of sleep per night.

An FRA study of locomotive engineers' sleep and work patterns found that the average locomotive engineer obtained *7.13 hours* of sleep per night.[1] Another FRA study of train handling performance conducted on a highly realistic locomotive simulator by locomotive engineers working under schedules that conformed with the

[1] Pollard, J.K. 1996. Locomotive engineer's activity diary. Report Number DOT/FRA/RRP–96/02.

hours-of-service laws[2] found that engineers who worked 10 hours and had 12 hours off-duty, slept an average of only *6.1 hours.* A similar group of engineers who also worked 10 hours, but had only 9.3 hours off-duty, slept an average of only *4.6 hours.* Again, most people need about 8 hours of sleep per night; therefore, for most people, the amount of sleep these engineers received was insufficient even though their schedules fully conformed with the hours-of-service laws.

Second, scientific information also shows that the quantity and quality of sleep vary with the time of day. Most people sleep best at night; however, the current hours-of-service laws do not take the time of day when sleep can occur into account. Under those laws, engineers who quit work at dawn and have to sleep during the daytime, when it is harder to sleep, get the same minimum eight or 10 hours off as engineers who quit work in the evening and have the relative luxury of sleeping at night. The study by Pollard referenced earlier found that engineers, in fact, obtain the least sleep if their on-duty period ends between 5 a.m. and noon.

Third, most mammals, including human beings, have an approximately 24-hour sleep-wake cycle known as a "circadian rhythm." Rapid changes in the circadian pattern of sleep and wakefulness disrupt many physiological functions such as hormone releases, digestion, and temperature regulation. Human function can be affected, performance may be impaired, and a general feeling of debility may occur until realignment is achieved. The maximum work periods and minimum off-duty periods specified in the current hours-of-service laws force sleep-wake cycles into a less-than-24-hour pattern that is highly unnatural and very difficult to adapt to. Jet lag when flying east is the most commonly experienced syndrome similar to the experience of consistently working on a less-than-24-hour cycle.

Fourth, recent studies "suggest that sleep loss (less than 7 hours per night) may have wide-ranging effects on the cardiovascular, endocrine, immune, and nervous systems, including the following:

- Obesity in adults . . .
- Diabetes and impaired glucose tolerance
- Cardiovascular disease and hypertension
- Anxiety symptoms
- Depressed mood
- Alcohol use[.]"[3]

In other words, sleep loss, which the current hours-of-service regime permits railroad operating employees to suffer, contributes not only to the safety risk of fatigue, but also to a gamut of health risks, including the risk of serious health problems such as diabetes, cardiovascular disease, and hypertension.

Senator LAUTENBERG. Mr. Hamberger?

STATEMENT OF EDWARD R. HAMBERGER, PRESIDENT AND CEO, ASSOCIATION OF AMERICAN RAILROADS

Mr. HAMBERGER. Thank you, Mr. Chairman, Senator Smith. On behalf of the members of the AAR, thank you for the opportunity to address rail safety. I'd like to associate myself with the remarks of Administrator Boardman in thanking both of you, and your staffs, for the open-door policy you've had, and the thoughtful way in which you've addressed this very complex subject matter.

You astutely observed, Mr. Chairman, that 94 percent of the fatalities are as a result of grade-crossing accidents, or trespassing accidents. And I want to thank you for the effort in this bill, but also in your capacity as a member of Environment and Public Works Committee, in fully funding the Section 130 Grade-Crossing Safety Program. Over the years, this program has saved thousands

[2] Thomas, G.R., Raslear, T.G., and Kuehn, G.I. 1997. The effects of work schedule on train handling performance and sleep of locomotive engineers: A simulator study. Report Number DOT/FRA/ORD–97–09.

[3] Institute of Medicine of the National Academies. *Sleep Disorders and Sleep Deprivation: an Unmet Public Health Problem* (2006), p. 59.

of lives, and, in fact, last year was the safest in history, in terms of grade-crossing collision rates.

And, that's really just one of the safety milestones established in the industry in 2006. Our employee injury rate was also the lowest in history last year, and the train accident rate was just fractionally higher than the record low set a few years ago.

Progress is continuing this year, with preliminary FRA data for the first 4 months of 2007 showing a 14 percent improvement in the train accident rate, as well as further reductions in both the employee injury, and grade-crossing accident rates.

Turning to the draft legislation, I particularly want to thank the Chairman and the Committee for their support of funding for design and construction of a tunnel at the Transportation Technology Center, in Pueblo, Colorado. This facility will be used to improve safety and security in tunnels, and to provide training for emergency responders.

There are a few other provisions I'd also like to address, one of these concerns limbo time. As I testified on May 22nd, our preferred option would be to make three changes to the current hours-of-service regulations that we believe would address the fatigue issues surrounding limbo time.

First, any employee who works 12 consecutive hours on-duty, and then 1 hour or more of limbo time, should receive 14 consecutive hours of off-duty time, to make sure that there is no rest deficit.

Second, train and engine service employees should be subject to a new monthly maximum on-duty time of 276 hours.

And third, even though limbo time is not on-duty time, it should be included in that new monthly maximum of 276 hours.

We believe these measure strike a balance between fatigue concerns, and the 24/7 reality of railroad operations.

Although that is our preferred approach, I notice it's not in your bill.

[Laughter.]

Mr. HAMBERGER. So, let me comment on the draft bill's approach.

We appreciate your recognition that limbo time cannot be banned altogether, and that you provide for certain exceptions. We would like to work with you and your staff to clarify and refine that list.

For example, we believe seasonal congestion—as opposed to systemic congestion—should be considered as an exception. Another provision mandates that train and engine employees cannot work unless they have had at least 24 consecutive hours off-duty during the previous 7 days. This limit is particularly difficult for our 24/7 operating environment, and could make weekend staffing particularly difficult. We would like to change that to either 7 on and 1 off, or perhaps even 7 on and 2 off, as a way to resolve that problem.

The legislation prescribes advanced train control systems that can help prevent accidents by automatically stopping or slowing trains, before they encounter a dangerous situation. Those systems are very complex, and must include reliable technology to inform dispatchers of a train's precise location, a means to warn operators of actual—or potential—problems, and, independent of the train operator, take action to prevent an accident from occurring.

They must also be interoperable across the entire 120,000-mile network, and over the 600 railroads that operate in the country.

We are committed to implementing train control systems, but because of the complexities I've just referenced, we're uncomfortable with establishing a rigid deadline for deployment at this time. As an alternative to a specific date, we would ask you to consider having each railroad present to the FRA—12 months after enactment of this bill—their plan to implement train control technology. The FRA would then report to you and the Transportation Committee on the House side on those plans, and perhaps at that time, a more firm implementation timetable could be established.

Finally, the legislation proposes significant increases in maximum fines for safety violations. I would suggest that the maximum penalty of $25,000 is disproportionate, especially given the fact that the railroad industry's safety record is dramatically better than that of the motor carrier industry, where the maximum fine is $5,000, and of course they are our primary competitor in fighting to move freight around the country.

Let me just reiterate, safety is our top priority, and we believe that shows through our ever-improving safety record. We're committed to working with you, others in Congress, our employees and our customers, to ensure that rail safety continues to improve.

Thank you.

[The prepared statement of Mr. Hamberger follows:]

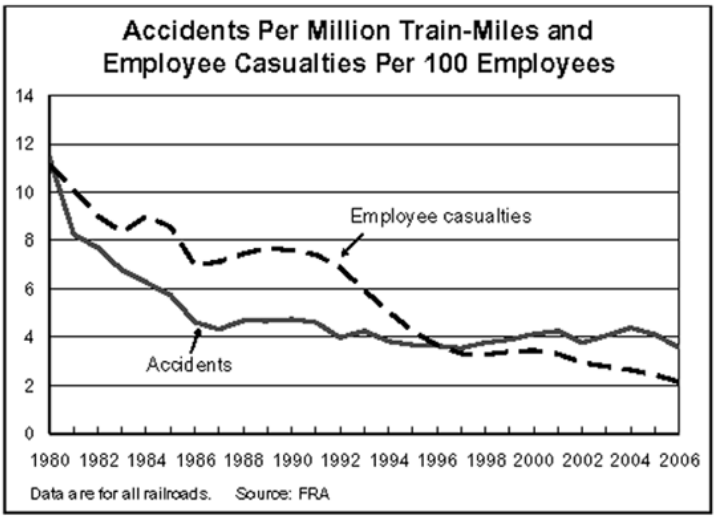
PREPARED STATEMENT OF EDWARD R. HAMBERGER, PRESIDENT AND CEO, ASSOCIATION OF AMERICAN RAILROADS

On behalf of the members of the Association of American Railroads (AAR), thank you for the opportunity to address rail safety in general and the Railroad Safety Enhancement Act of 2007 in particular. AAR members account for the vast majority of freight railroad mileage, employees, and traffic in Canada, Mexico, and the United States.

Overview of Rail Safety

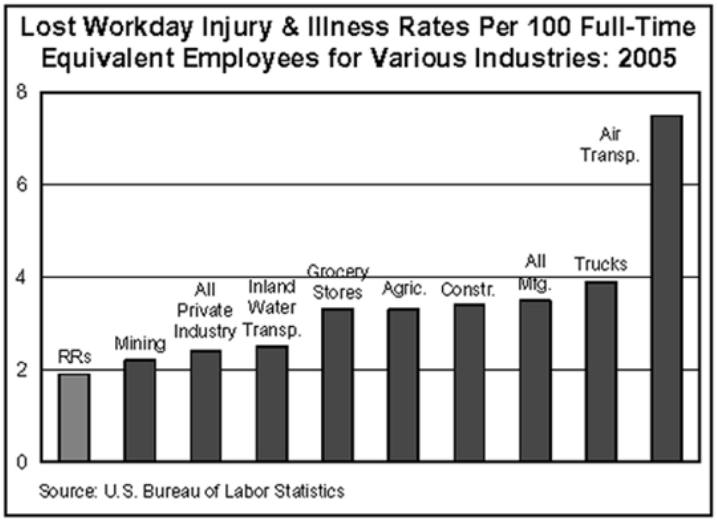
For railroads, pursuing safe operations is not an option, it is an imperative. It makes business sense and it's the right thing to do. Through massive investments in safety-enhancing infrastructure, equipment, and technology; extensive employee training; cooperation with rail labor, suppliers, customers, communities, and the Federal Railroad Administration (FRA); cutting-edge research and development; and steadfast commitment to applicable laws and regulations, railroads are at the forefront of advancing safety.

The overall U.S. rail industry safety record is excellent. As an FRA official noted in February 2007 testimony to Congress, "The railroads have an outstanding record in moving all goods safely." Rail safety continues to improve. In fact, in aggregate 2006 was the safest year for railroads ever. According to FRA data, the rail employee casualty rate in 2006 was the lowest in history, having fallen 81 percent since 1980. Likewise, the grade crossing collision rate in 2006 was the lowest ever, having fallen 76 percent since 1980. And from 1980 to 2006, railroads reduced their overall train accident rate by 69 percent. The train accident rate in 2006 was just fractionally higher than the record low.



Preliminary FRA data for the first 4 months of 2007 show a 14 percent improvement in the train accident rate compared with the same period in 2006, as well as improvements in the employee injury rate and the grade crossing collision rate.

Moreover, according to U.S. Department of Labor data, railroads today have lower employee injury rates than other modes of transportation and most other major industry groups, including agriculture, construction, manufacturing, and private industry as a whole. Available data also indicate that U.S. railroads have employee injury rates well below those of most major foreign railroads.



Railroads are proud of their safety record, which results from railroads' recognition of their responsibilities regarding safety and the enormous resources they devote to its advancement. At the same time, railroads want rail safety to continue to improve, and they agree that safety should be the FRA's highest priority. Railroads are always willing to work cooperatively with you, other policymakers, the FRA, rail employees, and others to find practical, effective ways to make this happen.

A commitment to safety that permeates the workplace is critical to promoting safety. Railroads have that commitment. But a healthy balance sheet is important

to safety as well. A financially-viable railroad will be in a much better position to invest in safety enhancements than a financially-weak carrier.

The record investments that railroads have made in their infrastructure, equipment, and technology in recent years have made railroads much safer. These investments were made possible by the moderate improvements in profitability that railroads have enjoyed since passage of the Staggers Rail Act of 1980. Consequently, legislative or regulatory actions that created significant new spending requirements, and/or unduly restricted rail earnings, could have unintended negative safety consequences in addition to negative capacity, efficiency, and service reliability consequences.

Of course, no budget is unlimited, even for something as important as safety and even for railroads that have experienced financial improvement in recent years. Safety will not be advanced if resources are spent on programs or requirements that do little to improve safety, or if unfunded mandates lock up resources that would have a more pronounced impact on safety if spent elsewhere. Unnecessary and unfunded mandates would increase the cost of rail service and drive more traffic to the highways, where the safety record is far less favorable than it is on the rails.

Below I will discuss several important topics associated with rail safety, discuss ways that railroads are working to advance safety in those areas, and discuss steps that we believe policymakers should take (or not take) to promote rail safety, especially as they relate to the Railroad Safety Enhancement Act of 2007. For the sake of brevity, at times I refer back to my testimony on rail safety to this committee on May 22 of this year.

Role of Technology

Technology plays a crucial role in rail safety. Much of this technology has been, and is being, developed and/or refined at the Transportation Technology Center, Inc. (TTCI) in Pueblo, Colorado, a wholly-owned subsidiary of the AAR and the world's finest rail research facility. Its 48 miles of test tracks, highly-sophisticated testing equipment, metallurgy labs, simulators, and other diagnostic tools are used to test track structure, evaluate freight car and locomotive performance, assess component reliability, and much more. The facility is owned by the FRA but has been operated (under a competitively-bid contract with the FRA) by TTCI since 1984. TTCI is responsible for all the facility's operating costs and some capital costs.

The rail industry is pleased that some members of this committee have had the opportunity to see TTCI in person, and I extend an open invitation to others in Congress, including members of this committee, to visit the facility when they can.

In my testimony to this committee on May 22, I listed many of the technological advances that are contributing to improved rail safety, including advanced wayside detectors that identify defects on passing rail cars; ground-penetrating radar that helps identify problems below the ground (such as excessive water penetration and deteriorated ballast) that hinder track stability; advanced track geometry cars that use sophisticated electronic and optical instruments to inspect track conditions; and much more.

Train Control Technology

Among the most important new railroad technologies under development are train control systems that, in certain circumstances, can help prevent accidents by automatically stopping or slowing trains before they encounter a dangerous situation. Through predictive enforcement, train control technologies could significantly reduce the incidence of train accidents caused by human error, especially train collisions, derailments due to excessive speed, and incursions onto unauthorized trackage.

Train control systems are extremely complex. At a minimum, they must include reliable technology to inform dispatchers and operators of a train's precise location; a means to warn operators of actual or potential problems (*e.g.,* excessive speed); and a means to take action, if necessary, independent of the train operator (*e.g.,* stop a train before it reaches the physical limits of its operating authority or allowed speed). Some systems will also include additional features, such as expanding the ability to monitor the position of hand-operated switches. Perhaps the most critical element of these systems is sophisticated software capable of accommodating all of the variables associated with rail operations. When successfully implemented, these enhanced train control capabilities will promote and enhance safe train operations.

Major railroads are engaged in various ongoing projects to test elements of this new technology. For example, BNSF has performed extensive and successful pilot testing of its version of train control (Electronic Train Management System) in Illinois and elsewhere. BNSF recently received final approval from the FRA to implement the technology on lines elsewhere on its system. Other train control projects in progress on major freight railroads include CSX's Communications-Based Train

Management (CBTM) system, Norfolk Southern's Optimized Train Control (OTC) system, and Union Pacific's Communications-Based Train Control (CBTC) system.

Implementing advanced train control technology will require major capital investments in wireless networks; sophisticated location-determination systems; highly-reliable software; and digital processors onboard locomotives, in dispatching offices and, for some systems, along tracks.

Railroads are committed to the development and implementation of advanced train control technology where it makes sense to do so (*e.g,* on high-density main lines, rather than low-density branch lines or yards), and at a pace that can be justified by available funds. Because there are so many variables involved, and because railroads are still investigating different train control systems and the advantages and disadvantages they offer, railroads believe that a rigid deadline is not appropriate. Railroads recognize that 2018 (the year mentioned in the legislation, though it allows the Secretary of Transportation to set an earlier date) is some years away, but the tremendous costs and complexities involved in train control systems argue for flexibility, not rigidity, both in time and operational functionality. As an alternative to a specific date, railroads favor a commitment to provide the FRA with an implementation plan regarding train control within 12 months, with the FRA then reporting to Congress. Perhaps at that point a firmer implementation timetable could be established.

Just one of the many complexities involved concerns radio spectrum issues. Railroads use the radio spectrum in a wide variety of safety-critical settings, including yard operations, maintenance of way, police, equipment identification, end-of-train units, defect detectors, distributed power, and train control. Only radio can provide immediate information on the speed, location, and direction of the hundreds of trains that might be operating at the same time on a single railroad. Thus, safe and reliable railroad operation depends on immediate and reliable access to the radio spectrum, as well as protection against interference and encroachment on railroad frequencies by others.

However, there is concern that widespread use of train control technology could be inhibited because of "spectrum congestion"—*i.e.,* the lack of sufficient and available spectrum frequencies within the portion of the spectrum used by railroads. This problem takes on even greater urgency in light of efforts by the Federal Communications Commission to narrow (or "refarm") the bandwidth for existing channels. Suitable spectrum alternatives for nationwide usage for train control are few. The rail industry continues to investigate this issue, but may need Federal Government assistance in finding suitable alternatives.

Fatigue Management in the Rail Industry

It is not in a railroad's best interest to have employees who are too tired to perform their duties properly. That's why railroads have long partnered with labor to gain a better understanding of fatigue-related issues and find effective, innovative solutions to fatigue-related problems.

Combating fatigue is a shared responsibility. Employers need to provide an environment that allows their employees to obtain necessary rest during off-duty hours, and employees must set aside time when off-duty to obtain the rest they need. It is also clear that factors that can result in fatigue are multiple, complex, and frequently intertwined. Therefore, efforts to combat fatigue should be based on sound scientific research, not on anecdotes or isolated events. There is no single, easy solution to fatigue-related problems, especially in an industry that must operate 24 hours per day every day of the year.

Individual railroads are pursuing a variety of fatigue countermeasures, based on what they've found to be most effective for their particular circumstances and the provisions of their collective bargaining agreements. I discussed many of these countermeasures in my May 2007 testimony. Not every countermeasure is appropriate for every railroad, or even for different parts of the same railroad, because the effectiveness of various fatigue countermeasures depends on the circumstances unique to each railroad.

Background on Railroad Hours-of-Service

The on-duty time of rail employees involved in operating, dispatching, and signaling trains is governed by the Hours of Service Act (HSA).

Under the HSA, rail employees who operate trains (*i.e.,* conductors and engineers) must go off-duty after 12 consecutive hours on the job, and then must have at least 10 consecutive hours off-duty. If they go off-duty after less than 12 hours on the job, they must have at least 8 consecutive hours off-duty. On-duty time starts the minute the employee reports for duty and includes any work that involves engaging in the movement of a train and deadhead transportation (see p. 9) to a duty assign-

ment. Off-duty time starts when the employee is released from duty, generally at a designated terminal or place of lodging.

For dispatchers, a workday is limited to 9 hours in a 24-hour period where two shifts are used, or 12 hours over the same period when there is only one shift.

Finally, signal employees can work a maximum of 12 consecutive hours on-duty, followed by at least 10 consecutive hours off-duty.

Railroads must keep detailed records specifying when each covered employee is on-duty or off-duty. Violations of the HSA can result in fines of between $500 and $10,000 per violation, with each employee considered a separate violation.

To comply with the HSA and still operate as a highly-competitive 24-hours per day, 7 days per week industry, freight railroads try to schedule crew assignments with as much precision as possible. Unfortunately, the nature of rail operations makes precision extremely difficult to achieve.

Most people are familiar with passenger modes of transportation, and that familiarity at times slants our thinking about how freight railroads do and should operate. A single flight crew, for example, will typically fly a plane from, say, Los Angeles to Washington. Occasionally, weather or other problems might impact airline schedules, but by and large passenger airlines are able to offer predictable, regularly-scheduled service. The fact that airlines can often "reset the clock" each day (because operations are greatly reduced at night) helps them maintain scheduled service.

Generally speaking, freight railroads are quite different. Unlike airlines, freight railroads require multiple crew changes to move commodities across the country. Railroads must use multiple local and yard assignments to gather freight at the beginning of a trip, then use multiple crews to move it across the country, and then use more local crews to deliver the freight to its final destination.

Where appropriate and practical, train scheduling is being implemented and can have positive impacts on fatigue. However, for a variety of reasons, including the variability in demand for rail transportation, weather, track conditions, provisions in collective bargaining agreements, and countless other factors, trains in many cases cannot run on a precise schedule.

