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Federal Railroad Safety Programs: Selected Issues in Proposed Reauthorization Legislation

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Reauthorization of Federal Railroad Safety Programs: Selected Issues in Proposed Legislation

Summary

The Federal Railroad Administration (FRA) is the federal agency primarily responsible for safety in the rail industry. FRA's safety programs were last authorized in 1994; their authorization expired in 1998. Most measures of rail safety have improved significantly since FRA's last authorization, including the number of grade crossing collisions and fatalities and the number of employee injuries and deaths. These improvements came while the amount of both freight and passenger rail activity on the nation's rail infrastructure was increasing. However, the improvements in safety measures have leveled off in recent years. Given significant projected continued increases in freight and passenger rail activity in the coming decade, there is concern that without additional efforts, some of the gains of the past decade may be lost.

Among the issues that have dominated debate thus far are alleged shortcomings in the rail hours of service statute (49 U.S.C. 21101 et seq) that limit the act's effectiveness in preventing fatigue among train operating crews, which may be a contributing factor in a significant number of train accidents. A related issue is limbo time, time that train operating crews spend on shift, but not engaged in safety-related duties, after they have reached the limit of their shift under the rail hours of service act, which also contributes to fatigue. Unlike the hours of service rules for other transportation modes, the rail hours of service rules are set in law and cannot be altered through the regulatory process. Other prominent issues have included implementation by railroads of automated collision-prevention technology in trains, the adequacy of FRA track inspections, and safety at highway-rail grade crossings.

As of early August 2007, three proposals for FRA reauthorization have been put forward. The Bush Administration's proposal for FRA reauthorization, the Federal Railroad Safety Accountability and Improvement Act (H.R. 1516/S. 918), would, among other provisions, provide DOT with the authority to amend the rail hours of service limits through the regulatory process. No action has been taken on this bill.

Representative James Oberstar, Chairman of the House Committee on Transportation and Infrastructure, introduced H.R. 2095, the Federal Railroad Safety Improvement Act of 2007. On June 14, 2007, the Transportation and Infrastructure Committee adopted a managers' amendment to the bill and ordered the bill to be reported. The bill would increase the length of the minimum rest period under the rail hours of service act from eight to ten hours, and give FRA the authority to further increase the minimum rest period through regulation. It would increase the number of FRA safety inspectors from around 430 to 800, authorize federal rail safety programs at a total of $1.2 billion for FY2008-FY2011, and create new grant programs for grade crossing safety and train control technology.

Senator Frank Lautenberg, Chairman of the Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security of the Senate Commerce, Science, and Transportation Committee, introduced the Railroad Safety Enhancement Act of 2007 (S. 1889). This report will be updated.

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The Federal Railroad Administration (FRA) of the U.S. Department of Transportation is the federal agency primarily responsible for promoting and regulating the safety of the railroad industry. The FRA's rail safety programs were last authorized in 1994 (P.L. 103-440); that authorization expired at the end of FY1998. FRA's safety programs have continued to be funded through annual appropriations bills.

Reauthorization of the FRA is taking place in a context of improvement in most measures of rail safety. However, there continue to be around 1,000 rail-related deaths each year. The trend of improvement in some rail safety measures, such as train accidents and deaths in grade-crossing collisions, has leveled off in recent years, and with forecasts of significant growth in rail traffic in the future, there is concern over the need to make more progress in rail safety.

Several hearings have been held in the 110th Congress in both the House and Senate on reauthorization of FRA. An Administration proposal to reauthorize FRA has been introduced, by request, as the "Federal Railroad Safety Accountability and Improvement Act" (H.R. 1516 and S. 918). No action has been taken on this legislation in either the House or the Senate. Representative James Oberstar, Chairman of the House Transportation and Infrastructure Committee has introduced a reauthorization proposal, the "Federal Railroad Safety Improvement Act of 2007" (H.R. 2095). A managers amendment was adopted, with amendments, and was ordered to be reported out of the Transportation and Infrastructure Committee on June 14, 2007. Senator Frank Lautenberg, Chairman of the Senate Commerce Committee's Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, has also introduced a reauthorization proposal, the "Railroad Safety Enhancement Act of 2007" (S. 1889).

This report describes the major issues in the debate over reauthorization of FRA in the 110th Congress. It also describes the major provisions that were approved by the House Transportation and Infrastructure Committee in H.R. 2095. These include changes to the rail hours of service law, including limitations on limbo time; imposition of a deadline for the implementation of positive train control by railroads; a significant increase in the number of FRA safety inspectors; and new requirements for highway-rail grade crossings.

Policy Context

The nation's railroad sector consists of both freight rail companies and those passenger rail systems that use the nation's intercity rail network (i.e., both Amtrak and commuter rail systems). The sector consists of roughly 570 freight railroads and 118 passenger, commuter, and excursion railroads. These organizations employ around 235,000 people and operate roughly 220,000 miles of track. The vast majority of the rail sector consists of freight railroad operations. The freight railroad industry is divided into three classes, based on operating revenues; there are only 7 railroads in the top category, Class I, for which the threshold is roughly $320 million in annual revenues, but those 7 railroads represent about 70% of freight rail industry employment and own roughly 70% of total U.S. rail mileage.

The Staggers Rail Act of 1980 (P.L. 96-448) largely deregulated the freight rail industry. Since that time, there has been extensive consolidation of the industry. Employment has been reduced from 480,000 (1980) to 235,000 (2006), while freight revenue ton-miles have increased from 918 million (1980) to 1.96 trillion (2006). The miles of road operated[1] in freight service have been reduced from 177,000 (1980) to 141,000 (2005), while the number of train-miles operated has increased from 718 million (1980) to 811 million (2006). The number of passenger-miles has increased from 12 billion (1980) to 16 billion (2006).[2]

During this period, the overall safety record of the industry has shown great improvement. Between 1980 and 1994, the annual rate of train accidents (that is, the number of accidents divided by the number of miles traveled by trains) declined from almost 12 accidents per million train miles to just under 4 per million train miles. However, since 1994 the improvement has leveled off, and the rate of train accidents has varied from 3.5 to 4.4 per million train miles since then.[3] In addition to this lack of improvement in the train accident rate, several recent serious accidents have raised concerns about the need for further improvement in rail safety.[4] The numbers of grade-crossing collisions and resulting injuries and deaths declined until 2003, but has shown little improvement since then.

Most rail-related deaths are to pedestrians trespassing on rail lines and motorists colliding with trains at highway rail grade crossings. While there are nearly 1,000

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[1] The total length of the freight rail network, excluding sidings and yard tracks, and not counting whether there is more than one set of tracks. Track miles will exceed miles of road operated.

[2] Association of American Railroads, *Yearbook of Railroad Facts*, various years.

[3] Federal Railroad Administration, *Railroad Safety Statistics Annual Report*, various years.

[4] These accidents included a collision between two freight trains in Macdona, Texas, in June 2004, resulting in a chlorine gas release that killed three people and caused at least forty others to be treated for exposure; a collision between a freight train and parked rail cars in Graniteville, South Carolina, in January 2005 that also resulted in a chlorine gas release, killing 9 people and leading to the evacuation of over 5,000 residents; and a collision between a commuter train and a parked car in Glendale, California, in January 2005 that resulted in 11 deaths and over 200 injuries.

rail-related deaths each year, only around 20-30 rail employees are killed while on duty each year, and railroads have lower employee injury rates than other modes of transportation and most other major industries.

FRA classifies the causes of train accidents into five categories: human factors, track and structures, equipment, signal and train control, and miscellaneous. Of these, human factors and track are responsible for the majority of train accidents. [5] Examples of human factor causes of accidents include improperly positioning the switches that determine which track a train will follow (the cause of the Graniteville, SC accident), moving rail cars without checking for safe conditions in the vicinity, and leaving rail cars in a position that blocks track. Examples of track conditions that lead to accidents include defective joint bars (that connect one piece of rail to the next), defective or ineffective crossties (that maintain the proper alignment of the parallel rails that form the track), and broken or worn switches.

Without further reductions in the rate of train accidents, the number of train accidents and resulting deaths and injuries is likely to grow, due to expected increases in train traffic. The Department of Transportation (DOT) has estimated that between 1998 and 2020 the amount of freight moved by rail (measured by weight) will increase by roughly 50%.[6] Also, many communities are interested in establishing, or expanding already existing, commuter rail operations (which generally operate on the freight rail network) to provide transportation alternatives and manage congestion. Thus, the number of train miles on the nation's freight rail network is likely to significantly increase in the coming years. If train accident rates do not improve, this may lead to increased numbers of accidents, injuries and deaths.

FRA's Role in Rail Safety

FRA's role in rail safety is threefold: to assess the safety of rail operations; to promulgate regulations to promote cost-effective improvements in safety standards; and to enforce compliance with federal rail safety laws and regulations. These regulations address such topics as track condition, passenger and freight equipment, signal and train control systems, maintenance of active warning devices at highway-rail grade crossings, accident reporting, alcohol and drug testing, operating rules and practices, and many others. FRA also enforces the Hazardous Materials Regulations, prescribed by DOT's Pipeline and Hazardous Materials Safety Administration, as they apply to rail transportation.

FRA is a relatively small agency in relation to the size of the railroad industry it oversees. It has around 800 employees, of whom 650 are classified as safety personnel, including around 430 inspectors (supplemented by 160 state inspectors who work with FRA on safety oversight of railroads), to oversee an industry with

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[5] For 2006, FRA estimated that track conditions were the primary cause of 36% of train accidents and human factors were the primary cause of 35% of train accidents. FRA Safety Statistics, Accident/Incident Overview, 2006.

[6] Federal Highway Administration, *Freight Analysis Framework*, FHWA-OP-03-006, February 2002, cited in Congressional Budget Office, *Freight Rail Transportation: Long-Term Issues*, January 2006, pps. 5-6.

over 235,000 employees, 220,000 miles of track, 158,000 signals and switches, and over 1.3 million freight cars and other equipment in service. Although FRA and the state investigators conduct some 63,000 inspections each year, these inspections cover only a small fraction of the operations of railroads each year.[7] To make the most of its resources, FRA focuses inspections at locations judged as likely to have safety problems based on accident data and results of previous inspections. FRA's annual budget for its core safety responsibilities (that is, excluding funding for grants to Amtrak) is roughly $200 million.