Limbo Time

The HSA limits the number of hours that train crew employees can remain on-duty. At times, though, because of unforeseen events, a train may be unable to reach its scheduled (or even a convenient) crew change point within its crew's allotted 12 hours.

When this happens, the crew becomes "outlawed" and must immediately stop the train and wait for a new crew to replace it. Transportation of the replacement crew to the train, and of the outlawed crew from the train to a designated location where it is released from duty, is called "deadhead" transportation. Deadhead transportation is typically provided by other rail personnel or by private contractors hired by railroads for this purpose. Deadhead time is not counted as on-duty time in either the airline or motor carrier industries.

Under existing hours-of-service limitations, the time a railroad crew spends waiting to be taken to a duty assignment, and the time it spends being transported to the duty assignment, count as time on-duty.

However, time that outlawed crews spend waiting for deadhead transportation, and the time they spend being transported to where they are released from duty, currently count as neither time on-duty nor time off-duty. Instead, this time is considered "limbo time." During limbo time, the train crew has been relieved of, and will not perform, safety-sensitive duties. Employees' off-duty rest time begins only after they are released from duty (for example, to a terminal or a place of lodging).

Hours-of-Service Reform

Railroads support continued research on ways to fight fatigue and will continue to work with rail labor to find effective solutions to fatigue issues. To that end, railroads are amenable to a careful reexamination of the HSA's statutory limitations.

Generally speaking, railroads do not object to the provision in the Railroad Safety Enhancement Act of 2007 that prohibits train and engine and signal employees from working unless they have had at least 10 consecutive hours off-duty (up from 8 hours under current law) during the prior 24 hours, unless collective bargaining agreements between the railroad and affected employees provide otherwise. Railroads also do not object to a requirement that those 10 hours should be free of non-emergency communications from railroads.

Railroads disagree, though, that time spent deadheading from a duty site should count as on-duty time, rather than as limbo time.

If time spent deadheading from a duty site were counted as on-duty time, as proposed in the Railroad Safety Enhancement Act of 2007, railroads would have to calculate the approximate deadheading time and stop the train early enough to take account of that interval in order to avoid a violation of the HSA. But because limbo time generally results from unforeseen circumstances, this is not a realistic option. Countless actions as varied (and from a railroad's point of view, virtually unavoidable) as a grade crossing accident that delayed a train, a blown tire on a van carrying a train crew back to its release-from-duty site, or a sudden track washout would mean an almost certain violation of the HSA.

Railroads are aware of the provision in the proposed legislation that preserves limbo time if delays are the result of certain specified unforeseen causes, including an accident, a track obstruction, an act of God, severe weather events, a landslide, washouts, a major equipment failure, and other "unknown or unforeseeable" events. Railroads look forward to working with you to develop a more comprehensive and better-defined list of causes of delays that should be added to this existing list. Delays caused by congestion on the network are an example of delays that should be exempted from the bill's limbo-time requirements.

Although limbo time does not contribute to employee fatigue during the immediate work assignment, railroads are aware of concerns that it could play a role in creating a cumulative sleep deficit. To guard against this possibility, railroads support three changes to current hours-of-service regulations as an alternative to changes offered in the legislation.

First, any employee who works 12 consecutive hours on-duty, and then at least 1 hour of limbo time, would receive at least 14 hours of off-duty time once he or she is released from duty. Second, railroad train and engine employees would be subject to a new monthly maximum of 276 hours on-duty. Third, even though limbo time is not on-duty time, it would be included in those 276 hours.[1] Hours beyond this new maximum, which is consistent with permissible hours for other modes of transportation, would be a violation of the HSA. (Today rail employees can theoretically work 432 hours per month and still comply with the HSA.)[2]

Together, these measures not only significantly reduce the maximum on-duty time for train and engine employees under current law, but they also strike a balance between the concerns that limbo time contributes to fatigue and the realities of the unpredictability of railroad operations.

The above proposal is the railroad industry's preferred approach. Failing use of this approach, railroads would support a transfer of the hours-of-service authority to the FRA, with reliance on FRA's professional judgment.

Another provision in the Railroad Safety Enhancement Act of 2007 mandates that train and engine employees cannot work unless they have had at least 24 consecutive hours off-duty during the previous 7 days. This limit is arbitrary and inconsistent with railroad work schedules, particularly for employees assigned short hauls and who work in terminals. Generally speaking, the limit would be appropriate if extended one more day, to require 24 consecutive hours off-duty in a period of eight consecutive days. Railroads do support a provision in the bill that allows exemptions from the legislation's requirements for train employees in cases where a collective bargaining agreement provides a different arrangement.

Although modified work schedules are permitted by the HSA, they are not permitted by Federal Motor Carrier Safety Administration (FMCSA) hours-of-service regulations, which apply to the many railroad signal employees who drive commercial vehicles to perform their duties. Several years ago, railroads and rail labor (through the Brotherhood of Railroad Signalmen) petitioned FMCSA to allow the HSA to take precedence over FMCSA's hours-of-service requirements. To date, FMCSA has refused. Railroads strongly endorse the provision in the Railroad Safety Enhancement Act of 2007 that clarifies that railroad signal employees who operate motor vehicles are subject only to hours-of-service requirements promulgated by the FRA, and not by those issued by any other government agency (including FMCSA).

Another provision in the proposed legislation prohibits railroads from invoking the emergency work provision for signal employees for "routine repairs, maintenance, or inspection." (Under the HSA, signal workers are permitted to work more hours during emergencies than they can during non-emergencies.) Presumably, the purpose of this provision is to prevent railroads from "gaming the system" by invoking the

[1] Kansas City Southern and Canadian National do not agree with this position, and Amtrak abstains on the issue.

[2] In fact, though, railroads know of no cases where this has occurred. The vast majority of railroad workers are on-duty each month for periods comparable to most other U.S. workers. Some 83 percent of these rail workers are on-duty less than 200 hours per month and more than 95 percent are on-duty less than 250 hours per month.

emergency work provision when an emergency does not exist. The railroads do not object to statutory language ensuring the provision is only invoked when appropriate.

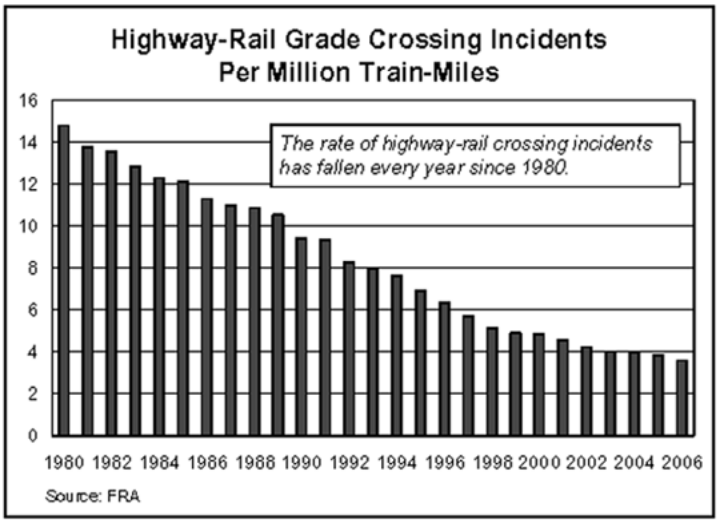
Finally, railroads do not oppose the imposition of hours-of-service regulations on contractor employees doing work which, if done by a railroad employee, would be subject to hours-of-service regulation. However, the contractor—not the railroad—should be responsible for compliance. Railroads can make contractor employees follow railroad rules while working on railroad projects, but railroads lack the ability to police contractors' overall labor policies and employee hours.

If policymakers determine that any group of non-railroad employees should be subject to hours-of-service limitations, policymakers should address the issue with those groups directly, not indirectly through railroads. As written, the Railroad Safety Enhancement Act of 2007 would apply hours-of-service restrictions to contractor signal employees and would hold a railroad responsible for compliance by its contractor employees.

Highway-Rail Grade-Crossings and Trespassers

Collisions at grade crossings, along with incidents involving trespassers on railroad rights-of-way, are critical safety problems. In 2006, these two categories accounted for 97 percent of rail-related fatalities. Although these incidents usually arise from factors that are largely outside of railroad control,[3] and even though highway-rail crossing warning devices are properly considered motor vehicle warning devices there for the benefit of motorists, not trains, railroads are committed to efforts aimed at further reducing the frequency of crossing and trespasser incidents.

Much success has already been achieved. In 1980, according to FRA data, 10,611 grade crossing collisions resulted in 833 fatalities and 3,890 injuries. According to the most recent available FRA data, 2,918 collisions in 2006 (down 73 percent) involved 368 fatalities (down 56 percent) and 1,010 injuries (down 74 percent). The rate of grade-crossing collisions per million train-miles fell 76 percent from 1980 through 2006, and has fallen every year since 1980. And because total exposure (train-miles multiplied by motor vehicle-miles) has risen sharply over time, the reduction in crossing incidents and casualties per unit of exposure has been even higher.



The Section 130 program, a national highway safety program created by the Highway Safety Act of 1973 and expanded most recently in SAFETEA–LU, is a major reason for the impressive grade crossing safety gains. Under the program, funds are apportioned to states each year for the installation of new active warning devices

[3] A June 2004 report by the U.S. DOT's Office of Inspector General (OIG) confirmed that motorist behavior causes the vast majority of grade crossing accidents. According to the OIG report, "Risky driver behavior or poor judgment accounted for 31,035 or 94 percent of public grade crossing accidents" from 1994–2003. The remaining accidents included such circumstances as vehicles stuck, stalled, or abandoned at crossings.

such as lights and gates, upgrading existing devices, and replacing or improving grade crossing surfaces. The rail industry commends and thanks the members of this committee and others in Congress for their support of this critical program.

Railroads continue to work hard to improve grade-crossing safety, including cooperating with state agencies to install and upgrade grade crossing warning devices and signals (and bearing the cost of maintaining those devices); helping to fund the closure of unneeded or redundant crossings; and supporting the national Operation Lifesaver grade crossing and pedestrian safety program. Railroads spend more than $250 million annually to improve, operate, and maintain grade crossings.

A recent initiative that will result in improved safety is the use of "stop" or "yield" signs along with crossbucks at grade crossings. The National Committee on Uniform Traffic Control Devices has recommended revising the Manual of Uniform Traffic Control Devices (MUTCD) to require the use of stop or yield signs in conjunction with crossbucks to make it clear what is expected of motorists at crossings. The AAR strongly supports amending the MUTCD as recommended by the committee and follow through on sign installation. The AAR also supports the FRA's recommendation, included in its May 2006 report to Congress on emergency notification systems for grade crossings, that signs comply with the MUTCD recommendations.

The AAR's testimony to this committee on May 22 noted a number of other engineering, education, and enforcement actions that should be implemented so that further improvement in crossing safety can be achieved, such as adopting a uniform national grade crossing closure process; continuing to fund the national Operation Lifesaver grade crossing and pedestrian safety program (addressed in Section 206 of the Railroad Safety Enhancement Act of 2006); increasing Federal liability insurance requirements for contractors whose funded projects interface with or impact a railroad; and enhancing grade crossing traffic law enforcement by requiring grade crossing safety as part of commercial driver's license educational curricula and by maintaining tough grade crossing traffic violation penalties.

Class I railroads support (and, in fact, are already engaged in) a program to provide the public with telephone numbers, posted at public grade crossings and at private crossings open to unrestricted public access (as declared in writing to the railroad by the holder of the crossing right), that can be called in the event of grade-crossing emergencies. Railroads also support a requirement for the development of model legislation that provides for penalties for violations of grade crossing laws, which occurs far too often—and often with tragic results. Both of these issues are addressed in the Railroad Safety Enhancement Act of 2007.

Railroads have programs in place to control vegetation on their property near crossings because they agree that motorists' sight lines should not be obstructed. If Congress decides that there should be a Federal requirement for clearing vegetation for this purpose, then the Federal requirement should preempt state or local laws so that there is national uniformity. FRA implementing regulations should also specify a required clearance distance, rather than simply call for "reasonable" clearance. Of course, railroads have limited ability to address vegetation at private crossings and on private land adjacent to railroad rights-of-way.

Trespassers

Since 1997, significantly more fatalities on railroad property have been associated with trespassers than with highway-rail grade crossing accidents. It is an unfortunate reality that too many people inappropriately use railroad property for short cuts, recreation, or other purposes, sometimes with terrible results. Railroads are engaged in ongoing efforts to educate the public that, for their own safety, they should stay off rail property.

Each year, scores of people tragically choose to end their life by stepping or lying in front of a train. To help prevent the tragedy of suicide, railroads support the Suicide Prevention Action Network (SPAN USA), a charitable organization dedicated to preventing suicide through public education and awareness; community action; and Federal, state, and local grassroots advocacy. In addition, through its Railroad Research Foundation, the AAR is researching the prevalence of, and underlying causal factors for, rail-related suicides. Such understanding could facilitate countermeasures to reduce suicides on railroad rights-of-way.

Other Provisions in the Railroad Safety Enhancement Act of 2007

Railroads have comments regarding various other provisions of the Railroad Safety Enhancement Act of 2007:

- Railroads strongly support the provision that authorizes funding for the design, development, and construction of a Facility for Underground Rail Station and Tunnel at the Transportation Technology Center in Pueblo, Colorado. As the

legislation notes, this facility would be used to test and evaluate the vulnerabilities of rail tunnels, to mitigate and remediate the consequences of accidents and incidents in tunnels, and to provide a realistic scenario for training emergency responders.

- Section 401 requires railroads and railroad contractors to develop training programs, approved by the FRA, for classes of employees that the Department of Transportation deems appropriate. Railroads agree that a well-trained workforce is essential to safe and efficient railroad operations. After all, "human factors" (*i.e.,* human error) is the cause of more rail accidents than any other single factor, and in most (if not all) of these accidents, the employee(s) involved broke a rule or set of rules.

  A new rigid Federal program would be redundant and is unnecessary, since railroads already have procedures in place, including ongoing training programs overseen by the FRA, to ensure that their workforce is adequately trained. New locomotive engineers, for example, receive at least 15 to 20 weeks of classroom and on-the-job training as a conductor before beginning work. Locomotive engineer training will add an additional 20–25 weeks before they are certified and ready to work. Total costs to train a conductor and later an engineer range from $52,000 to more than $70,000 per individual.
- Section 402 requires the Department of Transportation to report on whether certification of certain classes of employees is "necessary" to improve safety. Locomotive engineers require certification. Certification requirements for other classes of rail employees (*e.g.,* conductors) would be burdensome without accomplishing any safety objective. Certification is not necessary to ensure that rail employees are appropriately trained.
- Section 302 significantly increases (from $10,000 to $25,000) the maximum fine for railroad safety violations. This proposed higher fine is disproportionate. By comparison, the maximum penalty for a violation of safety requirements by motor carriers (railroads' primary competitors) is $5,000.
- Sections 406 and 407 provide for railroad safety technology grants and railroad safety infrastructure improvement grants, respectively. Improved rail safety benefits the public, not just railroads, making financing partnerships appropriate.
- Camp cars, house trailers on wheels, and emergency trailers have been a vital part of the railroad industry for many years. They serve as safe, dependable places for railroad workers to eat and sleep in many isolated, undeveloped areas where motels and restaurants are not easily accessible. Any notion that they have a negative impact on employee quality of life is misplaced. One Class I railroad which relies on camp cars in the remote locations it serves is currently modernizing its cars and converting them from eight-person to four-person sleepers, with two full baths, desks, and modern HVAC systems. Employee reaction on that railroad has been extremely positive. This same railroad has a 44-car "emergency fleet" that is critical to its ability to respond to emergencies and natural disasters such as Hurricane Katrina. These cars stand at the ready to be deployed to handle emergency situations at a moments notice.

  The FRA already has formal guidelines governing the location and sanitary conditions of railroad camp cars. The imposition of any restrictions on the future use of camp cars is not only unwarranted but would force employees to venture long distances in unfamiliar environments to seek lodging and dining facilities that are likely to be inadequate. Again, such travel does not enhance employee health and safety.

Performance Standards

There are two general approaches to workplace safety regulation: design-based standards and performance standards.

Design-based standards specify the precise characteristics of facilities, equipment, and processes a firm must use in the manufacture or delivery of its product or service. The FRA relies overwhelmingly on design-based standards in regulating rail safety. Design-based standards are costly for both railroads and the FRA to administer and maintain. They also tend to impede innovation by "locking in" existing designs, technology, and ways of thinking.

The discolored wheel rule provides a classic example of a design-based standard that discourages new technology. This FRA rule required railroads to remove freight car wheels that showed four or more inches of discoloration, on the grounds that such discoloration could portend wheel failure. However, research demonstrated conclusively that discoloration in new heat-treated, curved-plate wheels did not portend

failure. Despite this evidence, the FRA took more than a decade to exempt such wheels from the requirement. During this period, railroads had to discard perfectly safe wheels at a cost that reached $100 million per year.

In contrast to design-based standards, performance-based standards define the desired result, rather than mandate the precise characteristics that a workplace must exhibit. Performance-based goals focus attention and effort on the outcome, not the method.

Under one type of safety regime based on performance standards, each railroad would have goals for train safety (*e.g.,* accidents per million train-miles) and employee safety (*e.g.,* injuries per 100 employees) as part of a comprehensive risk management plan, based on targets established by the industry and approved by the FRA. If a railroad failed to meet these goals, it would come under increased FRA scrutiny, be required to specify how it planned to correct the problems, and eventually be subject to monetary penalties or even a return to design-based regulation.

While some (but not all) of the old regulations would be suspended under a performance-standard regime, the FRA would retain the power to conduct safety audits and to impose emergency directives at any time to protect public safety.

Under safety performance standards, railroads would have the opportunity and incentive to achieve safer operations as efficiently as possible. Performance standards would rely on the superior knowledge of railroads and their employees and would give railroads the discretion to experiment with new technologies and processes to improve safety. The result would be *superior* safety performance at a lower cost to railroads and their customers.

Risk-based performance standards represent a reform, not an abandonment, of safety regulation. Except in emergencies or after continued failure to meet targets, the FRA would no longer specify how a railroad would achieve its safety goals. Instead, the FRA would oversee and validate the goal-setting process, ensure that measures and data are accurate, and impose any necessary sanctions.

Railroads respectfully suggest that the Railroad Safety Enhancement Act of 2007 should incorporate performance standards as much as possible in place of rigid and unresponsive design-based rules to regulate safety in the railroad industry.

Conclusion

Thank you for the opportunity to testify on this critical topic. The railroad industry is committed to working with its employees, Congress, the FRA, its customers, and others to ensure that rail safety continues to improve.

Senator LAUTENBERG. Thank you very much, Mr. Hamberger.

Mr. Tolman?

STATEMENT OF JOHN P. TOLMAN, VICE PRESIDENT AND NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN, DIVISION OF THE RAIL CONFERENCE, INTERNATIONAL BROTHERHOOD OF TEAMSTERS

Mr. TOLMAN. Thank you, and good afternoon, Chairman Lautenberg, Ranking Member Smith, and Members of the Subcommittee. My name is John Tolman, I'm a Vice President of the Brotherhood of Locomotive Engineers and Trainmen, which is a division of the Teamsters Rail Conference.

On behalf of the 12,000 BLET members, and nearly 100,000 Rail Conference members, I want to express my thanks for the opportunity to testify here concerning rail safety.

My written testimony presents a comprehensive view of this legislation, but in my limited time this afternoon, I'd like to concentrate on the portion of the legislation that addresses hours-of-service reform.

There is a common understanding among government, labor and management, that fatigue poses a significant safety concern, or at least an underlining factor in far too many accidents. However, that common understanding has yet to produce a consensus on what forms fatigue abatement should take.

The most contentious hours-of-service issue is the limbo time, the time after the crew's 12 hours have expired, and before they arrive at the point of final release, which is neither on-duty time, nor off-duty. And for now, I'd like to raise some of the other consequences of limbo time that have not been discussed here.

When a crew is abandoned on a train for 4, 8, 12, and 20 hours, all freight being carried by the train is also left in limbo. Limbo time severely disrupts delivery of just-in-time parts and supplies. It also wastes countless gallons of diesel fuel, because locomotives must be kept running, wasting an increasingly expensive, scarce resource—not to mention the pollution.

Not only is limbo time bad for business for America, it's bad for business for the railroad industry itself. Every hour a crew and its train spends in limbo, reduces velocity. Increasing velocity means freeing up locomotives, cars, and crews, for more productivity. A dramatic reduction in limbo time is good for the railroads, workers, the economy, consumers, and the environment.

Unfortunately, limbo time is one of the issues where stakeholders have widely varying opinions. The industry insists that limbo time is not a factor in fatigue. The FRA believes that it should be part of the regulatory process. We, on the other hand, believe that the Supreme Court got it wrong in 1996, when it ruled that limbo time is neither time on, nor time off, duty, and that Congress needs to set the record straight.

We further believe that there is, there should be no limbo time, except in narrow circumstances, provided currently under the Hours of Service Act.

Regarding statutory time off-duty, we generally support the approach you are proposing, but there are some unintended consequences. And I want to bring to your attention, because they need to be addressed in this process.

One is that the requirement that an employee be off-duty for at least a 24-hour period every 7 days. We would respectfully request that you consider amending this requirement, so that the 24-hour period is taken at the employee's home terminal. Because the studies have shown that the quality of rest taken at away-from-home terminal, is inferior to the rest taken at a home terminal.

We also believe, and applaud, the 10-hour call. We believe it is a key component to fatigue mitigation, because it eliminates the possibility of someone who is not rested being required to work unexpectedly. Accordingly, we strongly support the pilot project for the 10-hour call, however, we would like to see all railroads implement a 10-hour call, and believe that the proposed 2-year limit is longer than necessary to develop a program.

I'd also like to commend you on two non-fatigue related topics: training, and elimination of the camp cars.

First, with respect to training—we can think of no craft or class of a railroad worker not impacted or governed in some manner by the Federal railroad safety statutes or regulations, and we believe training should be afforded across the board. At least, as to those statutes and regulations.

And second, Section 410, which would amend the Federal law by getting our Rail Conference brothers and sisters in the Brotherhood

of Maintenance of Way Employees Division out of the barbaric camp cars, something that is long, long overdue.

In closing, we appreciate the steps you've already taken, and look forward to working with you to produce a meaningful legislation.

And thank you.

[The prepared statement of Mr. Tolman follows:]

PREPARED STATEMENT OF JOHN P. TOLMAN, VICE PRESIDENT AND NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE ENGINEERS AND TRAINMEN, DIVISION OF THE RAIL CONFERENCE, INTERNATIONAL BROTHERHOOD OF TEAMSTERS

Thank you, and good afternoon Chairman Lautenberg, Ranking Member Smith, and Members of the Subcommittee.

My name is John Tolman, and I'm Vice President and National Legislative Representative of the Brotherhood of Locomotive Engineers and Trainmen (BLET), which is a Division of the Teamsters Rail Conference. On behalf of more than 33,000 active BLET members and over 70,000 Rail Conference members, I want to express my thanks for the opportunity to inform you of our position concerning rail safety, in general, and the Rail Safety Enhancement Act of 2007, in particular.

As you may know, the BLET has a long and proud history of helping lead the fight to improve safety in the railroad industry. We are charter members of the Federal Railroad Administration's (FRA) Railroad Safety Advisory Committee (SAC) and have actively participated in every aspect of rail safety regulation for more than a decade. Since June of last year, we have testified before House Committees and Subcommittees of jurisdiction more than a half dozen times concerning rail safety, generally, as well as on specific issues.

Rail safety has improved significantly in recent years. The industry has set records for the number of train-miles operated each of the past 2 years. In 2006, the rate for human factor accidents on main track was the lowest recorded since FRA began keeping data in 1975. Similarly, last year's rate for human factor accidents on yard track was the lowest it has been since 1997. Nonetheless, as tragedies in Minot, North Dakota; Macdona, Texas; and Graniteville, South Carolina, remind us, even a single accident can have catastrophic consequences.

The need for heightened safety in the railroad industry is underscored by unique factors in these times in which we live. The attacks of September 11, 2001, remind us of the importance of tight security in our transportation infrastructure and in the storage and carriage of hazardous materials. Deterioration of our highway systems and steadily increasing importation of foreign-manufactured goods have combined to stretch the industry to capacity in many places, and neither of these trends are likely to reverse any time soon.

We stand on the threshold of broad application of signal and train control technologies throughout the industry. While these technologies have the potential to significantly enhance safety, they also bring different and, perhaps, unanticipated safety challenges. Concurrent with all these factors is the retirement of the Baby Boomer generation of railroad workers, and the test posed by training and introducing over 80,000 new workers into the industry.

Fortunately, the industry is well poised to face and successfully deal with these challenges. Nearly every major railroad has set a profit record in the past few years. The Class I carriers, as a whole, have enjoyed roughly $25 billion in profits over the past 6 years, and recently have expended much capital buying back stock.

The attractiveness of investment in railroads is, perhaps, best evidenced by the significant stake in three Class I railroads purchased by Berkshire Hathaway earlier this year, and by the more recent reports of a possible leveraged buyout of Canadian Pacific by a consortium led by Brookfield Asset Management. Consequently, we are in a far different period than the industry was, for example, in the late 1970s, when even the most routine track maintenance was deferred for dangerous lengths of time because of the industry's financial shape.

Within this context, I want to congratulate you on the work you have done in drafting the Railroad Safety Enhancement Act of 2007. This comprehensive bill reflects an understanding of where the industry is, and where it needs to go over the next decade. It addresses many of the issues we have brought to the Hill, and dovetails nicely with the work undertaken by the House. While I will not comment today on every aspect of the legislation, I do want to discuss several issues that are of vital importance to BLET and Rail Conference members.

With regard to Section 101, I want to point out that the companion portion of the legislation being considered by the House would require that the Federal Railroad Administrator "be an individual with professional experience in railroad safety, hazardous materials safety, or other transportation safety." It has been our experience that FRA fulfills its safety mission much more effectively when such a person is serving as Administrator. Indeed, the qualifications brought to the position by the current Administrator—Joe Boardman—provide, perhaps, the best evidence of the advantage having such a requirement means in terms of safety, and I strongly urge you to consider a similar requirement.

We strongly support the railroad safety and risk reduction strategies set forth in Sections 102–104. The BLET has participated, at every level, in several different types of risk reduction pilot programs in recent years and I can tell you that they can have a significant positive impact on safety. Further, while we understand and support the need for protection of information developed in risk analyses, which is addressed in Section 107 of the bill, we would caution that such protections not be perverted to allow a railroad to "hide" information that currently is properly discoverable through alternative methods or means.

We also support Section 105, dealing with implementation of Positive Train Control (PTC) technology. In our view, an appropriate timetable for implementation will assist the industry in dealing with important issues such as interoperability among technology and equipment, and a consistency in operational philosophy.

I also want to commend you on the proposals for reforming the Hours of Service Act. Section 106 reflects many of the conclusions reached by the House T&I Committee, and also proposes a number of novel enhancements. There is common understanding among government, labor, and management that fatigue poses a significant safety concern, and is at least an underlying factor in far too many accidents. However, that common understanding has yet to produce consensus on what forms fatigue abatement should take.

For example, it is my opinion that introduction of a 10-hour call for duty, with no disruption thereafter, is one of two key elements in combating fatigue. Every crew member who knows at least 10 hours in advance that he or she will be required to report for duty at a time certain would have ample opportunity to ensure they are rested. The current problem experienced by crews receiving unexpected calls for duty and not having an opportunity for rest after the call is completely eliminated. I will address this subject again later in my testimony.

To be sure, the most contentious Hours-of-Service issue is so-called "limbo time," which is time after a crew's 12 hours have expired and before they arrive at their point of final release, which is neither on-duty nor off-duty time.[1] As you may know, we presented the House Railroad Subcommittee with a multitude of data concerning excessive limbo time, including identifying nearly 335,000 cases of limbo time in excess of 2 hours on just one Class I railroad from 2001 through 2006. I will not present a detailed recitation of the data here today, although we would be pleased to provide any supporting information you request. Rather than focusing on the aspect of limbo time that increases fatigue among operating crews, I would, instead, like to point out some of the other consequences of limbo time that have been lost in the debate on this issue.

When a crew is abandoned on a train for 4, or 8, or 12—or 20—hours, all of the freight being carried by that train also is left in "limbo." Manufacturing that relies on "just-in-time" delivery of parts and supplies is severely disrupted, and the deliv-

[1] In this regard, it is both appropriate and necessary for us to respond to the Administration's proposal concerning Hours-of-Service. Essentially, the Administration seeks to have current law repealed after it is promulgated as a regulation. Thereafter, amendments would be considered by SAC; if no consensus is reached within 24 months, the Secretary would be authorized to promulgate amendments in a traditional rulemaking process. We believe it is inappropriate to address limbo time in this manner at this time. The present controversy over limbo time stems from the holding of the U.S. Supreme Court in *Brotherhood of Locomotive Engineers, et al.,* v. *Atchison, Topeka & Santa Fe Railroad Co., et al.,* 516 U.S. 152 (1996), in which the Court construed the 49 U.S.C. Section 21103(b)(4) clause stating that "time spent in deadhead transportation from a duty assignment to the place of final release is neither time on-duty nor time off-duty." Specifically, the Court held that the "text, structure, and purposes of the statute persuade us that *Congress intended* that time spent waiting for deadhead transportation from a duty site should be limbo time. 516 U.S. at 162 (emphasis added). Since the Court's 1996 ruling, the amount of limbo time crews have been forced to endure has skyrocketed, reaching crisis proportions in recent years. We simply do not believe that Congress intended work tours—albeit not duty tours—in excess of 20 hours to occur dozens of times every year, nor work tours in excess of 14 hours that number in the hundreds of thousands. Congressional intent must be discerned from Acts of Congress, not actions of RSAC and/or FRA. Accordingly, we believe it is necessary that Congress act, first, to correct the Court's erroneous construction of the statute, out of fidelity to the 1969 amendments, the judicial interpretation of which created the current problem.

ery of finished goods and products also is left in "limbo," adversely impacting both retailers and consumers. Moreover, because the locomotives on the train must be kept running so that the train's braking system remains operational, gallon upon gallon of diesel fuel literally goes up in smoke without the train moving an inch, wasting an increasingly expensive and scarce resource and polluting the area where the train idles.

Not only is limbo time bad business for America, it is bad business for the railroad industry itself. As I said earlier, much of the railroad industry is operating at or near full capacity. Record-high fuel prices make fuel-efficient rail freight and rail passenger transportation more attractive, placing additional pressure on capacity. Average freight train velocity industry-wide hovers around 20 miles per hour. Every hour a crew—and its train—spends in "limbo" reduces velocity. Increasing velocity means freeing up locomotives, cars, and crews for more frequent use. An increase in velocity of just two miles per hour is the equivalent of increasing capacity by 10 percent. If all that capacity was filled by demand the industry currently cannot meet, industry revenues also would rise significantly. Consequently, a dramatic reduction in limbo time is good for railroads, railroad workers, the economy, consumers, and the environment.

Limbo time is one of the issues where stakeholders have widely varying opinions. The industry insists the limbo time is not a factor in fatigue. We, on the other hand, believe the Supreme Court got it wrong in 1996, and further believe that there should be no limbo time, except in the narrow circumstances provided currently in 49 U.S.C. Section 21102(a). That being said, we believe the House has laid a foundation for further efforts to resolve this issue, and we look forward to working with you on this matter.

With respect to statutory time off-duty, we generally support the approach you have proposed. However, there are some unintended consequences I want to bring to your attention, because they need to be addressed in this process. One issue is the requirement that an employee have at least one period of at least 24 hours off-duty every 7 days, unless the Secretary provides a waiver because there is a collective bargaining agreement in place with a different arrangement that provides an equivalent level of safety and protection against fatigue.

We would respectfully request that you consider amending this requirement so that the 24-hour period is taken at the employee's home terminal. A sufficient body of study exists establishing that rest taken at the away-from-home terminal—in a hotel where meal options are severely limited—is qualitatively inferior to rest taken at the home terminal. This is not only a quality of life issue for our members: it clearly has safety implications.

The other issue involves the impact of the proposed minimum 10 consecutive hours off-duty every 24 hours. It has come to our attention that the proposed language may have some unintended consequences on commuter railroads, where their heaviest service is during the morning and evening rush hours, and a number of assignments work a few hours in the morning, then are released for periods in excess of 4 hours before working a few more hours in the afternoon and early evening. We continue to study this issue and look forward to working with you on addressing this situation.

One other difference between the Senate and the House versions pertains to communication to a train employee during his/her off-duty period. Your bill would permit the Secretary to waive the prohibition against communications "for commuter or intercity passenger railroads if the Secretary determines that it is necessary to maintain that railroad's efficient operations and on-time performance of its trains." Such communication—which we call a "set-back" or a "respite" in railroad parlance—would be necessary in order to maximize a train employee's hours-of-service in situations involving a delay to the train they are scheduled to operate.

Such an accommodation makes operational and economic sense. Furthermore, many of our collective bargaining agreements historically have contained similar provisions. Nevertheless, and despite the fact that a "set-back" provides increased time off-duty between trips, repeated occurrences severely disrupt a crew's ability to manage its sleep and meal requirements, and would defeat the safety purpose undisturbed rest is intended to serve. For this reason, we believe the legislation should limit the waiver to one "set-back" per trip.

Section 106(d) of the bill would authorize the Secretary to regulate Hours-of-Service in a way that is broader than the companion provision of the House bill. Specifically, the Secretary would be authorized to issue regulations "to make other changes to the maximum hours or minimum hours an employee or class of employees may be allowed to go or remain on-duty, or may be required to rest, that will significantly increase safety."

Read in context, this provision appears to empower the Secretary to authorize duty tours in excess of 12 hours, or to authorize rest periods shorter than those provided in the statute. We would be hard pressed to identify a situation—other than a bona fide emergency—where crews should be on-duty longer than 12 hours. Further, other than the limited changes to off-duty periods listed above, we can think of few situations in which shorter off-duty periods would be appropriate. We believe that proposed Section 21109(a)(3) runs counter to the intent of the preceding two subsections.

As I mentioned earlier, we believe a 10-hour call is a key component in fatigue mitigation. Accordingly, we strongly support the pilot project for a "10-hour call" that would be enacted as 49 U.S.C. Section 21109(e)(1)(A). Indeed, it is our position that Sections 21103(a)(1)–(a)(2) could remain as currently written if a 10-hour call was instituted industry-wide. Furthermore—and singular to the 10-hour call concept—the contribution to fatigue of unexpected calls for work would be eliminated. We would prefer to see more than one 10-hour call pilot, and believe that the proposed 2 year deadline provides more time than is necessary to develop the program. We also strongly support the "calling window" pilot project that would be enacted as 49 U.S.C. Section 21109(e)(1)(B), because similar pilots that have been attempted in the past have proven successful in fatigue mitigation.

With regard to highway-rail grade and pedestrian crossing safety, which is addressed in Title II of the bill, we support your goals and applaud your leadership in addressing this important issue. We will follow Title II with keen interest, because grade crossing and pedestrian accidents take a heavy toll on our membership, both physically and emotionally. In that light, we also would ask that you consider an amendment to: (1) require the Secretary to issue regulations requiring railroads to implement an approved critical incident stress debriefing plan that includes counseling, guidance, and appropriate support services, (2) provide that an operating crew involved in a critical incident be relieved of duties immediately, and (3) provide that an employee witnessing a critical incident be relieved of duties as soon as feasible, and upon request.

Concerning Title III, dealing with the FRA, we note that Section 301 is less aggressive—in numbers and implementation schedule—than the House bill, which we support. We are confident that conference will produce authorization for enhancement of FRA's enforcement capabilities. Equally important is that the authorization be supported by the appropriations necessary to realize the legislation's goals.

We are pleased to see that, by proposing Section 303, the Senate favors greater transparency for FRA activities. With regard to enforcement actions, however, I would urge you to consider the proposal by the House in Section 505 of H.R. 2095, which would mandate that reporting be on a monthly, rather than annual, basis. We also very strongly support proposed 49 U.S.C. Section 21020(a)(4), requiring annual reporting that quantifies locomotive engineer certification cases appealed to, and the average length of time required for decisions by, each of the three appellate levels established in 49 CFR Part 240.[2]

I also want to congratulate you, and express our appreciation, for the railroad safety enhancement initiatives proposed in Title IV. With respect to training, which is addressed in Section 401, we can think of no craft or class of railroad worker not impacted or governed in some manner by Federal rail safety statutes or regulations, and believe training should be afforded across the board, at least as to those statutes and regulations. Moreover, while we have no desire to require that the industry "reinvent the wheel" or develop duplicative training programs along side of those currently in place, we urge you to ensure that the proposed 49 U.S.C. Section 20162(d) exemption not be applied in a way that would permit current training programs to fall below the standards established by the Secretary in promulgating the regulations required by Section 20162(a).

Regarding Section 402, pertaining to certification of certain crafts or classes of employees, we appreciate your acknowledgement of the increasingly complex nature of the railroad workplace. Having said that, however, we believe that at least four crafts or classes of railroad workers should be certified without the necessity of a study and report:

- Train Dispatchers are at the very center of railroad operations, and are responsible for coordinating train movements and track maintenance. The need to cer-

[2] We similarly support Section 308, pertaining to the updating of FRA's website. The website is of inestimable value to us for research purposes, and FRA is to be lauded for the scope and volume of information and data that is made publicly available. Unfortunately, the website's design is not particularly user-friendly, and we hope Section 308 provides an impetus to overhaul the website's design. We would support a special appropriation, if one is necessary, to achieve this purpose.

tify Train Dispatchers will be heightened as development and implementation of PTC technology continues to move forward.

- Conductors are co-responsible with certified locomotive engineers for the safe movement of trains and for compliance with a wide variety of Federal safety statutes and regulations, including those governing movement of hazardous materials. The federalizing of an additional three operating procedures, which currently is in rulemaking, exposes Conductors to even greater potential individual liability for civil penalties than they currently are.
- Signalmen are responsible for the installation, inspection, maintenance, and repair of railroad industry signaling systems, including active grade crossing warning devices. They perform safety-critical work each and every day and are exposed to potential civil liability for violation of FRA regulations similar to the exposure of Locomotive Engineers and Conductors. As with Train Dispatchers, the need to certify Signalmen will only increase as PTC technology matures.
- Carmen, who are subject to FRA regulations governing, and are responsible for, inspection, testing, maintenance, and repair of train brake systems. In recent years the minimum distance between major brake inspections and tests has increased, and the implementation of electronically controlled pneumatic braking systems will increase these distances further, making each inspection and test even more critical than before.

We appreciate your most serious consideration of our position on the subject of certification.

Section 408 proposes to amend current 49 U.S.C. Section 20303 requirements limiting movement of defective and insecure vehicles, and is patterned after the Administration's proposal on this subject. Presently, such movement is authorized only to the nearest available place at which repairs can be made. The crux of Section 408 is that "nearest" would be redefined as meaning "the closest in the forward direction of travel." Thus the bill proposes that a car with a defect that is discovered one mile after a train has passed a repair facility be continued in service to the next such facility, even it is 200 miles away or more.

The defects covered by this statute are so serious that the car no longer complies with the requirements of Federal law; mere garden-variety defects are not included. We are disappointed that the Federal agency responsible for safety oversight of the railroad industry would propose a change that would diminish safety for the sake of a railroad's operational convenience, and we do not support this section.

We are pleased to see that "dark territory" switch position detection is among the technologies addressed in your bill. As you know, dark territory has posed a particular problem and is the subject of National Transportation Safety Board recommendations. However, we prefer the approach proposed in H.R. 2095, which would require protection or an operational alternative. Switch position detection technology already is developed to the point where it is available off the shelf, and will be a component of PTC systems being designed and tested. For the reasons I stated at the beginning of my testimony, there is no valid financial reason why the Nation's railroads should be permitted to further delay in adding this vital safety enhancement.

At the same time, I want to congratulate you on the proposals in Section 410 to amend Federal law in connection with employee sleeping quarters. Specifically, getting our Rail Conference Brothers and Sisters in the Brotherhood of Maintenance of Way Employees Division out of barbaric camp cars is something that is long overdue. We respectfully request that you also take one more step, and eliminate the 49 U.S.C. Section 21106(2) clause grandfathering pre-1976 constructed sleeping quarters located in switching or humping yards.

We also support Title V, which would establish a system to provide assistance to families of those involved in a rail passenger disaster. With regard to the jurisdiction of the Surface Transportation Board over solid waste facilities, we agree with the position of the Association of American Railroads.

Before closing, I also want to briefly touch on a few items that are not presently in the draft legislation you are considering. Section 606 of H.R. 2095 would prohibit a railroad from denying, delaying, or interfering with medical or first aid treatment needed by a railroad worker who is injured on the job. In addition, the injured worker would have the right to be promptly transported to the nearest medical facility equipped to render the necessary care, and workers would be protected from retaliatory action triggered by the exercise of these rights. Harassment of injured workers is a serious problem on some railroads, and current FRA regulations covering the subject are wholly inadequate.

Section 608 of H.R. 2095 requires the Secretary to submit a report to the committees of Congress having jurisdiction on the effects of the locomotive cab environment

on the safety, health, and performance of train crews. Cab conditions vary widely throughout the industry, despite the establishment of FRA standards governing many aspects of this issue. Conditions that negatively impact a crew's physical well-being or ability to focus attention diminish safety, and they should be identified for consideration of reasonable additional remediation.