FRA's New Initiatives to Promote Safety. FRA's traditional approach to safety is to regulate the design of rail structures and the behavior of rail workers, then to use inspections to enforce compliance with the specific standards. The Government Accountability Office (GAO) has noted that "these inspections focus on compliance with minimum standards and are not designed to determine how well railroads are managing safety risks throughout their systems that could lead to accidents."[8]

In response to reviews of its work by the DOT Inspector General and the Office of Management and Budget, FRA has begun to adopt new approaches to supplement its traditional safety program. These include efforts to target its inspections using a more quantitative assessment of risk, as well as new initiatives that make use of risk management approaches to improving safety. For example, FRA has implemented a Confidential Close Call Reporting Program pilot project. This project allows employees of participating railroads to report close calls — that is, incidents where an accident could have occurred, but didn't. The information on the close calls is kept confidential, so that both employees and the participating railroads are shielded from punishment for providing the information. A team composed of representatives of the participating railroads, labor organizations, FRA, and the Bureau of Transportation Statistics will review the information to identify safety problems. A similar program has been in place in the aviation industry for many years, and has contributed to improvements in safety there.

FRA's National Rail Safety Action Plan. In response to concerns raised by the accidents experienced in 2004 and early 2005, in May 2005 FRA instituted a new safety action plan to improve rail safety. The Rail Safety Action Plan includes initiatives to:

- Reduce train accidents caused by human factors;
- Reduce employee fatigue;
- Improve track safety;
- Improve hazardous materials safety and emergency preparedness;
- Strengthen FRA's safety compliance program; and

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[7] FRA estimates that its inspectors are able to inspect only about 0.2% of railroads' operations each year, based on an estimate of the amount of activity, such as train movements, on each U.S. railroad. Government Accountability Office, *Rail Safety: The Federal Railroad Administration is Taking Steps to Better Target Its Oversight, but Assessments of Results Is Needed to Determine Impact*, GAO-07-149, January 2007, p. 5.

[8] Ibid, p. 5.

- Increase highway-rail grade crossing safety.

According to GAO, FRA's Rail Safety Action Plan provides a reasonable framework for guiding the agency's efforts.[9] Since the plan was introduced relatively recently, most of its initiatives have not yet been fully implemented, and their overall impact on safety will probably not be known for several years. Some of the initiatives rely on voluntary actions by railroads, such as the adoption of a worker fatigue model to help railroads schedule the duty periods of train crews so as to reduce worker fatigue; thus their implementation is uncertain.

GAO noted that, while FRA has goals for its safety efforts (e.g., to reduce train accidents caused by human factors), it does not have measures of the direct results of its inspection and enforcement programs that would show their contribution to achieving those goals. Neither has FRA evaluated the effectiveness of its enforcement program in achieving its goals.

Selected Reauthorization Issues

The major issues in the current reauthorization debate include addressing employee fatigue through changes to the federal rail hours of service legislation, implementing new train control technology that promotes safety, improving the condition of track, and improving safety at highway-rail grade crossings.

Train Operator Fatigue

In the rail industry, which operates heavy machinery in all conditions around the clock, the impact of employee fatigue on safety is an ever-present concern. The FRA estimates that fatigue is at least a contributing factor in 25% of serious train accidents that are caused by human factors. The National Transportation Safety Board (NTSB) has identified fatigue as a factor in at least 18 rail accidents since 1984[10], and notes that, given the difficulty of identifying fatigue as a cause or contributor to accidents, the number of accidents due to fatigue is likely to be underestimated.[11] NTSB has had operator fatigue on its list of "Most Wanted Transportation Safety Improvements" since it began keeping such a list in 1990.[12]

Rail Hours of Service Act. Congress enacted legislation in 1907 to limit the amount of time certain rail workers, such as train operating personnel and signalmen, can work at one stretch, and to specify the minimum amount of rest they must be

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[9] Ibid, p. 4.

[10] Statement of Joseph H. Boardman, Administrator, Federal Railroad Administration, U.S. Department of Transportation, Before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, February 13, 2007, p. 3.

[11] National Transportation Safety Board, *Evaluation of U.S. Department of Transportation Efforts in the 1990s to Address Operator Fatigue*, NTSB/SR-99/01, 1999, p. 6.

[12] Ibid, p. 11.

provided before reporting for work again.[13] These limits are enacted in law[14], unlike the hours of service limits for workers in other transportation modes, which are set through the regulatory process. Therefore, unlike for other modes, the rail hours of service limits cannot be changed by DOT through the regulatory process. The rail hours of service law has not been substantially changed since 1969.

Under the current law, train operating crews and signalmen can work a maximum of 12 hours, after which they must be given at least 10 hours rest. However, if they work less than 12 hours they are only required to be given 8 hours of rest.[15] Under these rules, a train crew worker can work 432 hours a month. This compares to a maximum work schedule of 100 hours in a month for a commercial pilot, 260 hours in a month for commercial truck drivers, and 360 hours in a month for licensed maritime workers aboard vessels under 100 tons when at sea.[16]

Most rail workers do not work anywhere near the theoretical maximum of 432 hours. According to Association of American Railroads (AAR) data from several railroads collected in 1998-1999, the average work schedule for train, engine, and yard employees was in the range of 125 to 175 hours a month, with 17% working more than 200 hours in a month.[17] Fewer than 1% worked more than 300 hours in a month.

Both FRA and the NTSB have testified that the current rail hours of service regime is antiquated and does not reflect current understanding of the causes of, and effective countermeasures for, fatigue. The FRA has testified that "the limitations in [the time that can be worked under the hours of service law], although ordinarily

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[13] The Rail Hours of Service Act regulates the maximum time that can be worked by employees engaged in or connected with the movement of a train, including locomotive engineers, conductors, signalmen, and dispatchers. Maintenance of way workers (who maintain and repair track and other structures), carmen (who inspect and repair rail cars), other shop crafts, and contractors who perform signal duties are not covered by the Act and thus are not limited in the amount of time they can work.

[14] At 49 USC 21101 through 21108.

[15] In emergencies, all of these employees can be required to work up to an additional 4 hours per shift.

[16] National Transportation Safety Board, *Evaluation of U.S. Department of Transportation Efforts in the 1990s to Address Operator Fatigue*, NTSB/SR-99/01, 1999, p. 2. Revisions to the hours of service rules for commercial truck drivers in 2005 lowered the maximum to 240 hours in a month (James Brunkenhoefer, United Transportation Union, testimony before the House Committee on Transportation and Infrastructure Subcommittee on Railroads, Pipelines, and Hazardous Materials, February 13, 2007, p. 8).

[17] Edward R. Hamberger, President & Chief Executive Officer, Association of American Railroads, Before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Fatigue in the Rail Industry, February 13, 2007, p. 7. AAR noted that according to recent analysis, the average hours worked per year for train and engine employees increased "only slightly" between 1998-1999 and 2005, and thus they believe the percentages cited are still valid.

observed, do not seem adequate to effectively control fatigue."[18] The NTSB has made several recommendations to DOT over the years to change the rail hours of service act, but DOT has not been able to respond to these recommendations because the rules are set in the statutes. Among the issues that have been raised regarding the shortcomings of the current hours of service rule are inadequate rest periods and schedules that conflict with circadian rhythms.

Inadequate rest periods. While workers are required to have at least 8 hours off-duty between shifts, that means that the worker has 8 hours to commute home, enjoy any leisure time, take care of any personal tasks that need to be done, rest, then commute back to the work site. Moreover, the employee may not know whether they will have to return to work in 8 hours or whether they will have a longer period to rest. If they are called to return to work in 8 hours, the call to report to work, which is required by labor agreements to come early enough to give the employee time to get to work, may come as much as 2 hours in advance of the time to report to work, which could be only 6 hours after the employee left work at the end of their previous shift. Thus a worker could, even under ideal circumstances away from the job, have as little as 5 to 6 hours of undisturbed rest before returning to work.

The difficulties created by the relatively short length of the minimum off-duty period set by the hours of service act can be exacerbated by the uncertainty of rail employee work schedules. It may be difficult for rail employees to make effective use of their available rest time between shifts, because when they leave work at the end of a shift train crews do not always know when they will next have to report to work. The FRA has testified that crews of freight trains rarely have predictable work schedules. The United Transportation Union has testified that the majority of train crews are subject to call with little notice.[19] This uncertainty makes it difficult for train crews to know how to make the best use of their off-duty time.

This uncertainty of employee's work schedules is due in part to labor agreements which affect the work scheduling practices of railroads. These agreements prioritize the availability of employees for work based on factors such as seniority. Employees who are called to report to work when they feel they have not had adequate rest can decline the call, but may face disciplinary action if they do so.

Conflict with circadian rhythms. Researchers have learned that human beings, like most mammals, sleep and wake in a cycle approximately 24 hours in length, known as a circadian rhythm. Rapid changes in a person's circadian pattern

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[18] Statement of Joseph H. Boardman, Administrator, Federal Railroad Administration, U.S. Department of Transportation, Before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on the Reauthorization of the Federal Rail Safety Program, January 30, 2007, p. 5.

[19] Testimony of James M. Brunkenhoefer, National Legislative Director, United Transportation Union, before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Fatigue in the Railroad Industry, February 13, 2007, p. 5.

of sleep and wakefulness disrupt many physiological functions and may impair their performance. The work schedules permitted under the current hours of service rule may in certain instances conflict with employee's circadian rhythms, making it more difficult for them to get adequate rest. Under the current regulations, rail workers can work 8 hours and rest 8 hours, and maintain that schedule indefinitely. Thus, one day they might be resting from midnight to 8 a.m., the next day from 4 p.m. to midnight, the next day from 8 a.m. to 4 p.m., and the next day back to midnight to 8 a.m., a "backward-rotating" schedule that never allows the workers to establish a circadian rhythm.

Current Efforts to Address Fatigue. FRA has adapted a model developed by researchers working with the U.S. military that can estimate the degree of fatigue likely to be experienced by a person, based on such factors as the time of day, the amount of sleep they last got, when that sleep occurred, and how long the person has been awake since then. FRA has tested this model against a record of crew work schedules and found that it is useful in predicting when an employee may be fatigued to the point of increased risk of contributing to an accident. FRA is encouraging rail companies to use this model to inform their crew scheduling practices. FRA is also encouraging and supporting efforts to address sleep disorders among rail employees.