We also support the requirement to document inspection and maintenance activities, and other pertinent safety and security information, concerning tunnels which are longer than 1,000 feet and located under a city with a population of 400,000 or greater, or carry five or more scheduled passenger trains per day, or 500 or more carloads of toxic-by-inhalation hazardous materials per year, as proposed by H.R. 2095 Section 609. And we strongly support Section 616 of H.R. 2095, which provides clarification regarding state law causes of action. This is necessary, in our view, to correct an injustice resulting from a misapplication of the preemption provisions contained in 49 U.S.C. Section 20106.

Finally, there are three additional items I want to mention briefly that presently are not included in any draft legislation. First, 49 U.S.C. Section 20103 should be amended to provide that whenever the Secretary issues a regulation which incorporates a standard of a nongovernmental entity, such as the Association of American Railroads, any subsequent changes to such standards shall be subject to rulemaking. Second, 45 U.S.C. Section 797j, which pertained to regulation of Conrail prior to the 1996 transaction involving CSX and NS, should be repealed because it no longer has relevance. Third, a section should be added to Title 49 requiring the Secretary to prohibit crews reporting for duty in Mexico from operating trains within the United States, and crews originating in the United States from operating trains into Mexico.

Before closing, I again want to highlight the importance of making significant progress in fatigue abatement, with resolving the limbo time crisis and providing crews with notice to report for work in a manner that allows them to optimize available rest time. We appreciate the steps you have already taken, and look forward to working with you to produce meaningful legislation that will appreciably enhance rail safety.

Once again, I thank you for the opportunity to testify today, and would be pleased to respond to any questions you may have at the appropriate time.

Senator LAUTENBERG. Thanks very much, Mr. Tolman.

Mr. Solow?

STATEMENT OF DAVID SOLOW, CEO, SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY/METROLINK; VICE CHAIR—COMMUTER AND INTERCITY RAIL, AMERICAN PUBLIC TRANSPORTATION ASSOCIATION (APTA)

Mr. SOLOW. Chairman Lautenberg and members of the Subcommittee, on behalf of the American Public Transportation Association, its more than 1,500 member organizations, we'd like to thank you for the opportunity to testify on the Rail Safety Enhancement Act of 2007.

I am the Chief Executive Officer of the Southern California Regional Rail Authority, which provides commuter rail service in Los Angeles area. I also serve as acting Vice Chairman for Commuter Intercity Rail, and might add, Mr. Chairman, I learned everything I know about commuter rail from working in New Jersey Transit from 1981 to 1990.

Metrolink began service in 1992, we operate service over a 500-mile network over 7 lines. We serve more 43,000 passengers daily, from 54 stations.

Ridership continues to grow at all the commuter rail systems, and new service is part of the picture. Passengers took 435 million trips on commuter railroads last year, a 3.2 percent increase over 2005. My service—the Metrolink Service—grew by 5.25 percent. Just in comparison, Amtrak has about 25 million passenger trips.

So, we have vastly more ridership than Amtrak provides on a daily basis.

Let me state for the record that rail safety is a priority for all commuter rail systems who are carrying people. Accidents in the railroad industry have declined in 8 out of the last 10 years, and the safety of rail passengers far exceeds those who drive.

Commuter rail systems are different from freight railroads. Commuter rail employees almost always return to their homes each night, and they generally report for duty in an assigned place and time each day. The peak-period nature of commuter rail service, means employees often work split shifts during the day. Hours-of-service laws and limbo time are a consideration in the work schedules of commuter rail employees, and any collective bargaining agreements.

Changing the hours-of-service laws that reduce limbo time and limit duty time, may force commuter rail services to hire more crews who will work fewer hours each week, and have fewer opportunities to work overtime. Rather than mandate specific changes in hours-of-service laws, APTA asks that you consider directing the FRA—as Administrator Boardman suggested—to study fatigue in commuter rail operations, and use the Railroad Safety Advisory Committee process for the development of any changes.

Commuter rail systems are public agencies, that will pass on increased costs of such changes to riders, and/or the taxpayers who help us in supporting our service. Fare increases are likely to drive riders back to commuting by automobile, undermining national goals related to conserving energy, and reducing air pollution and congestion.

While the bill does not directly address Federal preemption of rail safety law, APTA strongly supports preservation of Federal preemption in the case of rail safety laws, APTA generally agrees with the American Association of Railroads on preemption, as this issue affects all railroads equally.

While we understand the bill makes statutory changes in hours-of-service laws, APTA urges you to consider grandfathering commuter rail systems under existing law, subject to FRA review of hours-of-service laws, as they relate to commuter systems, with any changes based on FRA recommendations developed under the Railroad Safety Advisory Committee process, that provides for both industry and labor input and collaboration. APTA believes that the increase in off-duty time from 8 hours to 10 hours during the prior 24 hours, is unnecessary for commuter rail employees, and urges the Committee to retain the 8 hours off-duty, which has worked well in the past.

We appreciate the bill that permits the Secretary to waive prohibitions on communicating with employees during off-duty times for commuter railroads under certain conditions, because that would help us when we call in replacement crews for employees who call in sick.

We do have concerns about reductions in use of limbo time. Use of limbo time for commuter rail employees returning from duty assignments can have a significant impact on railroad operations—some of the commuter railroads have estimated the elimination of limbo time will increase operating costs by as much as 10 to 15

percent. Again, we believe that the potential of waiver authority by the Secretary or a careful review of the use of limbo time by commuter rail systems by the FRA will conclude that current law protects against fatigue.

We also note the bill initially permits up to 30 hours of limbo time, per employee, per month in certain circumstances, and authority to retain up to 20 hours of limbo time per employee, per month.

While we appreciate the bill's specific exceptions for limbo time, and limited use of limbo time each month, we suggest that preserving at least 30 to 40 hours of limbo time per employee, per month—subject to the FRA Rail Safety Advisory Committee process—will be useful to commuter rail systems.

We appreciate the potential waiver authority in the case of 24 consecutive hours off in the past consecutive 7 days. We also appreciate that the bill permits the Secretary to waive this requirement if a collective bargaining agreement provides the equivalent level of protection against fatigue.

If significant changes in hours-of-service laws for commuter rail employees are required, we ask the Committee to consider a 2-year phase-in period to give the industry sufficient time to hire, train, and qualify new employees. In today's tight job market, we need time to hire a trained workforce.

While commuter rail systems are supportive of Positive Train Control, and other systems that improve safety and efficiency, in the environment where freight and commuter trains run together, we urge the Congress to provide as much flexibility in the implementation of these systems. Many concerns are about the interoperability of such systems and their cost, we welcome Federal assistance for implementation costs.

We applaud the Committee for inclusion of prohibitions on public disclosure of required rail safety analysis records. We want to be sure that such provisions adequately protect commuter railroads from increased liability.

APTA urges Congress to involve the commuter rail industry in any effort to develop regulations, and development of training programs to certification for rail system employees or crafts.

We thank the Committee for the opportunity to testify today, we want to work with the Committee and the Congress to develop rail safety legislation that affects commuter rail systems in the United States.

Thank you very much.

[The prepared statement of Mr. Solow follows:]

PREPARED STATEMENT OF DAVID SOLOW, CEO, SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY/METROLINK; VICE CHAIR—COMMUTER AND INTERCITY RAIL, AMERICAN PUBLIC TRANSPORTATION ASSOCIATION (APTA)

Introduction

Chairman Lautenberg and Members of the Commerce, Science, and Transportation Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, on behalf of the American Public Transportation Association (APTA), I thank you for this opportunity to testify on the Railroad Safety Enhancement Act of 2007.

Mr. Chairman, my name is David Solow. I am the Chief Executive Officer for the Southern California Regional Rail Authority (SCRRA) or Metrolink, which provides commuter rail service in the Los Angeles, California area. I also serve as Vice Chair

for Commuter and Intercity Rail on APTA's Executive Committee, which is the association's policy board. Metrolink began service in 1992. We operate service over a 500 mile network, over 7 lines, three of which are in conjunction with two different Class 1 freight railroads. We provide service to over 43,000 passengers daily at 54 stations. On a daily basis, Metrolink dispatches 145 of its trains, 26 Amtrak Intercity trains and 50 to 70 freight trains. With the extent of our operation, we regularly deal with challenges similar to those faced by commuter rail operators in communities across the Nation.

APTA member organizations include all of the commuter rail systems which provide passenger service in communities throughout the Nation. All of these systems are regulated by the Federal Railroad Administration (FRA) and all will be affected by changes in Federal rail safety laws.

Ridership grew at almost every commuter rail system in the Nation in 2006 and many communities are expanding or initiating new service. Passengers took 435 million trips on commuter railroads last year, an increase of 3.2 percent over 2005. At Metrolink, ridership grew by 5.25 percent in 2006. New commuter rail service recently started in Nashville and Albuquerque, and more new systems are in advanced stages of development in Minneapolis, Salt Lake City, Portland, Charlotte, and Denver. Still more communities are considering commuter rail as a way to help reduce congestion, provide mobility, and help people beat the high cost of gasoline.

Overview

First and foremost, let me state for the record that rail safety is a priority for APTA commuter rail systems. Overall, accidents in the railroad industry have declined in eight of the last 10 years and the safety of rail passengers is 20 times better than for those who drive automobiles. Second, commuter rail systems are substantially different from freight rail operations. Commuter rail employees, unlike employees on freight railroads, almost always return to their homes each night, and they generally report for duty at an assigned place and time each day. The peak-period nature of commuter rail service means that many employees often work split shifts during a day. Limbo time is an important consideration in the work schedules of commuter rail employees and since current law regarding hours-of-service and limbo time are important considerations in collective bargaining agreements it may make sense to phase in any changes in the law as such agreements are renegotiated and renewed.

Major changes in current Hours-of-Service (HOS) laws that substantially reduce limbo time and limit duty time are likely to force commuter rail systems to hire more crews, particularly relief crews that fill in for sick employees, and reduce the number of hours employees can work each week. They may also result in employees having fewer opportunities to volunteer for overtime on days off. Changes in HOS laws based on efforts to address fatigue in freight rail operations may unnecessarily impact commuter rail employees and the taxpayers who support commuter rail service.

Rather than mandate specific changes in current HOS laws, APTA urges Congress to direct the FRA to study fatigue as it specifically relates to commuter rail service, utilize the Rail Safety Advisory Committee (RSAC) process for development of any proposed changes to HOS laws, and make recommendations on any proposed changes that come from that process.

Commuter rail systems are public agencies that will necessarily pass on increased costs associated with HOS changes to their riders and/or state and local taxpayers. If fare increases are required, those increases will drive riders back to commuting by automobile, thereby undermining national goals related to conserving energy, and reducing air pollution and congestion on our highways. Commuter rail operators have an excellent safety record and current HOS law related to fatigue have ensured the safe operation of commuter rail systems around the country.

Among the bill's provisions that most affect commuter rail systems are changes in the Hours-of-Service (HOS) laws, including the substantial limitations on limbo time, requirements for Positive Train Control, the potential new certification of workers, and increases in civil penalties. We appreciate that the bill limits the disclosure of official information submitted by commuter rail systems to the Federal Government as part of risk analysis and reduction programs, but want to be sure that these limits effectively eliminate liability based on a commuter system's good faith efforts to cooperate with Federal authorities and improve safety and security.

While this bill does not directly address current Federal pre-emption of rail safety laws, APTA strongly supports preservation of Federal pre-emption in the case of rail safety laws. We believe that Federal pre-emption provides necessary consistency and prevents the application of inconsistent standards at the state or local level that would produce an unworkable regulatory patchwork for commuter rail systems.

APTA supports the position of the Association of American Railroads on pre-emption since this issue affects all railroads equally.

Hours-of-Service Laws

The bill makes several important changes in Hours-of-Service (HOS) laws and limbo time that may adversely impact commuter rail systems without reducing fatigue or improving safety. In general, APTA believes that commuter rail systems should be grandfathered under existing law subject to FRA review of HOS laws as they specifically relate to commuter rail systems, with any changes in HOS laws based on FRA recommendations developed under the Rail Safety Advisory Committee (RSAC) process that provides for industry and labor input and collaboration.

APTA believes that the increase in off-duty time from 8 hours to 10 hours during the prior 24 hours is unnecessary for commuter rail employees. We believe that our excellent safety record proves that the current requirement that a commuter rail employee has had at least 8 consecutive hours off-duty during the prior 24 hours ensures that fatigue does not affect safety, especially since commuter rail employees can almost always spend their off-duty hours in their own homes. The fact that commuter rail employees are generally scheduled to work regular daily shifts, and that they often have the opportunity for an interim rest period of at least 4 hours between shifts, at rest facilities, should all be factors considered before any change in the minimum daily off-duty period is contemplated for commuter rail employees, either by legislation or regulations.

The change in the draft Senate bill that would prohibit communications with employees during their daily off-duty time would also make it more difficult to call in on-call employees to cover for employees who call in sick or do not report for work, but we appreciate that the bill permits the Secretary to waive prohibitions on communications for commuter and intercity passenger railroads under certain conditions. We urge the committee to consider a specific waiver of these prohibitions on communications for commuter railroads, subject to an FRA study, with any recommendations developed under the RSAC process.

APTA also has concerns about provisions in the draft bill that significantly reduce the permissible use of limbo time. The bill changes current law which now considers time spent in deadhead transportation from a duty assignment to the place of final release to be neither time on-duty nor time off-duty—so-called limbo time. The use of limbo time for commuter rail employees returning from duty assignments, especially those employees filling in for sick employees, and the impact of this limbo time on fatigue, should be studied by the FRA and considered in the RSAC process before any changes are made. Once again, the fact that commuter rail employees have rest time during the day, off-duty time at home, and working conditions different from freight rail employees should be considered and fully reviewed before any changes are made. We also note that the bill essentially permits up to 30 hours of limbo time per employee per month in certain circumstances during the year after the bill's enactment, and authority for the Secretary to issues regulations allowing a maximum of 20 hours of limbo time per employee per month under such conditions within 2 years of the bill's enactment.

We also recognize that the bill provides a number of exceptions, based on weather, accidents, major equipment failures, and other specific conditions, when deadhead time returning from a duty assignment to a place of final release may be considered limbo time. While we appreciate these specific exceptions and a limited use of limbo time each month, we suggest that the bill at least preserve the full 30 hours of limbo time per employee per month subject to an FRA/RSAC process to review the use of limbo time by commuter rail systems.

We note that the bill changes HOS laws by requiring that an employee has had at least 24 consecutive hours off in the past consecutive 7 days. We also appreciate that the bill permits the Secretary to waive this requirement if a collective bargaining agreement provides a different arrangement which provides an equivalent level of safety and protection against fatigue for affected employees. We believe that employees will want to take advantage of this ability to have this issue considered in collective bargaining agreements and we hope that an efficient process for such waivers can be established.

Finally, if significant changes to HOS laws for commuter rail employees remain in this legislation, we urge the Committee to allow a 2 year phase-in period to give the industry sufficient time to hire, train, and qualify new employees. In today's very tight job market, we need time to build up the required workforce.

Positive Train Control

We note that the bill requires each Class 1 railroad, railroads with an inadequate safety record, and intercity and commuter rail systems to develop safety risk reduc-

tion programs, and that these programs must include as part of the required technology implementation plan a schedule for implementation of a Positive Train Control system by December 31, 2018. While APTA's commuter railroad system members want to consider the implementation of Positive Train Control systems and other signal systems that improve safety and enhance the efficiency of running commuter rail trains and freight trains in mixed operational environments, we urge the Congress to provide as much flexibility in the type of systems used and their implementation. We also remain very concerned about the interoperability of such systems with various freight and commuter rail systems sharing multiple railroad trackage such as is the case in Washington, D.C., Chicago, and Los Angeles. As public agencies, while supportive of PTC generally, we remain concerned about the substantial cost and support Federal assistance for implementation costs. In addition to cost concerns, we want to be sure that different trains from different railroads are able to respond to signal systems on different railroads in a consistent and predictable manner.

Prohibition on Public Disclosure of Required Records

APTA commuter rail systems applaud the committee for the inclusion of prohibitions on the public disclosure of required railroad safety analyses records, but we want to be sure that such provisions adequately protect commuter railroads which submit such information from increased liability as a result of their cooperation. For instance, we hope that the prohibitions on the disclosure of such information also prevent the release of information collected under Title II of the bill, which requires the submission of certain information on grade crossings for the development of a national grade crossing inventory.

Grade Crossing Safety and Trespasser Protection

We appreciate the Committee's efforts to improve safety at highway-rail grade-crossings. We also appreciate the bill's directive that the Secretary evaluate and review current local, state, and Federal laws regarding trespassing on railroad property, vandalisms affecting safety, and violations of warning signs for development of model prevention strategies and laws at the state and local level. As noted earlier, we hope that any information on grade crossings and related safety reviews collected under this title is subject to prohibitions on the public disclosure of required safety information included under Title I. We have also been supportive of the $220 million in Federal Highway Administration funding that is authorized annually under SAFETEA–LU for grade crossing safety and support efforts to see that those funds are fully used to improve safety at highway railroad grade crossings.

Railroad Safety Enhancements

The bill directs the Secretary to issue regulations within 1 year of the bill's enactment requiring railroads, railroad carrier contractors, and subcontractors to develop training plans for crafts and classes of employees. It also directs the Secretary to submit recommendations to Congress on whether certification of certain crafts or classes of railroad employees, contractor employees, and subcontractor employees is necessary to reduce accidents and improve safety. APTA urges Congress to involve the commuter rail industry in the process used to develop regulations for the development of training plans and in the process used to determine whether certification is beneficial.

We also appreciate that the bill directs DOT to study and report on the safest, most efficient and cost effective way to deal with efforts to minimize safety risks associated with platform gaps as required under the Americans with Disabilities Act. We urge Congress to ensure that the commuter rail industry has an opportunity to participate in the study and to make comments on any proposed recommendations.

Finally, while we note that this issue is not covered by the bill, we would like to be sure that transit police have the same flexibility as railroad police to cross state lines to protect commuter rail equipment, facilities, and operations. In the case of New Jersey Transit, their railroad police are part of the agency's transit police, with jurisdiction over bus, light rail, and commuter railroads, and as a result are not classified as railroad police with such authority.

Conclusion

We thank the Committee for this opportunity to testify on the draft version of the Railroad Safety Enhancement Act of 2007. We want to express our willingness, on behalf of the American Public Transportation Association (APTA), and particularly its commuter railroad systems, to work with the Committee, and the Congress, as it develops rail safety legislation that affects commuter rail systems in the United States.

We strongly believe, as reflected by the development and expansion of commuter rail systems in communities across the Nation, that the public wants and supports commuter rail service. Commuter rail systems offer an attractive alternative for commuters who want an alternative to driving to and from work on a daily basis. These commuters help to reduce traffic congestion and energy consumption, they help make our highways work more efficiently for those who must drive, they reduce their own commuting costs, and they often experience a better quality of life. We are happy to try and answer any questions that members of the Committee may have.

Senator LAUTENBERG. Thank you.

Senator SMITH. Mr. Chairman?

Senator LAUTENBERG. Yes?

Senator SMITH. With your indulgence, I have to go to a Finance Committee markup, and I will submit to the witnesses my questions. And I thank you very much, I appreciate all of your testimony.

Senator LAUTENBERG. We will keep the record open, and thanks very much, Senator, for your comments.

STATEMENT OF HON. JOHN F. KERRY, U.S. SENATOR FROM MASSACHUSETTS

Senator KERRY. Mr. Chairman, I thank you. I apologize, because, likewise I'm late, and I have to go, also, to the Finance Committee markup. But I wanted to come and just welcome John Tolman, here, as a witness, I've known him for a long time, I know his family, and I know what an expert he is on rail policy.

And I want to congratulate you and Senator Smith for this initiative, and this effort. I know there's some dispute over the question of, what constitutes duty hours, and how that works. And there's a little difference among some of the witnesses, and I understand that. And I'll look forward to following up with staff and figuring it out.

But the bottom line to me is, you want to have rail workers who are not excessively fatigued, you want to reduce accident possibilities, you want also to treat workers thoughtfully and intelligently. And I think that this bill seeks to do that, and I look forward to, working out the details with you, and I thank you for that. I certainly welcome all of the witnesses, but you know, forgive me a little chauvinism—if you don't mind—and personal privilege.

Thank you.

Mr. TOLMAN. Good to be here.

Senator LAUTENBERG. Thanks very much, Senator Kerry.

Senator KERRY. Again, if we can submit some written questions?

Senator LAUTENBERG. Absolutely. And I know that your relationship to Mr. Tolman is totally understood. Though he lives, I believe, now in Ohio.

Senator KERRY. Well, I've got strong feelings about Ohio, too, I want you to know.

[Laughter.]

Senator LAUTENBERG. I didn't mean to bring up a sore subject.

[Laughter.]

Senator KERRY. Well, he was on the right side of Ohio, you know.

Senator LAUTENBERG. Mr. Tolman has an accent that suggests that maybe he comes from another part of the country. We kind of like it, and we're good friends.

Thanks very much, Senator Kerry.

And I'm joined also by two other colleagues, and we'll try to move things along, we'll take 5 minutes each for questions.

Mr. Boardman—if we authorize funding for the Safety Risk Reduction Program—what kind of benefits might we expect from that?

Mr. BOARDMAN. Our expectation, Senator, is that the entire reason why we were looking at a Safety Risk Reduction Program is to build a stronger safety culture, and, in the next five years, reduce overall accidents by 50 percent. And we've already begun that in some of the actions that we're already working with, some of the railroads: on close-call reporting; track joint bar inspection; a total quality index on track. What we're really doing is looking for the ability to use precursor data: things that would indicate to us that there is a risk out there. There needs to be a commitment, there needs to be a systematic and objective look at the data itself (some problem solving, corrective activities), and then there is a—we have to have some kind of sustaining mechanism. But our goal is a 50-percent reduction in five years.

Senator LAUTENBERG. Mr. Hamberger, would the railroads support this kind of safety regimen?

Mr. HAMBERGER. Absolutely, Mr. Chairman, in fact, I think from our standpoint, we are in fact moving, and have moved in that direction from the standpoint of predictive maintenance. And as I testified before this Committee on May 22, the new technologies that we are employing at the roadside, as the trains go by trying to keep track of out-of-shape wheels, they're trying to determine what is the thickness of the brake pad, and using sonar and laser technologies to try to stop something from happening, and not just react to it after it happens. And so, this holistic approach that is in the bill, we support very much, thank you.

Senator LAUTENBERG. Well, it's interesting to see the relative unanimity here of interests in getting the bill underway, and safety rules underway, and adjusting the hours-of-service so that people aren't asked to do tasks that are unreasonably taxing when fatigue could be a terrible factor in the operation of the railroad.

But, this week a Federal court struck down a DOT proposal on reforming hours-of-service rules for truckers. This is the second time that a court stopped the Administration's attempt to allow more consecutive hours on the job. Now, after two failures to get this right in the trucking industry, don't you think it's risky to give blanket authority to the Department to set this standard for railroad employees? Who wants to comment?

Mr. Tolman?

Mr. TOLMAN. Senator, I believe you're right on point. And frankly that's—some things belong in the RSAC process, and can work well, but I sincerely think that Congress—or I should say, the Supreme Court created this quagmire of limbo issue, and Congress has to set that, that particular issue straight. I don't believe that it belongs in an RSAC process, there are only two stakeholders in the RSAC process—or three, stakeholders—the signalmen—four, I'm sorry—signalmen, dispatchers, United Transportation Union, Brotherhood of Locomotive Engineers.

That's why it doesn't belong in an RSAC process. I think that Congress has to create a parameter. I think you did in this bill, I applaud you for doing that, but I just don't think the limbo issue needs to go down that road. Other issues, fatigue-related, can go down that road, and maybe should go down that road if—and you have it correct—with restrictions, with time parameters. If you don't do A, then you go to B. And, I applaud you for that.

Senator LAUTENBERG. Do you believe our bill provides FRA with enough latitude to update the hours-of-service in a way that will not jeopardize safety?

Mr. Boardman?

Mr. BOARDMAN. I was going to go back to the other question, but that's fine.

Senator LAUTENBERG. If you can do it in a hurry.

Mr. BOARDMAN. Let me just go back to the other question; this is a place that John and I don't agree with each other. I think that when the Supreme Court looked at one of my sister agencies (FMCSA) what they said was, one of the things they said was, that there wasn't enough discussion with stakeholders, with folks that really had an opportunity to say what the issues were.

I think one of the things that I've noticed and I compliment—and John's been around a lot longer than I have in the RSAC process—is that you really do get into the nitty-gritty of those kinds of discussions in the RSAC process. So, I see that as an important element of what is needed is to make sure that whatever comes out of this is the appropriate thing. RSAC gives us the flexibility, because we can discuss those things.

To your question right this minute—just looking very quickly at it, and your bill for today—we see a lot of very serious and good thought in this process of hours-of-service. And we want to continue to work with the Committee to come together to a solution.

Senator LAUTENBERG. Thanks very much. Just an, an ad lib to what you've said—very few people have been around here longer than I have, so——

[Laughter.]

Senator LAUTENBERG. Mr. Tolman, has been around long——

Senator Carper, a Senator from a State that, though small, has a very active interest in railroads, both passenger and freight, and we're happy to have him here with us.

Senator Carper?

STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM DELAWARE

Senator CARPER. Thank you, Mr. Chairman.

Gentlemen, welcome, thank you for your presence today, for your testimony, and for responding to our questions. Particularly your insights on this proposal from Senator Lautenberg.

My first question is to Administrator Boardman—I almost called you Admiral Boardman, I saw "ADM"—I'm an old Navy guy, I almost promoted you here.

But, in your testimony I think you discussed permitting railroads to comply with an improved fatigue-management plan, as an alternative to complying with benchmark limits set forth in any perspective regulations, in fact, I think those are your words.

And I would just ask, what minimum standards, or factors, would the FRA expect to see in those management plans that you're alluding to?

Mr. BOARDMAN. I think, Senator, that one of the things that we really want to do, and it actually ties in to the answers to the last questions, is to discuss those principles that we think are the scientific results that we've really found in fatigue management.

For example, there are four of them that I'd like to really talk about for just 1 second. And that is, that we know at this point in time that it really takes 8 hours to feel rested. And, in the law that currently exists (recognizing that there are some changes proposed), but in the current law, if you worked 11 hours and 59 minutes, you'd get 8 hours off. And the call practice right now, is to be called as much as two hours beforehand. That in and of itself, we know immediately, can't give the kind of rest that an employee really needs.

In 1996, there was a study done that found the average engineer got just a little bit over seven hours of sleep a night. And in the more recent studies that we've looked at, they've shown that there's another issue here—with 12 hours off, the average amount of time for sleep is 6.1 hours, and with 9 hours off, it's about 4.5 hours. In fact, it is that the more time that a person has off, the more opportunity the person has to get rest. And with the less time, what we're seeing is a sleep deficit occurring. So, it's that kind of scientific knowledge that will help us determine those flexibilities with the railroads.

The hours-of-service laws do not take time of day into account at this point in time. Yet, most people sleep best at night. If you quit at dawn, you've got the same amount of time off as somebody that gets off in the evening. And what we find, and what the scientists have found is, that when you're done between 5 a.m. and noon, that's the worst possible time for you to get back to sleep. So, we'd like to see those kinds of issues addressed in anything in the future.

We, third, we know today that the circadian rhythm, or that 24-hour sleep-wake cycle, can be rapid, can be disrupted with rapid changes in assignment. It can affect your physiological functions—digestion, temperature regulation—kind of like jet lag coming from the West to the East. And under the current hours-of-service laws, it forces a sleep-wake cycle that's less than 24 hours in its pattern, and it's highly unnatural, and it's difficult to adapt to. So, we would want them to address that, as well, for flexibility.

And then the fourth area that we would really want them to address would be the kinds of things that recent studies have indicated that less than seven hours of sleep may have other consequences, and they're costly consequences for everybody. They're obesity. They're diabetes. They're cardiovascular and hypertension problems. It's anxiety. It's a depressed mood (that's what I tell my wife), and it's alcohol use (and I don't tell her that).

[Laughter.]

Mr. BOARDMAN. Thank you.

Senator CARPER. Sounds like pillow talk.

Thanks, thank you for that response.

This is a question, really, for Administrator Boardman, for Mr., is it Solow? Solow. Has your name ever been mispronounced?

Mr. SOLOW. Many times.

Senator CARPER. All right. Well, not today.

Mr. Hamberger, welcome. Nice to see you.

In hearings about railroads, you know, we hear a lot about grade crossings, I used to hear a lot about those when I served on the Amtrak Board. But, it often is seen as solely a railroad issue, even though half of the crossing equation is, as you know, is a road. And, I just wondered—how engaged have State DOTs been in addressing grade crossings and their safety? How aggressively have the States sought to invest $220 million in funding that we authorized in SAFETEA–LU for grade-crossing safety?

Mr. SOLOW. Mr. Carper?

Senator CARPER. Mr. Solow.

Mr. SOLOW. Senator Carper—we are very aggressive in California. We have many grade crossings. Just, for a little bit of the history, during the WPA you spent a lot of money on the East Coast on grade separations. We spent them on water projects. So, we have all these railroads and all these grade crossings which we now have to address. And we're spending a lot of time and effort in the urban areas, because we have very high vehicular traffic, where we have very high commuter rail and passenger rail and freight traffic.

So, we're spending a lot of our efforts working with the FRA, as a matter of fact, to do as much in terms of new technology at grade crossings—median barriers, four-quad gates, predictors in the road surface, those type of things—to attempt to improve grade crossings as quickly as we can. We know we're not going to get enough money for all of the grade separations we'd like. So, we're putting all of our time and effort, beside grade separations, to make vehicular traffic as safe as possible at grade crossings. And it's a—it's a strong effort by both local agencies in California, for example, and the State.

Is there enough money? No. But, we are spending as much as we possibly can.

Senator CARPER. My time is expired, but if I could have just another moment or so, Mr. Hamberger—could you just, quickly?

Mr. HAMBERGER. Yes, in addition to all of that good work that's going on, I did thank Chairman Lautenberg before you came in, Senator Carper I know you, also, have done a lot at the Environment and Public Works Committee to fully fund the Section 130 grade-crossing program.

Our members are working with local communities, in an effort to work cooperatively where there might be 10 crossings in a town, to help fund a program where several of those might be closed, but add quad gates, or even grade-crossing separations at the others.

And, so we take this very seriously. And, I think, the states are stepping up. And one of the, of course, major accomplishments is to get the word out, through Operation Lifesaver, how important it is, and that it takes a mile for a train to stop. A number of our members are putting cameras on the head-end of the trains, so that we can go back into the communities, and try to educate people that, going around, and it's just a very eerie scene to see, where

the third car in line at a crossing all of a sudden comes around a gate that's down. And we need to try to educate the American public, that that is just not a smart play. And, I know that the Federal Railroad Administration is very involved in that, as well.

Senator CARPER. Thank you.

Thank you, Mr. Chairman.

Senator LAUTENBERG. Senator Klobuchar?

STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Senator KLOBUCHAR. Thank you, Mr. Chairman, and thank you to our witnesses for being here. I think I said at the last hearing that this has been a concern in our state, we've had 9 reported fatalities in 65 total collisions in 2005. And there was one devastating accident in Minot, North Dakota, right next door, and it brought home to the people in our State, the devastating impact this can have on a community.

And, I'm glad that we have new technology, and that that's going to help us, and I'm also glad that there has been research done on fatigue, and sleep deprivation. And I'd like to commend Senator Lautenberg, and Senator Smith for their work, for introducing the Railroad Safety Enhancement Act of 2007.

And so, I had some questions, just of you, Mr. Hamberger. I know that we heard at the rail safety hearing in May that the workforce is getting older, and retiring, and I wondered what you're doing to recruit new workers, and to ensure that the workers are trained adequately.

Mr. HAMBERGER. Well, it's a major challenge, Senator, and thank you for the question. In fact, we're looking at the need for 80,000 employees over the next 5 years, just to replace the attrition. And so, each of our members is holding job fairs, working with colleges, working with the military, in particular. We're working with the Department of Labor to go out to their one-stop labor recruitment stops in urban areas.

I will be blunt, and tell you that there are a couple of hurdles to overcome. Number one is that we are a zero-tolerance industry. We have drug testing on a random basis, and we have drug testing when there's an accident, and we have pre-employment drug testing.

I am told by our human resources people, when we have a job fair, that's the first thing they make clear to the pool of applicants. They then take a break, and when they reconvene, about 50 percent of the pool has walked out the door. And, so that is challenge number one.

Challenge number two——

Senator KLOBUCHAR. Kind of like what's happening with the Tour de France.

[Laughter.]

Senator KLOBUCHAR. Sorry.

Mr. HAMBERGER. Point well taken.

Challenge number two is that we are a 24/7 operation. We do have people, as Mr. Tolman was indicating, you know, working the midnight shift. In Northern Territories, in South Dakota, where it

gets a little cold in February, and so it is sometimes difficult to recruit into that environment.

Nonetheless, we seem to be hitting our targets. We have, in fact, increased employment in the last couple of years, and as I point out in my written testimony, we have very good training programs. I know that the bill calls for training programs. We think that, in fact, an engineer gets months of training, it costs between $50,000 and $70,000, and I would invite any of the members of the Committee, all of our Class 1 railroads have very up-to-date, very modern training facilities, and we'd love to have a field hearing, or have you come out and take a look at them.

But, you have put your finger on a challenge for the industry going forward.

Senator KLOBUCHAR. Mr. Tolman, maybe you want to add to that? And could you also comment about, I know in your written testimony you talked about some of the workers still sleeping in "camp cars" and the concerns with that, if you'd like to add to that.

Mr. TOLMAN. Sure. I'd just like to, first, I guess, address the question that you just asked Mr. Hamberger. And, first of all, I think drug testing in the industry has absolutely cleaned up, and over the many, many years with wonderful programs such as Operation Red Block where our peers work, and help each other, there's less than 1 percent of incidents testing positive in the operating employees in the industry.

The railroad industry is a 24/7 business. And, unfortunately, it takes a commitment from both labor and management to try to, you know, make it a desirable place to work. And, this is what we're doing here—is try to figure out ways it would make—not only the—my understanding is when they do these interviews, they end up with, after 2 years, with less than 30 percent of the people they've hired. So, obviously, just from a business perspective, there's something wrong with the industry.

The younger employees are more apt to look for time off with the family, and that's what, you know, the social system of today's society is about. And that—you need to find a way to get that. And I think this bill does one thing, a step in the right direction on that, and it's the 10-hour calling. And it allows you the opportunity to, number one, get the adequate rest, and it also allows you to, you know move, to prepare yourself for coming to work.

As far as the camp car issue, it's absolutely ridiculous that we're even discussing this, as far as I'm concerned. When you look at the conditions, you actually—I guess it was measured in, comparing a, somebody put in prison versus a camp car—the prisoner would actually have more room to move around, never mind the quality of sleep of that individual, living and having to deal with the conditions in there. I know the House has the same version, I know the Senate—and thank God the Senate has the same. And hopefully, at the end of the day, through the leadership of the Senate and the House, that we eliminate those for now. And, it is only one railroad that currently has them, and that's a nice thing, too.

So, thank you.

Senator KLOBUCHAR. OK.

Mr. HAMBERGER. If I—thank you.

Senator KLOBUCHAR. Yes, you want to just quickly add to that?

Mr. HAMBERGER. I would just say that one railroad, in fact, does rely on camp cars in remote locations, where there really are not other accommodations for their maintenance of way workers. And they are now modernizing their cars, converting them from 8-person to 4-person sleepers, putting in air conditioning, baths, desks and, in fact, they have about 44 of these cars on an emergency basis, they used them during Hurricane Katrina, there are Federal Railroad Administration guidelines governing that camp car use, and it really is a way to provide good accommodations in remote locations.

So, hopefully as this updating program gets completed, it will be accepted, and—in fact, we hope—embraced and endorsed by the employees as well.

Senator KLOBUCHAR. Mr. Tolman, do you have anything to add?

Mr. TOLMAN. I beg to differ, I don't think that's the way to go. Not only the quality of sleep—sleeping beside a railroad, on a railroad siding while a train goes by. I guess I would challenge Mr. Hamberger that he should go out in a camp car in a month, and then come back here and see if that's the way to go.

Mr. HAMBERGER. You have to compare it to what the alternatives are out there.

Senator KLOBUCHAR. It sounds like a CODEL trip for us.

[Laughter.]

Senator KLOBUCHAR. Perhaps this will be resolved in the legislation. So, thank you.

Senator LAUTENBERG. Well, last week, we had two nights here in which—I'll speak for myself, I had less than 4 hours sleep each of those nights—and I hope there was no evidence of fatigue there, but I sure felt it, I can tell ya.

Senator Thune, please.

STATEMENT OF HON. JOHN THUNE,
U.S. SENATOR FROM SOUTH DAKOTA

Senator THUNE. Thank you, Mr. Chairman. A CODEL on some of the railroads in South Dakota would be a little bumpy—on some of that FRA-accepted track out there. You thought we had a hard time sleeping the other night, I think it'd be hard sleeping in those sleeper cars, too.

But, I appreciate the opportunity to participate in today's Subcommittee hearing on legislative matters that could strengthen the role of the FRA when it comes to rail safety, and I have drawn some previous experience as State rail director in the State of South Dakota. Having a rail system that is both efficient and safe, is critical to our Nation's economy. There is no better way to haul agricultural commodities, to move freight and that sort of thing, than on the railroads. Our Nation has a tremendously vast rail network, and with the projected increases in real traffic that we expect in the coming years, I think it's going to be important that we be able to work together in the Senate to ensure that we assist the Department of Transportation as it works to make our rail system even safer than it is today.

And I also think it's important as we evaluate legislative proposals, to also stress the significant improvements that the industry and regulators have made over the years when it comes to the

reductions in train accidents, and with the improvements in overall safety, particularly regarding injuries and fatalities. And, while there's certainly a lot more that can be done, we should also, I think, not forget how far we've come in the last few years.

So, I appreciate the testimony of our witnesses today, and welcome their suggestions as we go about the job of making our rails stronger and safer.

And, I would like to just pose, I guess, one question of our witnesses. And I agree, obviously, that the improvements that are being proposed, as it relates to some of the things in your bill, Senator Lautenberg, that deal with hours-of-service, limbo time, staffing issues, and some of the workplace issues are all important. Can you tell the Committee the other steps that you believe our Nation's railroads could make to improve safety? In other words, what other things could the railroads be doing that would lead to safety improvements that perhaps are, maybe fall outside the parameters of this particular piece of legislation?

Mr. BOARDMAN. Senator, I think that we recently issued—and we can produce this and give it to you—the *National Rail Safety Action Plan.* We just recently updated it; it began on May 16, 2005. And, I think it ties into many of the elements of this particular bill, and all of the bills that are being discussed, on almost every area.

But, if you look at it from the standpoint of safety improvement (and I know you're an old State rail guy), it's really about the track, and it's about what's under the track, and it's about the technology we use today, and how we apply that technology.

But all of that technology (whether it is a technology that gets precursor data for us to reduce risk or whether it's a technology that improves human factors), I think, ties into this legislation in one form or another. Because, as we talk about the elements of this particular bill, we're talking about the critical pieces of the grade-crossing accidents, the trespass accidents, and understanding what we need to do for the future to improve those kinds of things.

For example, on the trespass today, the newest task force in RSAC's Passenger Safety Working Group, today, is looking at—especially—the gap between a passenger train and the station platform, because of the different rolling equipment, and the different locations of where it is, but it needs to move quickly to do something to reduce the number of people—pedestrians—that are being killed as they try to get to that train, by a second train. And we need a way of identifying that.

So, I think—and I don't know if I've addressed your question quite the way you really want it—but what we'll provide to you is that update on that *National Rail Safety Action Plan,* which I think ties many of these things together.

[The information referred to follows:]

National Rail Safety Action Plan Progress Report 2005–2007

FEDERAL RAILROAD ADMINISTRATION
United States Department of Transportation

May 2007

Introduction

On May 16, 2005, the U.S. Department of Transportation (DOT) and the Federal Railroad Administration (FRA) launched an aggressive and proactive *National Rail Safety Action Plan* to address important safety issues by:

- Targeting the most frequent, highest-risk causes of train accidents;
- Focusing FRA oversight and inspection resources more precisely; and
- Accelerating research efforts that have the potential to mitigate the largest risks.

The *Action Plan* includes initiatives in several areas: reducing human factor-caused train accidents, addressing the serious problem of fatigue among railroad operating employees, improving track safety; enhancing hazardous materials safety and emergency preparedness, focusing FRA resources (inspections and enforcement) on areas of greatest safety concern and consequence, and further improving highway-rail grade crossing safety.

This report details the substantial progress made by FRA to successfully implement the various elements of the *Action Plan* during the past 2 years. It also highlights other projects and activities FRA is tackling, which while not specifically elements of the *Action Plan,* nonetheless will contribute to advancing safety on the Nation's rail network.

Achievements During the Past Year

Below is a list of achievements in the implementation of the *Action Plan* since the first progress report was issued in June 2006.