Railroads and rail labor have cooperated in efforts to address fatigue. For example, the BNSF Railway Company provides train crews 14 hours of undisturbed rest after working 8 hours. CSX Transportation provides a 10-hour period of undisturbed rest, as well as fixed work-rest schedules in some locations.[20]

However, efforts by rail management and rail labor to address fatigue issues have often achieved limited success. Factors that have constrained the success of the various initiatives include the variability in demand for rail services, which can increase the need for rail labor more quickly than employees can be added, staffing and retention issues that have affected the supply of rail labor, and provisions in collective bargaining agreements which may make a fatigue management practice mandatory in one location and optional in another, even within the same railroad. According to rail labor representatives, programs to provide more predictable work schedules are currently covering no more than 2% of affected employees.[21] Also, even successful voluntary programs are subject to being changed or eliminated as conditions change in the industry.

A more fundamental difficulty facing efforts to address fatigue is that both rail managers and rail workers have incentives to maintain the status quo regarding rail hours of service. For managers, the current system allows more flexibility in

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[20] Federal Railroad Administration, U.S. Department of Transportation, *Section-by-Section Analysis of The Federal Railroad Safety Accountability and Improvement Act*, available at [http://www.fra.dot.gov/Downloads/Counsel/legislation/Section-By-SectionAnalysis.pdf], p. 33.

[21] Joint Statement of the Teamsters Rail Conference and the United Transportation Union, U.S. House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Reauthorization of the Federal Rail Safety Program, May 8, 2007, p. 7.

scheduling employees for work than any likely alternative; for workers, the current system provides the opportunity to work more hours (and thus, earn more income) than any likely alternative. For these reasons, voluntary efforts to address fatigue are likely to face much resistance.

Another difficulty in attempting to address fatigue is the degree to which the current hours of service regime has become intertwined with the contractual arrangements that have been negotiated over decades by rail labor and management. These labor agreements, resulting from collective bargaining, often include provisions that affect how often, and under what circumstances, employees can work. Changes in the hours of service regime may affect the impact of these provisions, and thus upset the balance of interests achieved through long negotiation.

Limbo time

Limbo time refers to a situation where, due to unforeseen circumstances, a train operating crew has reached the limit of the amount of time they are allowed to work at one stretch under the hours of service law (12 hours), but have not yet reached the location where they were to be released from duty. In such a situation the crew is required to stop the train and not engage in safety-related duties, but they are not allowed to leave the train until a replacement crew arrives, at which time the original crew can be transported to a final release point. The time the crew spends being transported to their final release point is neither on-duty time for purposes of the hours of service law (and so not a violation of the hours of service law) nor off-duty time (and so does not count against the amount of off-duty time the crew is required to be given in order to rest after their shift); hence, "limbo" time. The train crews are generally paid for limbo time, but there is concern about its impact on employee fatigue: the minimum rest period currently required after a 12-hour shift may not be sufficient to recover from a shift that was more than 12 hours long, in some cases much more, due to the addition of limbo time.

Limbo time was created in 1969 amendments to the rail hours of service law. Prior to that change, the time the original crew spent being transported to its final release point was considered off-duty (rest) time. Rail labor requested that the transportation time be considered as on-duty time, but railroads objected that change would create increased scheduling difficulties for them, since they would have to arrange to stop the trains even further from the pre-arranged destination and have the original crew spend more time being transported to their release point. Limbo time was created to ensure that train crews' off-duty period did not begin until they were truly off-duty so that they had the opportunity to rest during their rest period, while still providing railroads operational flexibility without endangering safety. FRA has also interpreted the time the original crew spends waiting with the train for the arrival of transportation to their final release point as limbo time, an interpretation that has been upheld by the Supreme Court. FRA has expressed concern about employees being held on trains for long periods of time while awaiting the arrival of

transportation, in the absence of any valid emergency that would justify such long waits.[22]

Changing conditions in the rail industry since 1969 have increased the scale of the limbo time issue. In the 1960s, the industry consisted of many mid-sized companies operating in relatively small regions, and railroads typically had employees stationed every few dozen miles who could be sent to pick up train crews whose shifts had expired. Since then there has been significant consolidation in the rail industry, which is now dominated by a few major companies whose operations span much larger territories. The average distance covered by a train crew during a shift is now much greater, and there may be few or even no intermediate locations from which transportation can be dispatched to pick up a crew whose shift has expired.

Industry-wide statistics on limbo time are not available, so the full extent of limbo time is not known, nor can an increase in the incidence of limbo time be documented industry-wide. The Brotherhood of Locomotive Engineers and Trainmen (BLET) recently presented data on limbo time for train crews at one Class I railroad indicating that the incidence of limbo time at that railroad was increasing. Over the six-year period 2001-2006, the number of crews whose work tours exceeded 14 hours, indicating at least 2 hours of limbo time, increased from between 32,000 - 33,000 a year in 2001 and 2002 to between 75,000 - 80,000 in 2005 and 2006. Those crews whose work tours exceeded 15 hours rose from around 12,000 a year in 2001 and 2002 to between 35,000 - 38,000 a year in 2005 and 2006.[23] The BLET figures show that on 1,003 occasions crews at that Class I railroad spent at least 8 hours in limbo, resulting in a shift lasting at least 20 hours. The NTSB investigation of the Macdona, Texas accident found that the engineer on the Union Pacific train that struck the BNSF train had one shift earlier that month that had lasted 22 hours: 10 hours of limbo time after a 12-hour shift.[24]

Positive Train Control

Fatigue is not entirely preventable, no matter the countermeasures. Researchers have found, for example, that human performance is impaired during the early

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[22] Federal Railroad Administration, Department of Transportation, "Decision of the United States Supreme Court Concerning an Agency Interpretation of the Federal Hours of Service Law; Change in Agency Interpretation; Enforcement Policy Regarding Violations of Laws as Previously Interpreted," *Federal Register*, vol. 61, no. 89, Tuesday, May 7, 1996, pp. 20494-20495.