August 2006	Public meetings on safety at private highway-rail grade crossings begin
October 2006	Proposed rule on human factor-caused train accidents published
November 2006	Summary report on validation of fatigue measurement model issued
January 2007	Research agreement signed by FRA and railroad and chemical industry leaders to strengthen rail hazmat tank car design standards
February 2007	Data collection for "Close Call" near accident project begins
April 2007	Two new automated track inspection vehicles begin service

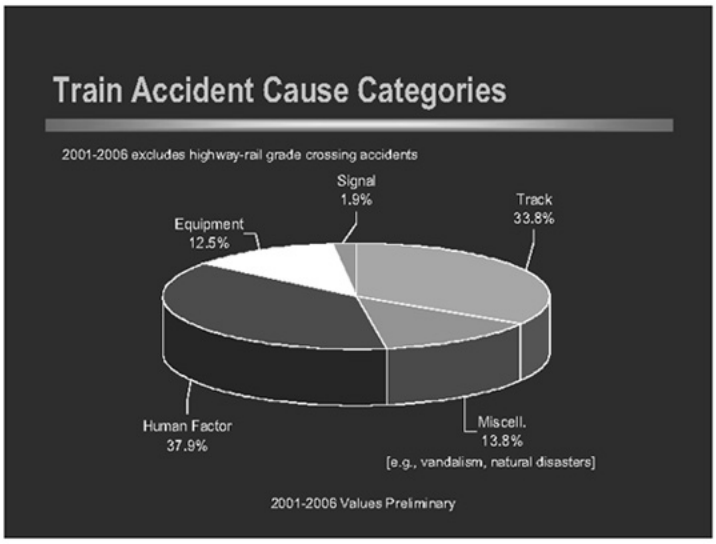
In February 2007, FRA also submitted the "Federal Railroad Safety Accountability and Improvement Act", introduced in Congress as H.R. 1516 and S. 918, to reauthorize the agency for 4 years and strengthen its safety program.

Anticipated Action Plan Accomplishments in 2007

- Publish final rule to reduce human factor-caused train accidents
- Complete research to strengthen the structural integrity of hazardous materials tank cars
- Issue final report on private highway-rail grade crossing safety with findings and recommendations for further action

Causes of Train Accidents

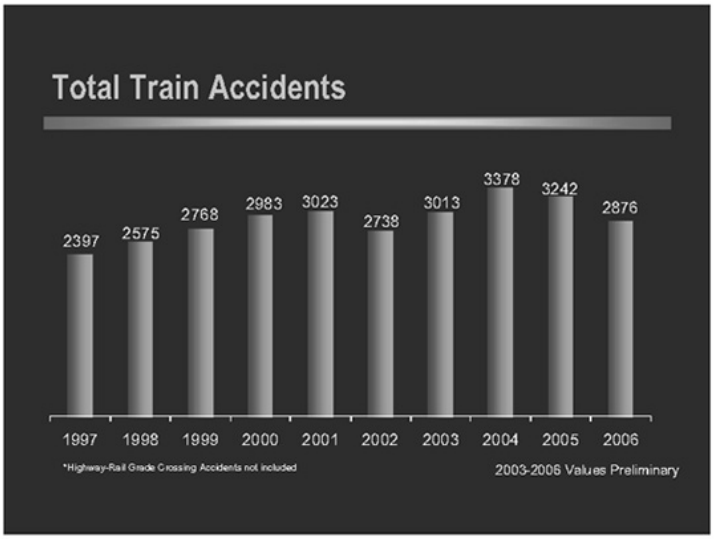
The causes of train accidents are generally grouped into five categories: human factors, track, equipment, signal and train control, and miscellaneous. Two categories of accidents—those caused by human factors and those caused by defective track—comprise more than 70 percent of all reportable train accidents. Accordingly, both are the primary target areas for improving the overall train accident rate. In recent years, the most serious events involving train collisions or derailments resulting in release of hazardous materials, or harm to rail passengers, have been caused by human factor or track causes.

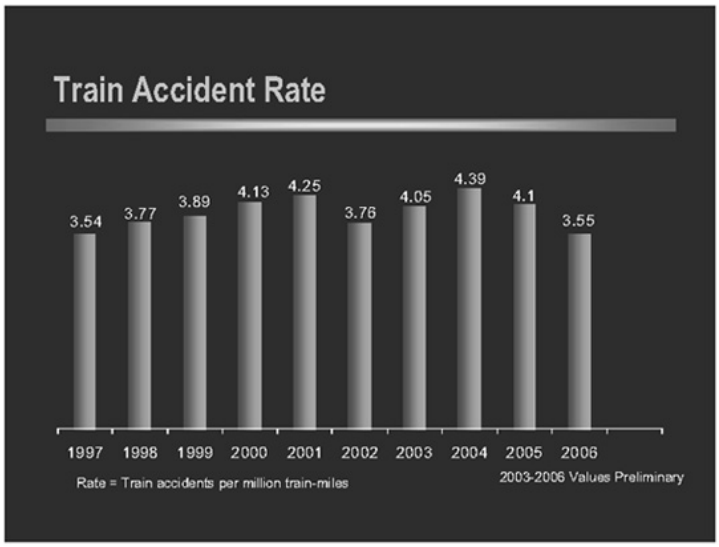


Fewer Train Accidents in 2006

Preliminary statistics (as of February 2006) reveal that in 2006 railroads had 366 fewer train accidents nationwide, or an 11.3 percent reduction from 2005. Specifically, the number of derailments declined 7.3 percent and collisions between trains decreased by 27.1 percent. And, the train accident rate per one million train-miles is near a 10-year low despite significant increases in the volume of train traffic.

The data for 2006 also reveal that train accidents caused by human error—the leading cause of all train accidents—declined 19.0 percent. Train accidents caused by track issues decreased 4.4 percent, and those caused by equipment failure and signal problems fell by 7.6 percent and 27.0 percent, respectively. In addition, last year the number of highway-rail grade crossing collisions fell by 4.7 percent. However, grade crossing fatalities increased by 2.2 percent. And, trespass fatalities, the number one cause of all rail-related deaths, increased by 13.6 percent.





Reducing Human Factor Accidents

ACTION ITEM:	Issue Federal rule addressing top causes of human factor train accidents
STATUS:	Proposed rule published in October 2006
NEXT STEP:	Final rule to be issued in 2007

In October 2006, FRA published a proposed rule intended to reduce the number of human factor-caused train accidents, which have consistently constituted the largest single category of train accidents. FRA believes a Federal regulation prohibiting common human errors that lead to train accidents will provide heightened visibility and operational focus to reduce their frequency of occurrence. The final rule will be issued later this year.

Analysis of train accident data has revealed that a small number of particular kinds of human errors account for an inordinate number of human factor-caused accidents. The leading cause is improperly lined track switches. Other top causes include shoving rail cars without a person on the front of the move to monitor conditions ahead, leaving cars in a position that obstructs (fouls) a track, and failure to secure a sufficient number of handbrakes.

At present, few of these kinds of mistakes are prohibited by Federal regulations. Instead, most are addressed by each railroad's own operating rules, which subject employees who violate them to discipline, including dismissal. Currently, FRA regulations only require railroads to train their employees on these rules and to test them periodically on their compliance with those rules.

The proposed rule seeks to establish greater accountability on the part of railroad management for the administration of railroad programs of operational tests and inspections, and greater accountability on the part of railroad supervisors and employees for compliance with those operating rules that are responsible for approximately half of the train accidents related to human factors. FRA believes this will contribute positively to railroad safety, by emphasizing the importance of compliance with fundamental operating rules and providing FRA a more direct means of promoting compliance.

The final rule is intended to supersede Emergency Order No. 24, which FRA issued in October 2005, in response to an increasing number of train accidents caused by hand-operated, main track switches in non-signaled territory being left in the wrong position. The Emergency Order requires special handling, instruction and testing of railroad operating rules pertaining to hand-operated main track switches in non-signaled territory, and is expected to remain in place until the final rule is issued and becomes effective.

ACTION ITEM:	Establish "Close Call" pilot project to learn from incidents that could have caused a train accident but did not

STATUS:	Begin pilot project data collection February 2007
NEXT STEP:	Expand pilot project to other railroads in 2007

In February 2007, FRA announced that employees at the Nation's largest rail yard in North Platte, Nebraska can now voluntarily and anonymously report "close call" incidents that *could have* resulted in an accident, but did not, without fear of sanction or penalty from their employer or the Federal Government as part of a new rail safety pilot project.

FRA currently requires railroads to report a wide range of accidents and incidents that actually occur. This "close call" information will be analyzed to determine areas of potential risk and to develop solutions to prevent accidents in the future. The aviation industry has a similar program.

The Confidential Close Call Reporting Pilot Project involves Union Pacific Railroad (UP), the Brotherhood of Locomotive Engineers and Trainmen (BLET) and the United Transportation Union (UTU). Each has ratified an agreement with the FRA to allow railroad employees to anonymously contact the U.S. Department of Transportation's Bureau of Transportation Statistics, to report on such potentially dangerous situations.

Examples of "close calls" could be as minor as employees lifting objects that place them at risk for minor injuries, or more serious events, such as a train operating in non-signaled dark territory proceeding beyond its track authority, or a train crew member's failure to properly test an air brake before leaving a yard, which could lead to a runaway train.

"Close call" reports will be taken for 5 years to permit researchers enough time to collect a sufficient number of incidents for thorough analysis. Importantly, a review team will evaluate the reports as they are received in order to make safety recommendations for those that require immediate attention.

FRA plans to extend this pilot project to other rail yards, including BNSF Railway in Lincoln, NE and Canadian Pacific in Portage, WI, and is also currently in discussion with commuter railroads to launch another pilot location.

Addressing Fatigue

ACTION ITEM:	Accelerate research on railroad crew work history to validate a fatigue model for possible use to improve crew scheduling
STATUS:	Final report issued October 2006
NEXT STEP:	FRA seeking authority to regulate railroad worker hours-of-service based on current scientific research February 2007

In November 2006, FRA announced the release of a study which provides a strong scientific rationale for evaluating railroad employee work schedules to address worker fatigue.

Fatigue has long been a fact of life for many railroad operating employees, given their long and often unpredictable work hours and fluctuating schedules. FRA knowledge of the industry's work patterns and the developing science of fatigue mitigation, combined with certain National Transportation Safety Board investigations indicating employee fatigue as a major factor of some train accidents, have persuaded FRA that fatigue plays a role in one out of every four human factor-caused accidents.

The goal of the FRA research was to determine if a fatigue model can accurately and reliably predict an increased risk of human error that could contribute to the occurrence of a train accident. A model for detecting the point at which the risk of fatigue becomes hazardous could become an important part of a railroad's fatigue management plan. FRA expects this information will aid the railroad industry and labor organizations in improving crew scheduling practices in order to reduce that risk. A similar approach is currently utilized by the Department of Defense.

Under the study, researchers analyzed the 30-day work schedule histories of locomotive crews preceding approximately 1,400 train accidents and found a strong statistical correlation between the crew's estimated level of alertness and the likelihood that they would be involved in an accident caused by human factors. In fact, the relationship is so strong that the level of fatigue associated with some work schedules was found to be equivalent to being awake for 21 hours following an 8-hour sleep period the previous night. At this level, train accidents consistent with fatigue, such as failing to stop for red signals, were more likely to occur.

This research provides the basis for an important component of the Administration's rail safety reauthorization proposal submitted to Congress in February 2007 that would grant the FRA statutory authority to regulate railroad worker hours-of-service based upon the most current scientific knowledge available on fatigue management and mitigation.

Improving Track Safety

ACTION ITEM:	Demonstrate vehicle-mounted photo imaging technology to detect cracks in joint bars that can lead to derailments
STATUS:	Field testing began in October 2005 Enhanced technology tested in 2006
NEXT STEP:	Test additional enhancements to increase operating speeds and make the defect detection technology more robust in 2007

Track has consistently been the second leading cause of train accidents accounting for about one-third of all train accidents from 2001 to 2006. Broken joint bars, for example, are a leading cause, but the kinds of cracks in those bars that foreshadow a derailment-causing break are very hard to spot with the naked eye. Similarly, broken rails account for some of the most serious accidents, but the internal flaws that lead to many of those breaks can be detected only by specialized equipment.

FRA is developing an automated high-resolution video joint bar inspection system that can be deployed on a hi-rail maintenance vehicle that will detect visual cracks in joint bars without having to stop the vehicle. In October 2005, a prototype system that inspects joint bars on both sides of each rail was successfully demonstrated. Testing showed that the high-resolution video system detected visual cracks that were missed by the traditional visual inspections.

The system was then enhanced with new features to improve the reliability of joint bar detection and to add capabilities to include the global positioning system coordinates for each joint to facilitate future inspection and identification. Additionally, software was developed to scan the images automatically, detect the cracked joint bar, and then send a message to the operator with an image of the broken joint bar. The new features were implemented and the system was tested and demonstrated in the summer of 2006.

Additional enhancements were made to the system to further improve joint detection reliability and were tested at participating railroads during the spring of 2007. This year, FRA intends to make additional enhancements to increase the operating speed and implement a more rugged, simple, and robust defect detection system.

ACTION ITEM:	Deploy two additional automated track geometry inspection vehicles
STATUS:	T–19 and T–20 track geometry inspection vehicles in operation April 2007
NEXT STEP:	Ongoing Implementation

In late April 2007, FRA began operating its two newest automated track inspection vehicles equipped with state-of-the-art technology to prevent train derailments by detecting subtle track flaws that are difficult to identify by regular means.

The addition of the new equipment increases the FRA fleet of automated inspection vehicles to five, and when fully integrated into the Federal inspection program, will allow this agency to inspect nearly 100,000 track-miles each year, tripling the current capacity. In particular, FRA will be better able to focus its automated track inspection activities on high-volume rail lines that carry hazardous materials and passenger trains as well as improve its ability to follow up more quickly on routes where safety performance by a railroad is substandard.

The new vehicles, known as the T–19 and the T–20, use a variety of technology to measure track geometry flaws such as whether the two rails are level, if the width between the rails is acceptable, and if the shape of each rail meets Federal standards so to avoid derailments. The measurements are recorded in real-time and at operating speed. Problem areas are identified by global positioning system location and shared immediately with the railroad so appropriate corrective actions can be taken in a timely manner.

In May 2005, FRA added the T–18 to its fleet of automated track inspection vehicles that measures for weaknesses in the track structure such as bad crossties or poor connections between the rail and crosstie that could cause the rails to dangerously widen.

Improving Hazardous Materials Safety and Emergency Response Capability

ACTION ITEM:	Identify technology to improve safety in dark (non-signaled) track territory
STATUS:	Switch Point Monitoring System pilot project November 2005
NEXT STEP:	Use success of pilot project to encourage other railroads to install switch position monitoring technology in other dark track territory

In November 2005, FRA partnered with BNSF Railway in a $1 million Switch Point Monitoring System pilot project. The main objective of the project was to develop a low-cost system that electronically monitors, detects, and reports a misaligned switch on the mainline track located in dark, or non-signaled, track territory.

The project involved the installation of wireless communication devices at 49 switches along a 174-mile section of non-signaled BNSF track between Tulsa and Avard, Oklahoma. Train dispatchers at an operations center in Fort Worth, Texas, monitor the devices to identify when the hand-operated switches are set in the wrong position. If a switch is misaligned, the dispatcher directs a train to stop until railroad crews in the field check the switch and confirm it is safe to proceed. No unsafe failures of the system have been reported to date.

As a result of the successful pilot project, BNSF has now developed technology so dispatchers can remotely control the operation of the switch in addition to simply monitoring it. And, the railroad has installed the switch monitoring technology on at least one other of its dark territory lines and has plans to expand it use elsewhere on its rail network.

ACTION ITEM:	Ensure emergency responders have access to key information about hazardous materials transported by rail
STATUS:	Rail hazmat lists available to first responders March 2005 Rail hazmat accident pilot project with major railroad July 2005
NEXT STEP:	Monitor new rail hazmat pilot project with short line and regional railroads December 2006

Emergency responders have access to a wide variety of information regarding hazardous materials transport by rail. The Association of American Railroads (AAR) offers hazardous materials incident response training and the American Chemistry Council has a program that familiarizes local emergency responders with railroad equipment and product characteristics. In addition, the U.S. DOT Pipeline and Hazardous Materials Safety Administration publishes the *Emergency Response Guidebook* and distributes Federal grants to states to train emergency personnel.

In March 2005, with FRA encouragement, the AAR amended its Recommended Operating Practices for Transportation of Hazardous Materials (Circular No. OT–55–G) to expressly provide that local emergency responders, upon written request, will be provided with a ranked listing of the top 25 hazardous materials transported by rail through their community. This is an important step to allow emergency responders to plan, and better focus their training, for the type of rail-related hazardous materials incident that they would be more likely to encounter.

In July 2005, again with FRA encouragement, CSX Transportation and CHEMTREC (the chemical industry's 24-hour resource center for emergency responders) entered into an agreement to conduct a pilot project designed so that if an actual hazardous materials rail accident or incident occurs, CHEMTREC will have immediate access to CSX computer files regarding that specific train, including the type of hazardous materials being carried and their exact position within the train. During the 6-month pilot project there was minimal opportunity to effectively test the program so all parties agreed to continue the arrangement for an additional 18-month period.

In December 2006, another pilot project began to evaluate the use of Railinc Corporation's Freightscope, a program that provides equipment search capabilities for hazmat shipments. The system was installed at CHEMTREC, and it has the potential to more rapidly provide information about hazmat shipments on short line and regional railroads to CHEMTREC to improve information availability and reduce delays in emergency response.

ACTION ITEM:	Accelerate research into hazardous materials rail tank car structural integrity
STATUS:	Funding added to complete research in 2007 rather than 2008 Tank car research agreement with rail and chemical industry January 2007
NEXT STEP:	Research to be completed in Fall 2007

In January 2007, FRA executed a formal Memorandum of Cooperation (MOC) with rail and chemical industry leaders to share research data and resources to aid in developing new Federal design standards for stronger and safer hazardous materials tank cars in 2008. The goal is to move beyond incremental design changes and apply the latest research and advanced technology to provide increased safety for rail shipments posing the greatest potential safety risk.

The MOC with Dow Chemical Company, Union Pacific Railroad and the Union Tank Car manufacturing company provides for extensive information sharing and cooperation between ongoing FRA and industry research programs to improve the safety of rail shipments of hazardous commodities such as toxic inhalation hazards and high-risk gases and liquids.

The focus of FRA is to strengthen the structural integrity of the tank car including evaluating the type of material and thickness of the outer shell and the type and design of the insulation material located between the outer shell and the inner tank that contains the hazardous material. This is intended to reduce the probability that a collision, such as a side impact, will result in release of the hazardous commodity.

In addition, FRA is closely evaluating technology such as push-back couplers, energy absorbers, and anti-climbing devices designed to prevent a derailment of the tank car by keeping it upright and on the tracks after an accident.

Also, in collaboration with the railroad industry through the Association of American Railroads Tank Car Committee, FRA is conducting research involving three major activities: (1) modeling of dynamic forces acting on hazmat tank cars in accidents and assessing the subsequent damage, (2) material testing to determine fracture behavior of tank car steels, and (3) risk ranking to prioritize the tank cars that are perceived to be most vulnerable to catastrophic failure. Originally scheduled to be finished in 2008, FRA has provided an additional $400,000 to move the target completion date for this research forward to August 2007.

The first project, modeling of dynamic forces in train accidents, is ongoing and will assess items including train makeup, train speed, configuration of rail car pile-up, the effect of having different types of impacting objects (*i.e.,* couplers and wheels) strike different parts of various tank car models, and the effect of various levels of pressurization, among other elements. It is expected to be completed August 2007.

The second project, material testing for dynamic fracture toughness, is testing the amount of stress required to propagate an existing flaw on the tank car steel and evaluating the ability of the steel to resist fracture. Researchers at the Southwest Research Institute laboratories in San Antonio, Texas are testing 34 steel samples from tank cars segregated by decades of manufacture (*e.g.,* 1960s, 1970s, and 1980s). This work is expected to be completed in July 2007.

The third project, ranking the vulnerability of hazardous materials tank cars to catastrophic failure, represents the end purpose of this research. Risk is a complex concept, and therefore the methods used to rank the factors that affect risk vary in complexity. Preliminary low-level analyses are ongoing. Higher-level analysis can be conducted after the research on dynamic forces and testing for fracture toughness has been completed. The final hazardous materials tank car risk analysis is to be completed by September 2007.

And, since May 2006, FRA has held three public meetings in cooperation with the Pipeline and Hazardous Materials Safety Administration (PHMSA) to comprehensively review design and operational factors that affect hazmat rail tank car safety. The two agencies will utilize a risk management approach to identify ways to enhance the safe transportation of hazardous materials including, tank car design, manufacture, and requalifications to keep a tank car in service; operational issues such as human factors, track conditions and maintenance, wayside hazard detectors, and signals and train control systems; and emergency response.

In addition, in December 2006, PHMSA issued a proposed rule that would require railroads to perform a safety and security risk analysis to determine the most appropriate route for shipping certain high-risk hazardous materials. Under the proposed rule, rail carriers would be required to compile annual data clearly identifying the total number and type of hazardous materials shipments transported over each route and use the information to select the route that provides the highest possible degree of safety and security. The proposed rule would require shippers to develop consistent plans for safely and securely storing hazardous materials while en route, and ensure that within a specified time period a rail carrier informs the final recipient that it has delivered a hazardous materials rail car.

Further, in September 2006, FRA began a project to test sample tank car panels with various coatings to determine their ability to prevent penetration from small arms fire, as well as their ability to self-seal and, thereby, mitigate the severity of any incident. FRA developed the project in coordination with the AAR and the U.S. Department of Homeland Security, which came up with the idea of applying to tank cars a protective coating like that used to enhance the armor protection of military vehicles in Iraq.

Strengthening the FRA Compliance Program

ACTION ITEM:	Make better use of data to direct FRA safety inspectors and other resources to where problems are likely to arise
STATUS:	New National Inspection Plan fully implemented March 2006 Proposal to increase civil penalty guideline amounts December 2006
NEXT STEP:	Ongoing implementation and refinement of NIP process

The National Inspection Plan (NIP) is a strategic inspection resource allocation program that uses predictive indicators to assist FRA in conducting inspection and enforcement activities within a given geography or on a particular railroad. In essence, it makes use of existing inspection and accident data in such a way to identify potential safety "hot spots" so they can be corrected before a serious accident occurs.

In April 2005, the FRA safety disciplines of Operating Practices (*i.e.,* Human Factors), Track, and the Motive Power & Equipment began operating under the NIP since combined, these factors account for over 80 percent of all train accidents. The two other safety disciplines of Signal & Train Control and Hazardous Materials started in March 2006. A reduction in both the number of accidents and the accident rate is expected once the NIP has had time to take its full effect and FRA refines its application to real-world experience.

The first year under the NIP was a time of learning by FRA regional offices and field inspectors on how to understand and use the information. During the second year, there has been a noticeable increase in sophistication and initiative by the regions and they are making adjustments to the NIP where needed and managing resources in a proactive manner to meet the targets in the plan. There is an increased willingness to break with past inspections patterns and to focus more effort on railroads with the most safety problems. And, FRA has improved the planning phase of the NIP by implementing a mid-year review process.

Regarding enforcement efforts, FRA announced in December 2006 that the civil penalty guideline amounts assessed against railroads for violating Federal rail safety regulations would at least double for most violations. FRA evaluated each of the more than 2,000 regulations using a five-point severity scale. The measure takes into consideration the likelihood that a rail accident or graver consequences will occur as a result of failing to comply with a particular section of the regulations. The more severe the potential outcome of violating a rule, the higher the fine. The agency's new civil penalty guidelines are to become effective later this year.

Fostering Further Improvements in Highway-Rail Grade-Crossing Safety

ACTION ITEM:	Build partnerships with state/local agencies and emphasize railroad responsibilities concerning safety at highway-rail grade crossings
STATUS:	Safety advisory issued May 2005 Public meetings on private grade crossings safety begin August 2006
NEXT STEP:	Final public meeting on private grade crossing safety July 2007

Deaths in highway-rail grade crossing accidents are the second-leading category of fatalities associated with railroading (trespasser fatalities are the leading category). The number of grade crossing deaths has declined substantially and steadily over time. However, the growth in rail and motor vehicle traffic continues to present challenges.

In August 2006, FRA held the first in a series of public meetings across the country (MN, NC, LA, and CA) to foster a national discussion on improving safety at the Nation's largely unregulated private highway-rail grade crossings. Each year, about 400 accidents, and from 30 to 40 fatalities, occur at the over 94,000 private crossings used by both freight and passenger trains.

Private crossings are owned by private property owners primarily to allow roadway access over railroad tracks to residential, commercial, or agricultural areas not meant for general public use. The FRA is seeking comments on topics such as determining when a private crossing has a public purpose and whether the State or Federal Government should assume a greater role in setting safety standards.

Establishing responsibility for safety at private crossings is one of the primary goals of the U.S. Secretary of Transportation's *Highway-Rail Grade Crossing Safety and Trespass Prevention Action Plan* issued in 2004. A final public meeting is scheduled for July 2007 in New York.

In May 2005, FRA issued Safety Advisory 2005–03 describing the roles of the Federal and state governments and of the railroads in grade crossing safety. It also specifically reminds railroads of their responsibilities to properly: report any accident involving grade crossing signal failure; maintain records relating to credible reports

of grade crossing warning system malfunctions; preserve the data from all locomotive mounted recording devices following grade crossing collisions; and cooperate fully with local law enforcement authorities during their investigations of such accidents. FRA also offers assistance to local law enforcement authorities in the investigation of highway-rail grade crossing collisions where information or expertise within FRA control is required to complete the investigation.

ACTION ITEM:	Assist Louisiana create Highway-Rail Grade Crossing Safety Action Plan
STATUS:	Louisiana approved action plan April 2006
NEXT STEP:	Work with other states to develop grade crossing safety action plans

In March 2005, FRA began working with the State of Louisiana in developing its own action plan for highway-rail crossing safety. Louisiana has the distinction of consistently being among the top five states in the Nation with the highest number of grade crossing collisions and fatalities. The action plan focuses on reducing vehicle-train collisions at grade crossings where multiple collisions have occurred. Louisiana approved its action plan in April 2006.

In June 2006, in part as a result of efforts to create this action plan, the Louisiana Department of Transportation and Development announced an agreement with Kansas City Southern Railway to make safety improvements at 300 public grade crossings. Over a 5-year period, more than $16 million will be invested to upgrade warning devices, replace cross buck signage, and close redundant crossings.

FRA is now working with Texas to develop a similar, State-specific action plan, and encourages other states with high numbers of grade crossing accidents and fatalities to do the same.

Other FRA Initiatives to Improve Rail Safety

During the past year, FRA has undertaken several initiatives to improve rail safety above and beyond the specific elements of the *Action Plan.* These other activities include advancing the development and deployment of safety technology such as Positive Train Control (PTC) and Electronically Controlled Pneumatic (ECP) brake systems, enhancing passenger rail safety, and submitting to Congress a comprehensive bill that seeks to reauthorize FRA for 4 years and strengthen the Federal rail safety program.

Positive Train Control (PTC)

In January 2007, FRA announced approval of the first PTC system intended for general use by the freight railroads capable of automatically controlling train speed and movements to prevent certain accidents, including train collisions. This is a major achievement that marks the beginning of a new era of rail safety.

FRA approved the BNSF Railway's Product Safety Plan for its Electronic Train Management System (ETMS), an overlay technology that augments and supplements existing train control methods. ETMS employs both digital communications and a global positioning system to monitor train location and speed within track authority limits. The ETMS system includes an in-cab electronic display screen that will first warn of a problem and then automatically engage the train's brake system if a locomotive engineer fails to act in accordance with operating instructions.

The FRA action allows BNSF to implement ETMS on 35 specific freight lines in 17 states, and requires appropriate employee training before it can be initiated. It is expected that the rail industry will increasingly embrace and adopt PTC technology as other railroads—among them, Union Pacific, Norfolk Southern, and CSX Transportation—are each making significant strides to develop PTC systems.

In addition to its safety benefits, PTC also can support rail operations by increasing the capacity of high-density rail lines, improving overall efficiency.

In 2005, FRA revised Federal signal and train control regulations to facilitate and enable development and deployment of PTC technology.

Electronically Controlled Pneumatic (ECP) Brakes

In August 2006, FRA released a report on the business benefits of Electronically Controlled Pneumatic (ECP) brake systems that have the capability to significantly improve train control, reduce derailments, and shorten stopping distances. ECP brakes are to trains what anti-lock brakes are to automobiles—they provide better control.

ECP brakes apply uniformly and virtually instantaneously on every rail car throughout a train and not sequentially from one car to the next as is done with conventional air brake systems. The full train brake application, and an ability to gradually apply and release the brakes, provides for vastly improved train control and enhances safety. FRA believes ECP brake systems are the most significant development in railroad brake technology since the 1870s.

ECP brake technology can help avert train derailments caused by sudden emergency brake applications, prevent runaway trains caused by loss of brake air pressure, and shorten train stopping distances up to 60 percent under certain circumstances. ECP brake systems also are capable of performing continual electronic self-diagnostic 'health checks' of the brakes to identify maintenance needs.

At the time the benefit report was issued, FRA announced its intention to propose revisions to the Federal rail safety regulations in 2007 to facilitate use of ECP brakes. As FRA continues to draft the proposed rule changes, the agency has encouraged railroads to submit their own plans to install ECP brakes on a limited basis. In March 2007, FRA approved a joint request by BNSF Railway and Norfolk Southern Railway to install ECP brakes on trains to demonstrate the safety and efficacy of the technology in revenue service. With the approval, trains equipped with ECP brakes will be able to safely travel up to 3,500 miles without stopping to undergo certain routine brake inspections, more than double the distance currently allowed by Federal regulations. It is expected that the railroads will use ECP brakes on container-only trains from West Coast ports to Chicago and on trains carrying coal from the Powder River Basin fields in Wyoming to southern and eastern power plants.

FRA placed several conditions on the approval, including requirements that the railroads clearly define a process for handling brake problems discovered en route; ensure that ECP brake inspections be performed by qualified individuals; and provide appropriate training to crew members. Proper safeguards will be in place and will permit FRA to gather extensive data that could be used in developing its proposed rulemaking.

In addition, ECP brakes support the U.S. Department of Transportation's *National Strategy to Reduce Congestion on America's Transportation Network*. Better brakes mean longer trains can move more freight faster and safer to help reduce congestion on America's rail system.

Passenger Rail Safety Initiatives

While the *Action Plan* focuses on improving the safety of freight railroad operations, FRA has also been making important progress on passenger rail safety during the past 2 years.

In August 2006, FRA published proposed new passenger rail safety standards to improve evacuation of passengers from trains, provide additional ways for rescuers to access the passenger car in case of an emergency, and enhance onboard emergency communication systems. FRA is preparing the final rule, which is expected to be published in 2007.

In addition, FRA is currently developing a proposed rule focusing on passenger car emergency signage, low-location exit path marking, and emergency lighting. FRA is also preparing a proposed rule to enhance structural strength requirements for the front of cab cars and multiple unit locomotives. These enhancements would include the addition of "energy deformation" requirements specified in revised APTA standards for front-end collision posts and corner posts for this equipment.

In February 2007, FRA held the first meeting of its Railroad Safety Advisory Committee Task Force to review passenger safety at stations with high-level platforms where there are gaps between passenger car doorways and the platform. FRA has made this issue a priority. The Task Force will also address safety concerns associated with other matters directly affecting passenger safety on or around station platforms, such as express trains through stations, and make any necessary recommendations to FRA for regulatory action.

In May 2006, FRA unveiled the Passenger Rail Vehicle Emergency Evacuation Simulator, or "Rollover Rig," which can rotate a full-sized commuter rail car up to 180 degrees to simulate passenger train derailment scenarios. It provides researchers the ability to test new passenger rail evacuation strategies and safety components such as emergency lighting, doors, and windows and gives first responders a unique training tool.

And, in March 2006, FRA successfully conducted the final in a series of full-scale passenger train collisions at its testing facility in Pueblo, Colorado, to test new Crash Energy Management technology. The passenger train was equipped with crush zones which absorb the force of a crash to better protect passenger seating areas and operators' spaces. The crush zones have stronger end frames that act as bumpers to distribute crash forces throughout an entire train so passengers feel less of the impact. Other devices tested include newly designed couplers, which join two cars together and are built to retract and absorb energy to keep trains upright on the tracks during a crash. New passenger seats and chairs designed with special padding and crushable edges also were tested.

Proposed FRA Rail Safety Legislation

In February 2007, FRA submitted to Congress the "Federal Rail Safety Accountability and Improvement Act" (H.R. 1516 and S. 918) to reauthorize the agency for 4 years and to strengthen its safety program. The proposed bill's major provisions include: giving FRA authority to regulate railroad worker hours-of-service; providing greater emphasis by FRA and railroads to establish risk reduction programs; and improving highway-rail grade crossing safety.

A major challenge is to ensure that train crewmembers have adequate opportunity to rest, are free of disorders that can disrupt sleep, and are fully engaged in maintaining alertness. The current statutory provisions—first enacted in 1907—that govern the hours-of-service of railroad train crews, dispatchers, and signal maintainers are antiquated and inadequate to address present realities. The FRA proposal would replace railroad hours-of-service laws with comprehensive, scientifically-based regulations and make use of a century worth of learning on sleep-wake cycles and fatigue-induced performance.

Under the proposal, the maximum on-duty or minimum off-duty hours would be established by FRA, much like hours-of-service standards are set for airline pilots by the Federal Aviation Administration and for truck drivers by the Federal Motor Carrier Safety Administration. If given the authority, the FRA Railroad Safety Advisory Committee, made up of railroad management, labor representatives and other key stakeholders, will review the issue and develop recommendations on new hours-of-service limits based on current, sound science before any changes are made.

To achieve additional safety improvements, the FRA proposal also will supplement traditional safety efforts with the establishment of risk reduction programs. FRA will place increased emphasis on developing methods to systematically evaluate safety risks in order to hold railroads more accountable for improving the safety of their own operations, including risk management strategies and implementing plans to eliminate or minimize the opportunity for workers to make errors which can result in accidents.

Other provisions in the FRA proposal include requiring states and railroads to update the National Highway-Rail Grade Crossing Inventory on a regular basis to ensure current information is available for hazard analysis in determining where Federal highway safety improvement funding is directed. In addition, the bill seeks to encourage the creation and deployment of new, cost-effective technology at the Nation's approximately 80,000 public highway-rail grade crossings that still lack active warning devices.

Furthermore, the proposed legislation would expand the authority of the FRA to disqualify any individual as unfit for safety-sensitive service for violation of Federal regulations related to transporting hazardous materials, among other items.

Mr. HAMBERGER. I think a lot of it does devolve to technology, the technology that we're testing and trying to develop out of Pueblo with rail money, as well as Federal Railroad Administration money. But when you take a look at the biggest problem, the biggest safety issue for railroads, is grade-crossing accidents. And, I think, that's where we have to focus our effort. Senator Carper, you mentioned it, the GAO report, I believe the number is 93 percent of all of those accidents are because of driver bad judgment. And I would love to see some sort of major commitment in the next surface transportation bill, that would try to have the national highway system become grade-crossing free. The only really safe grade crossing is a closed grade crossing.

Now, that's a major goal. But it would be a worthy goal. And, as we work our way toward that, the new technologies that are out there, the quad gates, or the mediums that Mr. Solow referred to, that are being implemented in Southern California—we'd really like to see a lot—a major effort—in grade-crossing safety. And I'm not sure, frankly, Senator Carper, that the states agree that that is as much of a priority as I see it. I do know that the former head of NHTSA testified during the last highway bill that he did not want the Section 130 Grade Crossing Program specifically funded, he wanted a block grant, because he thought that maybe there

were other higher priority safety programs than grade crossing. But, from our vantage point, I believe that that's where we could spend a great deal of time and resources.

Senator THUNE. How many of the accidents occur at night versus day? Do you know what that percentage is?

Mr. HAMBERGER. I do not have that.

Mr. BOARDMAN. I don't have it off the top of my head. I don't know if we keep the data exactly that way, but we'll take a look.

[The information previously referred to follows:]

Please see the following charts, which show the agency's highway-rail crossing accident statistics, based on railroads' required reports to FRA on Form FRA F 6180.57, for the more than 7 years from 2000 through June of 2007:

All Highway-Rail Crossing Incidents

	Total		Dawn		Day		Dusk		Dark	
	Nbr	%	Nbr	%	Nbr	%	Nbr	%	Nbr	%
2000	3,502	15.1	97	2.8	2,209	63.1	112	3.2	1,084	31.0
2001	3,237	14.0	74	2.3	2,083	64.3	91	2.8	989	30.6
2002	3,077	13.3	63	2.0	1,973	64.1	98	3.2	943	30.6
2003	2,977	12.9	70	2.4	1,902	63.9	119	4.0	886	29.8
2004	3,077	13.3	64	2.1	1,909	62.0	107	3.5	997	32.4
2005	3,053	13.2	79	2.6	1,908	62.5	93	3.0	973	31.9
2006	2,923	12.6	72	2.5	1,837	62.8	75	2.6	939	32.1
2007	1,311	5.7	26	2.0	812	61.9	44	3.4	429	32.7
Total	23,157	100.0	545	2.4	14,633	63.2	739	3.2	7,240	31.3

All Highway-Rail Crossing Incidents

	Total		Dawn/Dusk		Day		Dark	
	Nbr	%	Nbr	%	Nbr	%	Nbr	%
2000	3,502	15.1	209	6.0	2,209	63.1	1,084	31.0
2001	3,237	14.0	165	5.1	2,083	64.3	989	30.6
2002	3,077	13.3	161	5.2	1,973	64.1	943	30.6
2003	2,977	12.9	189	6.3	1,902	63.9	886	29.8
2004	3,077	13.3	171	5.6	1,909	62.0	997	32.4
2005	3,053	13.2	172	5.6	1,908	62.5	973	31.9
2006	2,923	12.6	147	5.0	1,837	62.8	939	32.1
2007	1,311	5.7	70	5.3	812	61.9	429	32.7
Total	23,157	100.0	1,284	5.5	14,633	63.2	7,240	31.3

Note that the figures for 2007 are for only January through June and very preliminary. A copy of the FRA reporting form is also provided for the record; see item 22 "Visibility," which is highlighted. The first chart breaks down the more than 23,000 crossing accidents reported to FRA into four groups, according to whether the accident occurred at dawn, in daytime ("day"), at dusk, or at nighttime ("dark"). The second chart breaks down the accidents into three groups, combining accidents at dawn with accidents at dusk, because dawn and dusk are both periods of low light. As you can see from both charts, the broken-down percentages are fairly constant across the multiple-year time period: about 63 percent of the crossing accidents happen during daylight hours; 31 percent, during periods of darkness; and about 6 percent, during the low-light periods of dawn and dusk.

ATTACHMENT

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION (FRA)

HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT

OMB Approval No.: 2130-0500

1. Name of Reporting Railroad | 1a. Alphabetic Code | 1b. Railroad Accident/Incident No.

2. Name of Other Railroad Involved in Train Accident/Incident | 2a. Alphabetic Code | 2b. Railroad Accident/Incident No.

3. Name of Railroad Responsible for Track Maintenance *(single entry)* | 3a. Alphabetic Code | 3b. Railroad Accident/Incident No.

4. U. S. DOT Grade Crossing Identification Number | 5. Date of Accident/Incident month day year | 6. Time of Accident/Incident AM PM

7. Nearest Railroad Station | 8. Division | 9. County | 10. State Abbr. Code

11. City *(if in a city)* | 12. Highway Name or Number Public Private

Highway User Involved

13. Type
A. Auto B. Truck C. Truck-trailer D. Pick-up truck E. Van F. Bus G. School bus H. Motorcycle J. Other motor vehicle K. Pedestrian M. Other *(specify)* — Code

14. Vehicle Speed *(est. mph at impact)*

15. Direction *(geographical)* 1. North 2. South 3. East 4. West — Code

16. Position 1. Stalled on crossing 2. Stopped on crossing 3. Moving over crossing 4. Trapped — Code

20a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway user 2. Rail equipment 3. Both 4. Neither — Code

Rail Equipment Involved

17. Equipment
1. Train *(units pulling)* 2. Train *(units pushing)* 3. Train *(standing)* 4. Car(s) *(moving)* 5. Car(s) *(standing)* 6. Light loco(s) *(moving)* 7. Light loco(s) *(standing)* 8. Other *(specify)* A. Train pulling- RCL B. Train pushing- RCL C. Train standing- RCL — Code

18. Position of Car Unit in Train

19. Circumstance 1. Rail equipment struck highway user 2. Rail equipment struck by highway user — Code

20b. Was there a hazardous materials release by 1. Highway user 2. Rail equipment 3. Both 4. Neither — Code

20c. State here the name and quantity of the hazardous material released, if any.

21. Temperature *(specify if minus)* °F

22. Visibility *(single entry)* 1. Dawn 2. Day 3. Dusk 4. Dark — Code

23. Weather *(single entry)* 1. Clear 2. Cloudy 3. Rain 4. Fog 5. Sleet 6. Snow — Code

24. Type of Equipment Consist *(single entry)*
1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s) 9. Maint./inspect. car A. Spec. MoW Equip. — Code

25. Track Type Used by Rail Equipment Involved 1. Main 2. Yard 3. Siding 4. Industry — Code

26. Track Number or Name

27. FRA Track Class (1-9, X)

28. Number of Locomotive Units

29. Number of Cars

30. Consist Speed *(Recorded speed, if available)* R - Recorded E - Estimated MPH — Code

31. Time Table Direction 1. North 2. South 3. East 4. West — Code

32. Type of Crossing Warning
1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig wags 5. Hwy. traffic signals 6. Audible 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other *(specify)* 12. None
Code(s)

33. Signaled Crossing Warning *(See reverse side for instructions and codes)* — Code

34. Whistle Ban 1. Yes 2. No 3. Unknown — Code

35. Location of Warning 1. Both sides 2. Side of vehicle approach 3. Opposite side of vehicle approach — Code

36. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown — Code

37. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown — Code

38. Driver's Age

39. Driver's Gender 1. Male 2. Female — Code

40. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown — Code

41. Driver 1. Drove around or thru the gate 2. Stopped and then proceeded 3. Did not stop 4. Stopped on crossing 5. Other *(specify)* — Code

42. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown — Code

43. View of Track Obscured by *(primary obstruction)* 1. Permanent structure 2. Standing railroad equipment 3. Passing train 4. Topography 5. Vegetation 6. Highway vehicles 7. Other *(specify)* 8. Not obstructed — Code

Casualties to:	Killed	Injured
46. Highway-Rail Crossing Users		
49. Railroad Employees		
52. Passengers on Train		

44. Driver was 1. Killed 2. Injured 3. Uninjured — Code

45. Was Driver in the Vehicle? 1. Yes 2. No — Code

47. Highway Vehicle Property Damage *(est. dollar damage)*

48. Total Number of Highway-Rail Crossing Users *(include driver)*

50. Total Number of People on Train *(include passengers and train crew)*

51. Is a Rail Equipment Accident/Incident Report Being Filed? 1. Yes 2. No — Code

53a. Special Study Block

53b. Special Study Block

54. Narrative Description *(Be specific, and continue on separate sheet if necessary)*

55. Typed Name and Title | 56. Signature | 57. Date

NOTE: This report is part of the reporting railroad's accident report pursuant to the accident reports statute and, as such shall not " be admitted as evidence or used for any purpose in any suit or action for damages growing out of any matter mentioned in said report . . . . " 49 U.S.C. 20903. See 49 C.F.R. 225.7 (b).