[23] Testimony of Thomas A. Pontolillo, Director of Regulatory Affairs, Brotherhood of Locomotive Engineers and Trainmen, before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Fatigue in the Railroad Industry, February 13, 2007, Exhibit BLET-1.

[24] National Transportation Safety Board, *Collision of Union Pacific Railroad Train MHOTU-23 With BNSF Railway Company Train MEAP-TUL-126-D With Subsequent Derailment and Hazardous Materials Release, Macdona, Texas, June 28, 2004*, Railroad Accident Report NTSB/RAR-06/03, 2006, p. 38.

morning hours (roughly 3-6 a.m.), regardless of how well-rested the worker. Thus there is interest in technologies that can reduce the opportunities for fatigue to create safety problems. One such technology is positive train control.

Positive train control (PTC) refers to technology that is capable of preventing collisions between trains, derailments resulting from trains traveling too fast for conditions, and injuries to roadway workers (e.g., maintenance-of-way workers, bridge workers, signal maintainers), as well as potentially limiting the consequences of hijackings and runaway trains. PTC can serve as a backup system able to intervene when a train crew operates a train improperly or fails to comply with signals. Examples of PTC systems vary widely in complexity and sophistication based on the level of automation they implement and the degree of control they are capable of assuming.

PTC has been on the NTSB's Most Wanted Transportation Safety Improvements list since the list was established in 1990.[25] In its review of the Macdona, Texas accident, the NTSB noted that "[b]oard accident investigations over the past three decades have shown that the most effective way to prevent train-to-train collisions is through the use of a positive train control (PTC) system that will automatically assume some control of a train when the train crew does not comply with signal indications."[26]

Congress has also been interested in PTC. Since 1992, Congress has on several occasions requested information from FRA about the costs and benefits of PTC and the status of PTC deployment. Since 1994, Congress has provided approximately $40 million to FRA to support development, testing, and deployment of PTC prototype systems in Illinois, Alaska, and among the Eastern railroads.

In 1997 FRA asked the Rail Safety Advisory Committee to examine PTC. The Advisory Committee concluded that the safety benefit of PTC to railroads did not justify the significant costs of deploying such systems. It estimated that PTC deployment on the Class I railroads would cost from $1.2 billion to $7.8 billion over 20 years, depending on the sophistication of the system, while over the same period the estimated safety benefit from avoided accidents ranged from around $500 million to $850 million, again depending on the sophistication of the system.[27] FRA subsequently issued a regulation establishing a performance standard for PTC (finalized in 2005), but has not required railroads to implement PTC. FRA noted in its 2005 Final Rule on PTC standards that PTC systems offer non-safety benefits,

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[25] National Transportation Safety Board, *Most Wanted Transportation Safety Improvements, Railroad Issue Areas*, "Implement Positive Train Control Systems" [http://www.ntsb.gov/recs/mostwanted/positive_train.htm].

[26] National Transportation Safety Board, *Collision of Union Pacific Railroad Train MHOTU-23 With BNSF Railway Company Train MEAP-TUL-126-D With Subsequent Derailment and Hazardous Materials Relase, Macdona, Texas, June 28, 2004*, Railroad Accident Report NTSB/RAR-06/03, 2006, p. 55.

[27] Federal Railroad Administration, Department of Transportation, "Standards for Development and Use of Processor-Based Signal and Train Control Systems; Final Rule," *Federal Register*, vol. 70, no. 43, March 7, 2005, p. 11053.

including substantial public benefits, although the total value of these benefits is subject to debate. FRA concluded that mandating the implementation of PTC systems could not be justified based on "normal cost/benefit principles relying on direct railroad safety benefits."[28] FRA encourages railroads to voluntarily deploy PTC.

In 2006 the NTSB observed that it was encouraged that FRA had adopted performance standards for PTC in 2005 and that PTC pilot projects are underway at various railroads, but noted that the 2004 Macdona, Texas accident was "another in a long series of railroad accidents that could have been prevented had there been a PTC system in place at the accident location.[29]

Track Inspections

In 2006, defective track was the leading cause of train accidents. Frequently the defect causes a derailment. The number of derailments has risen from 1,816 (1996) to 2,138 (2006). For example, on March 12, 2007, a CSX train derailed in upstate New York. There had been several previous derailments in the area, and the FRA initiated an audit of CSX track in New York state. The audit found 78 track defects and one serious violation. FRA has announced that it will extend the audit to other railroads' tracks in New York state.[30]

To make better use of its limited inspection resources, FRA has begun to target its inspections to those sites deemed likely to have problems, based on quantitative analysis of risk factors and past inspections. Some types of track defects are difficult to detect by visual inspection, so FRA has acquired technology that can improve its track inspections. It has recently introduced two new automated track geometry inspection vehicles, which measure the width between rails, whether the rails are level, and whether the shape of each rail complies with federal standards intended to prevent derailments. This brings the track geometry inspection fleet to five. FRA expects that these new vehicles will enable it to triple the amount of track it inspects each year by automated means, to nearly 100,000 miles.[31] FRA has also acquired a vehicle-mounted joint-bar inspection system that can detect subtle visual cracks in joint bars that are often missed by traditional visual inspection. Broken joint bars are a leading cause of accidents due to track conditions.