FORM FRA F 6180.57 (Revised March 2003)

*** NOTE THAT ALL CASUALTIES MUST BE REPORTED ON FORM FRA F 6180.55A**

INSTRUCTIONS FOR COMPLETING BLOCK 33

Only if Types 1 - 6, Item 32 are indicated, mark in Block 33 the status of the warning devices at the crossing at the time of the accident, using the following codes:

1. Provided minimum 20-second warning.
2. Alleged warning time greater than 60 seconds.
3. Alleged warning time less than 20 seconds.
4. Alleged no warning.
5. Confirmed warning time greater than 60 seconds.
6. Confirmed warning time less than 20 seconds.
7. Confirmed no warning.

If status code 5, 6, or 7 was entered, also enter a letter code explanation from the list below:

A. Insulated rail vehicle.

B. Storm/lightning damage.

C. Vandalism.

D. No power/batteries dead.

E. Devices down for repair.

F. Devices out of service

G. Warning time greater than 60 seconds attributed to accident-involved train stopping short of the crossing, but within track circuit limits, while warning devices remain continuously active with no other in-motion train present.

H. Warning time greater than 60 seconds attributed to track circuit failure (e.g., insulated rail joint or rail bonding failure, track or ballast fouled, etc.).

J. Warning time greater than 60 seconds attributed to other train/equipment within track circuit limits.

K. Warning time less than 20 seconds attributed to signals timing out before train's arrival at the crossing/island circuit.

L. Warning time less than 20 seconds attributed to train operating counter to track circuit design direction.

M. Warning time less than 20 seconds attributed to train speed in excess of track circuit's design speed.

N. Warning time less than 20 seconds attributed to signal system's failure to detect train approach.

P. Warning time less than 20 seconds attributed to violation of special train operating instructions.

R. No warning attributed to signal system's failure to detect the train.

S. Other cause(s). Explain in Narrative Description.

Mr. TOLMAN. Senator, I applaud you for that question, because I'm sitting here, and there are about a million different ideas popping into my head.

But I sincerely think that, you know, if you look at the history of the railroad industry, it's been one of the oldest around, oldest businesses around. And for years when I first hired out in the railroad in, you know, 1971, it was a wonderful place to work, and you have a camaraderie between management and labor. And everybody worked together for the goal to move a commodity from one end to another.

And over the years, that's all changed. And it changed for a variety of reasons, and there's nothing that you can pinpoint on it.

However, that needs to swing back the other way. It needs to—management and labor need to work cooperatively together, and thoughtfully together, and you know, in Mr. Boardman's testimony, he says that we're talking about the fatigue abatement issues, and he says in his, something to the statement that, you know, they've had an opportunity to work on this issue for the last 12, 13 years, and none of us have done that. Why haven't we done it? Because there's not a commitment. You know why we have a commitment? And you know why we're talking about this today? Because Congress has stepped up to the plate and said, "Something needs to be done." And thank God it did, you have. Because it's time to do something about safety.

It's not only a culture change, I mean, we're talking about, you know, issues of—grade-crossing issues. It's not only the, a thousand deaths or accidents or incidents which happen each year—almost a thousand, it's a nine hundred and some-odd number. But, what do we do about the locomotive engineer and train crew that's involved in that accident? We're not discussing this. This should be part of this legislation.

What happens, some railroads you have a critical incidents stress debriefing programs that help the engineer and the conductor, and any other crew members that has to deal with the trauma involved there. A lot of our engineers and train crews are dealing with PTSD, Post Traumatic Stress Disorder, brought on, you know, it goes back to the Vietnam War, that's when it was first, you know, brought on.

Senator CARPER. We need to be fair.

Mr. TOLMAN. Absolutely. Thank you.

Senator LAUTENBERG. We have a vote that's started here. I want to thank Senator Thune. I want to ask one question to Mr. Boardman and Mr. Hamberger—what's, what's going to be done by the Administration to achieve interoperability for Positive Train Control systems?

And, for Mr. Hamberger, what steps, if any, is the industry going to do to develop it? If you can, in fairly short form, please.

Mr. BOARDMAN. Well, I think we've made progress, Senator, with BNSF and the ETMS system that they believe works as a business model. We're going to the second element of that—it was approved in their Product Safety Plan in January of this year, and the requirement here is that it has to be interoperable with the other railroads. We see CSX, we see Norfolk Southern, we see UP, doing just that. So, we believe that's going to happen.

Ed?

Mr. HAMBERGER. Mr. Chairman, our technical people are working very closely together, making sure that as these systems come online, they are interoperable, there are some technical challenges, that is one of the reasons I'm not sure we're comfortable with a specific deadline in the legislation, but we are committed to making sure that happens.

I would just ask you to take a look at my written testimony, where I do point out that one of the challenges is having enough spectrum to run these systems, and make sure that that spectrum goes throughout the entire ribbon of the network. But we're working on that.

And, finally, I'd ask your consent to put into the record a compendium of fatigue management efforts that the industry has been undertaking, we have not been sitting on our hands for the last 10 years with the employees.

Senator LAUTENBERG. Without objection.

[The information referred to is retained in Committee files.]

Senator LAUTENBERG. And to say thanks to all of you, if Senator Carper has another question, please feel free to ask.

Just to close, by saying that we're expecting so much from the railroad industry, from the freight industry, in the future. That, when I hear that 80,000 people are sought for jobs over the next several years, that's incredible. But, we're going to need your help to keep this country running.

I conclude my remarks, Senator Carper, you're in charge.

Senator CARPER. Thanks very much.

I'd like to call up Senate bill number——

[Laughter.]

Senator CARPER. Just kidding.

I do have a statement I'd like to offer for the record, if I could.

[The prepared statement of Senator Carper follows:]

PREPARED STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM DELAWARE

Thank you, Mr. Chairman, for holding this hearing on this very important issue.

I have watched over the last decade with great pleasure as people, businesses, and policymakers have turned their attention back to rail as an affordable and efficient transportation alternative.

As we try to reduce highway congestion and address air pollution that threatens public health and the environment, rail has arisen as an effective way to address our transportation needs.

However, increased rail traffic has resulted in increased accidents, some of which have received a great deal of attention in the press.

In Delaware, there has been a fair amount of attention given to rail safety issues by our papers in recent months. And the concern that more rail service brings more accidents has generated some opposition to additional investment in rail. This is something none of us wants to see.

Addressing these concerns early is important both for public safety and to ensure that we continue to invest in this very important part of our national transportation system.

Senator CARPER. And also I had one last quick question. This is more of a local question for Delaware. And I have only one major statewide newspaper in our small State, and they ran a series of articles not long ago about rail safety. And I just want to touch on that, if I may, and then we'll run and vote.

One of the concerns that I have heard expressed by residents of my State—after the series of articles ran, has to do with the parking of rail cars containing hazardous materials near residential communities.

I guess my question is, what are railroads doing about that now? What more could be done? And, what if anything, should our government do? Whether it's Federal, State and/or local governments do—to address, or reduce the concerns that surround that kind of practice?

Mr. HAMBERGER. Senator, the Transportation Security Administration has promulgated a regulation, and we have also taken—while that is pending—voluntary action to reduce the amount of time that a loaded hazardous material tank car sits in a yard, by

25 percent each year. And that we have also committed to making sure that those tank cars will be attended, that is to say, not just sitting out there, and that they will be placed, within the rail yard, in as safe a place as possible. That is to say, if there is one end of the rail yard near a hospital, at the other end of the rail yard a forest, it's going to be placed up there by the forest, not by the hospital.

And, of course, as you know, we are committed to moving hazardous materials as safely as possible, and we do have a pretty good record of doing that, 99.99 percent. But the TSA does have about 24 or 25 action items that we are cooperating with them on.

Senator CARPER. All right. Thank you.

Anyone else like to respond to that question? No?

Well, all right, well, fair enough. Thank you very, very much.

Senator LAUTENBERG. If there is any information that any of you want to submit, we'd be pleased to receive it, and we thank you all for being excellent witnesses. This has been a very good hearing, in my judgment, thank you.

[Whereupon, at 3:40 p.m., the hearing was adjourned.]

A P P E N D I X

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN F. KERRY TO HON. JOSEPH H. BOARDMAN

Question 1. In your written testimony you admonish Congress against setting specific hours-of-service reforms in statute even with exceptions which this legislation makes. Instead, you recommend that Congress grant you the authority to issue "flexible regulations based on a modern, scientific understanding of fatigue." What scientific endeavors is the FRA currently undertaking to better understand worker fatigue and how would you apply this to hours-of-service reform?

Answer. As Appendix B to my written testimony describes, research has shown that the quality of sleep varies with the time of day. Because it is more difficult to sleep during the day, employees whose off-duty periods occur during the day average less sleep than those who are predictably off-duty during nighttime hours. Yet, the current hours-of-service laws, and any pending proposals to establish specific statutory maximum on-duty and minimum off-duty periods across the board, treat both groups of employees equally, without recognizing that an employee who is subject to unpredictable work schedules, and off-duty periods during the day, may require a longer period off-duty to achieve sufficient sleep than an employee who has a more predictable schedule and/or whose off-duty period permits the opportunity to sleep during the night.

In addition, our scientific understanding of circadian rhythms indicates that sleep-wake cycles in less than a 24-hour period rapidly change the circadian pattern, which contributes significantly to fatigue. Under the current law, an employee is likely on a regular basis to have more than one cycle of sleeping and waking within 24 hours. This is even more detrimental to employees who may be less able to effectively use their off-duty period to obtain sufficient sleep. Fatigue models using crew scheduling data also reveal a positive correlation between the time of day and circadian pattern, and the risk of a human-factor accident, with that risk being greatest between midnight and 3 a.m.

Over the past two decades, significant progress has been made in sleep science and in our understanding of the role of fatigue in our daily lives. The NTSB has played a salutary role in calling out fatigue as a factor in at least 18 rail accidents since 1984. FRA-funded research has used an integrated strategic planning and evaluation strategy of field data collection, laboratory simulations, and analysis and evaluation of Fatigue Management Systems to enrich our knowledge of fatigue as it affects employees in a wide range of railroad occupations. This multi-faceted research has resulted in a strategic fatigue roadmap for FRA that identifies work scheduling as one of the top policy issues, and a key starting point for addressing the fatigue problem in the rail industry today.

FRA's analysis of data gathered by our Switching Operations Fatality Analysis (SOFA) Working Group indicates that fatigue (largely related to biological rhythms or time of day) was likely responsible for more than 22 percent of the risk of SOFA severe incidents from 1997 through 2003. In July of 2006, FRA released the Collision Analysis Report, which identified compromised alertness as a likely significant factor in 29 percent of the collisions reviewed in detail by a panel of railroad subject matter experts representing labor, management, and the Federal Government.

On November 29, 2006, we announced the release of an important new study entitled *Validation and Calibration of a Fatigue Assessment Tool for Railroad Work Schedules* (the *Validation Study*), which confirmed the applicability of a Department of Defense fatigue model to railroad operations. The Summary Report from that study described the relationship between fatigue and human-factor train accidents. The study is the largest and most rigorous of its kind, based on review of 30-day work histories of locomotive crews involved in 400 human-factor and 1,000 other train accidents. The data from the model validation study showed that there is a reliable relationship between the time of day of human-factor accidents and the expected, normal circadian rhythm. This circadian pattern was not reliably present for accidents not caused by human factors.

The results of this accident analysis study indicated that a fatigue model could predict an increased risk of human-factor accidents under certain conditions that cause fatigue. A bio-mathematical fatigue model, known as SAFTE (Sleep, Activity, Fatigue, and Task Effectiveness), was used to estimate crew cognitive effectiveness based entirely on work schedule information and opportunities to obtain sleep. Effectiveness is a metric that tracks speed of performance on a simple reaction-time test and is strongly related to overall cognitive speed, vigilance, and the probability of lapses. The model rates effectiveness on a scale from 0 to 100. There was a reliable linear relationship between crew effectiveness (fatigue) and the risk of a human-factor accident: as crew effectiveness declined, human-factor accident risk went up. No such relationship was found for accidents not caused by human factors. This result satisfied the criteria for model validation. The risk of human-factor accidents was elevated at any effectiveness score below 90 and increased progressively with reduced effectiveness. There was a reliable time-of-day variation in human-factor accidents, but not in accidents not caused by human factors. Human-factor accident risk increased reliably when effectiveness was below 70, a value that is the rough equivalent of a 0.08 blood alcohol level or being awake for 21 hours following an eight-hour sleep period the previous night. Below an effectiveness score of 70, accident cause codes (codes defined by FRA that indicate the factors that caused the accident, such as passing a stop signal or exceeding authorized speed) were of the sort expected in situations involving fatigue, confirming that the relationship between accident risk and effectiveness was meaningful. If an individual had an effectiveness score of less than or equal to 50, his or her chance of having a human-factor accident was increased 65 percent.

When we released the report on validation of the SAFETE model last November, we also released a White Paper summarizing the results of research to date. This information can be accessed on our website at *http://www.fra.dot.gov/us/content/1737*.

We would be glad to provide a further briefing on these and other research initiatives.

For these reasons, FRA believes that in order to take maximum advantage of the scientific learning on fatigue, the hours-of-service laws must have sufficient flexibility to take into account the predictability or lack of predictability of shifts (especially since collective bargaining agreements provide only 2 hours notice prior to the next on-duty period), time of day, and other factors, in determining the appropriate maximum on-duty and minimum off-duty periods that will give an employee the best opportunity to obtain the necessary sleep, which may not be the same for every employee or group of employees performing the same job functions.

In addition, a more flexible approach to the hours-of-service laws would allow FRA to address, where necessary, crew scheduling practices, using existing research, and the railroads' own experiences with fatigue management policies, to alleviate the working conditions that contribute to fatigue. Some areas that could be addressed include requirements of periods of undisturbed rest, the use of call windows, and automatic markup procedures for employees returning from extended leave. All of these policies would increase the predictability of employees' work schedules, which would enable employees to maximize the opportunity to obtain sufficient sleep during off-duty periods.

Question 2. Wouldn't you agree that workers are better off getting 8 hours of sleep each night versus 5 or 6?

Answer. I certainly agree that getting 8 hours of sleep each night is preferable to getting only 5 or 6 hours of sleep, as research shows that most people need 7 to 8 hours of sleep per night to function at peak effectiveness. Under the current hours-of-service laws, it is unlikely, if not impossible, for some employees to get 7 or 8 hours sleep, as they get only 8 or 10 hours off before they can be required to return to duty. However, simply increasing the minimum off-duty period, while giving the appearance of providing this opportunity, will not be sufficient to ensure that all employees truly have the opportunity to obtain sufficient sleep, if we do not also address other aspects of their working conditions that inhibit their ability to get enough sleep.

As was discussed in Appendix B to my written testimony, and in response to Question 1 above, the time of day in which employees work or try to sleep, and the corresponding circadian patterns, have an effect on the ability to get proper sleep. Research has shown that locomotive engineers whose shifts ended between 5 a.m. and noon obtained the least sleep during their off-duty period, even if its length was the same as employees working at other times of the day. Thus, these employees might benefit from even more time off than other employees, to have a greater opportunity to get enough sleep before returning to duty. Requirements tailored to the specific scheduling practices and other factors that affect different groups of employ-

ees, as borne out by research, would be more effective in ensuring that employees have the opportunity to get the optimal amount of sleep during off-duty time.

Question 3. Don't you think this would have a dramatic effect on safety, given that worker fatigue accounts for 1 out of every 4 train accidents?

Answer. As I indicated in my testimony, human factors cause roughly 40 percent of all train accidents and fatigue is at least a contributing factor in one out of every four serious human factor-caused train accidents. This does not include accidents caused by track or equipment defects, or other causes. In addition, fatigue is often a factor in employee injuries not related to train accidents. Certainly, railroad employees who get more sleep will be less likely to suffer the consequences of fatigue, including the risk of accidents caused or contributed to by fatigue. However, as I have pointed out in my testimony and the responses above, simply increasing minimum off-duty periods may be insufficient to achieve the goal of having employees who get more sleep, if the other factors in the work environment that affect employees' ability to get enough sleep are not also addressed. In particular, it is important for employees to know approximately when they will be expected to report for an assignment so that they can plan to take rest. In the railroad industry, many employees in road service work in rotating pool assignments and on "extra boards." These employees will often know when they are available to be called (*i.e.,* when their statutory rest will end), but not when they will actually be called.

Question 4. Assuming this bill passes and we conference with the House, when do you think the hours-of-service reforms would be implemented by the government and then the rail industry? What is the timeline?

Answer. The Senate bill gives FRA 180 days from the date of enactment to promulgate regulations requiring railroads to keep records that comply with the new requirements in the bill, to provide for electronic recordkeeping, and to require training of employees, and the Senate bill provides that the amendments to the hours-of-service laws themselves are effective 1 year from the date of enactment. The House bill would become effective immediately upon enactment.

FRA could likely draft the required regulations within the 180 days provided in the Senate bill, although the required levels of review might be more difficult. These regulations would be one of the first steps to inform the regulated community of what is expected. Training would also be required, not only for the regulated community, but also for FRA inspectors who would be enforcing the new law. Once the new provisions are understood and FRA's hours-of-service recordkeeping regulations are revised to require records that comply with the new law, the railroads will need time to adapt the records they are currently using to be in compliance.

Under either the House or Senate bill, a railroad of any size will likely need to use an electronic recordkeeping system in order to determine the current availability of employees and to verify compliance with the law. Whether or not a railroad currently has an electronic recordkeeping system, programming to comply with the new law will involve extensive work. In the case of existing systems, for instance, the proposed legislation would require revision to the logic through which the electronic programs use data entered by employees to calculate maximum and minimum periods and other limitations so that it addresses new limitations added to the law, such as maximum hours per month. In addition, the new law would require changes to some of the screens presented to the employees for input and to FRA for the inspection of records.

An example may be illustrative of some of the changes in railroad practices and electronic recordkeeping programs that will be required. Time spent completing hours-of-service records is administrative duty that is "other service for the carrier" under the law, which commingles with the employee's covered service and is considered part of an employee's time on-duty. FRA has allowed railroads to structure their programs so that employees who are approaching or have exceeded the maximum allowed time on-duty are presented a "quick tie up" screen, on which they enter only their relieved and released times, a phone number at which they can be reached if different from that on record, and a "board placement time" which is a collective bargaining issue. Employees complete the record, entering deadhead transportation and other activities, the next time they return to duty. This practice would have to change under the new law, as railroads would need the information about employees' time spent awaiting and in deadhead transportation to final release before an employee begins a statutory off-duty period, to determine whether and in what amount an employee may be entitled to additional off-duty time, and the employee would likely need to request any additional time to which he or she is entitled at that time. This will require a change not only in railroad practices, but in programming, so that the electronic program presents the full record for com-

pletion, and the railroad ensures that employees have enough time to complete the full record within the limitations of the statute.

In spite of the many challenges, FRA and the industry would work diligently to meet the one-year deadline for implementation in the Senate bill.

RESPONSE TO WRITTEN QUESTION SUBMITTED BY HON. JOHN F. KERRY TO EDWARD R. HAMBERGER

Question. Assuming this bill passes and we conference with the House, when do you think the hours-of-service reforms would be implemented by the government and then the rail industry? What is the timeline?

Answer. The timeline would depend upon the requirements of the final legislation. For instance, the Senate bill would make some Hours-of-Service changes effective "one year after the date of enactment of this Act." In this case, the exact effective date would depend upon the date the President signs the final legislation into law. The Senate bill would grant additional authority for Hours-of-Service changes to the Secretary of Transportation. The effective date for these changes might have to be phased-in over a longer period of time, depending upon existing labor agreements and other factors.

○