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[28] Ibid.

[29] Ibid, p. 56.

[30] Press Release, Office of Public Affairs, U.S. Department of Transportation, "Federal Railroad Administrator Releases Results of Track Inspections on CSX and Outlines Next Rail Safety Actions during Visit to Rochester, New York," April 18, 2007.

[31] Press Release, Office of Public Affairs, U.S. Department of Transportation, "FRA Launches Two New Automated Inspection Vehicles to Detect Track Flaws; 100,000 Miles of Track to be Federally Inspected Each Year," May 16, 2007.

Highway-Rail Grade Crossing Safety

Collisions between trains and highway vehicles are the second-leading cause of rail-related fatalities, after trespassing. These collisions occur primarily at places where roads cross railroad tracks at the same level, or "at grade." There are some 240,000 such crossings, of which roughly 150,000 are public crossings (where the railroad tracks are crossed by a public road). The remaining 90,000 or so crossings are known as private crossings, where the railroad tracks are crossed by, for example, driveways or farm roads.

The number of collisions and fatalities at grade crossings has been reduced significantly over the past few decades, even as the amount of both train and highway traffic has significantly increased. Since the FRA was last authorized, train miles traveled have increased by 24% (from 655 million miles in 1994 to 810 million miles in 2006), while road vehicle miles traveled have increased by 26% (from 2.3 trillion miles in 1994 to 2.9 trillion miles on 2006). Meanwhile, the collisions at grade crossings decreased by 42% (from 4,979 in 1994 to 2,908 in 2006) However, the trend of improvement has leveled off in recent years. Given the progress that has been made in reducing fatalities at grade crossings over the past decade, some have questioned whether additional Congressional action is needed. On the other hand, highly visible crashes such as the Glendale, California incident[32] bring calls for additional efforts to improve safety at grade crossings.

Table 1: Selected Rail-Highway Grade Crossing Safety Data, 1996 to 2006

	1996-2000 Annual Average	2001-2005 Annual Average	2006
Collisions	3,724	3,081	2,918
Fatalities	441	368	368
Injuries	1,414	1,057	1,010

Source: Federal Railroad Administration Safety database; annual average calculations by CRS.

All public crossings are required to have warning devices. In most cases these are passive devices: crossbuck signs and pavement markings that warn motorists that they are approaching a railroad crossing, but do not indicate to motorists whether a train is approaching or not. However, train operators are required to sound the locomotive's horn as they approach any crossing.[33]

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[32] On January 26, 2005, in Glendale, a city within the metropolitan area of Los Angeles, a man parked a passenger vehicle on tracks used by commuter rail trains. A commuter train hit the car and derailed, striking a second commuter train and causing it to derail. Eleven passengers dies in the crash.

[33] Unless a community has created a quiet zone where the sounding of train horns has been (continued...)

Approximately 63,000 of the roughly 150,000 public crossings have been equipped with automated warning devices, such as warning lights and crossbars, that warn motorists if a train is approaching. These devices are installed by state and local transportation agencies; once installed, railroads are responsible for maintaining these devices and ensuring their proper functioning. These devices can be relatively expensive and generally must compete with other transportation improvements for funding.

The Federal Highway Administration has a Grade-Crossing Hazard Elimination Program that provides $220 million annually to states for safety improvements to grade crossings.[34] The eligibility of crossings for safety improvement funding is based on their risk, with the most dangerous crossings given priority. Most of the crossings in urban areas have been provided with automated warning devices. The provision of automated warning devices to the more than 80,000 public rail-highway crossings that do not have conventional automated warning devices is constrained by both the costs of the devices and by concern on the part of public authorities that increasing the protection provided to motorists at one crossing could be used in lawsuits to argue the inadequacy of protection provided at other crossings in the area.[35]

Another method of reducing grade crossing accidents is to eliminate the grade crossing. In some cases this is done by elevating the road or rail crossing, but this is a very expensive option. Most often this is done by closing the road where it crosses the railroad tracks. In 1994, FRA set a goal of reducing the-then 280,000 public and private grade crossings by 25% (to 210,000). That goal has not been achieved, though some 30,000 crossings have been closed since then. FRA encourages states and communities to close grade crossings based on the safety benefits. Communities are often reluctant to close grade crossings because of the inconvenience resulting from reducing the number of places where railroad tracks can be crossed.

FRA also supports Operation Lifesaver, a national non-profit railroad safety education program which attempts to reduce grade-crossing accidents by educating the public about the dangers of grade crossings and encouraging safe driving behavior at grade crossings. Operation Lifesaver programs in 49 states (and the District of Columbia) use volunteer trainers to make some 30,000 presentations a year to the public, as well as offering training for groups such as commercial truck drivers, school bus drivers, and emergency personnel, and providing public service announcements.

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[33] (...continued)
banned in exchange for grade crossing safety improvements that compensate for the absence of the horn's warning.

[34] Authorized in SAFETEA-LU (P.L. 109-59), this formula program is funded from the Highway Trust Account because the primary beneficiaries of grade crossing safety improvements are automobiles and trucks rather than the 100-ton rail vehicles.

[35] Federal Railroad Administration, Section-by-Section Analysis of the Federal Railroad Safety Accountability and Improvement Act, p. 12.

Fewer than 1% of grade crossing collisions are investigated by FRA each year.[36] Most of the information FRA relies on for analysis of grade crossing collisions comes from accident reports submitted by the railroads. According to the reports, many of these collisions result from incautious behavior on the part of motorists. The DOT Inspector General has recommended that FRA supplement the accident reports submitted by railroads with independent sources of information, such as police reports, event data recorders, and eyewitness accounts, in order to better evaluate the causes of collisions and the extent of railroads' compliance with safety regulations.[37] In response to this recommendation, FRA instituted a pilot study to assess the benefits and costs of analyzing information about crossing collisions from independent sources. The results of that study had not been made public as of late July 2007.

The DOT's Inspector General has recommended several other steps FRA could take in order to further reduce grade crossing collisions and fatalities. These include ensuring that railroads comply with the requirement to promptly report serious grade crossing collisions, so that the collisions can be investigated; increasing FRA's involvement in grade crossing collision investigations[38]; requiring railroads to clear obstructions (such as vegetation) near crossings to make it easier for motorists to see oncoming trains[39]; requiring railroads and states to provide updated information on grade crossings and the types of warning devices installed at each crossing[40]; and requiring states with the most grade crossings and most accidents to develop plans for identifying and remediating the most dangerous crossings.

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[36] Statement of Kurt W. Hyde, Assistant Inspector General for Surface and Maritime Programs, U.S. Department of Transportation, Before the United States Senate Committee on Commerce, Science, and Transportation Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, "Actions Needed to Further Improve Railroad Safety," CC-2007-060, May 22, 2007, p.5.

[37] Ibid.

[38] FRA relies largely on railroads' own accident reports for analysis of most collisions; FRA's 18 grade crossing investigators are able to investigate only around 1% of the roughly 3,000 annual collisions.

[39] 13 states have such requirements. At least 87 people died between 2001 and 2005 as a result of collisions where FRA determined that the ability of the motorists to look down the track was limited by vegetation growth at the crossings.

[40] FRA's Grade Crossing Inventory database is the only nationwide source of information on grade crossings; but it has not received reports on every crossing, and a recent review of the Inventory found that data on the average train and motor vehicle traffic through each crossing were around 11 years old, on average. Federal Railroad Administration, *Section-by-Section Analysis of the Federal Railroad Safety Accountability and Improvement Act*, p. 8 [available at [http://www.fra.dot.gov/Downloads/Counsel/legislation/Section-By-] SectionAnalysis.pdf, viewed 7/31/2007].

Legislative Proposals

Several hearings have been held in both the House and Senate during the 110th Congress on rail safety reauthorization issues. An Administration proposal to reauthorize FRA has been introduced, by request, as the "Federal Railroad Safety Accountability and Improvement Act" (H.R. 1516 and S. 918). No action has been taken on this legislation in either in the House or the Senate. Representative James Oberstar, Chairman of the House Transportation and Infrastructure Committee, has introduced a reauthorization proposal, the "Federal Railroad Safety Improvement Act of 2007" (H.R. 2095). A managers amendment was adopted by the full committee, with amendments, and was ordered to be reported out of the Transportation and Infrastructure Committee on June 14, 2007. Senator Frank Lautenberg, Chairman of the Senate Commerce Committee's Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, has introduced a reauthorization proposal, the "Railroad Safety Enhancement Act of 2007" (S. 1889).

The Federal Railroad Safety Accountability and Improvement Act (H.R. 1516/S. 918)

The Administration's reauthorization proposal included few significant changes to FRA's safety program. It did propose to convert the rail hours of service law to a regulation which DOT could amend through the regulatory process. It also proposed to create a safety risk reduction program within FRA to augment FRA's traditional regulatory approach to safety, which focuses on catching mistakes on the part of railroads. The safety risk reduction program would promote improvements in the processes railroads use in order to eliminate the causes of mistakes. The Administration asserted that this approach would maximize the safety results obtained with FRA's limited resources, but that to implement the program, FRA would have to acquire new skills and adopt new ways of thinking. The Administration also proposed to allow FRA to monitor the radio communications of railroads without their consent, in order to determine whether safety rules are being followed and for investigating accidents. The Administration observed that allowing FRA to monitor these communications without the knowledge of railroads and their employees would provide a more accurate picture of the degree of compliance with safety rules. No action has been taken on this legislation in either the House or the Senate, and it appears likely that Congress will focus on other legislation in the FRA reauthorization debate.

The Federal Railroad Safety Improvement Act of 2007 (H.R. 2095)

The Federal Railroad Safety Improvement Act of 2007 (H.R. 2095) was introduced by Representative James Oberstar, Chairman of the House Committee on Transportation and Infrastructure. A managers amendment was marked up and ordered to be reported, with amendments, by the Transportation and Infrastructure Committee on June 14, 2007. The bill had not yet been reported as of early August 2007. The discussion of the bill that follows is based on the text of the bill as introduced, information from the Committee's website, the summary of the bill's

provisions in the Congressional Budget Office's cost estimate of the bill as reported[41], and press reports of the markup session.[42]

H.R. 2095 would make significant changes to a number of FRA's safety programs. FRA would be renamed the Federal Railroad Safety Administration (FRSA). It would make several changes to address the issue of employee fatigue: it would increase the minimum rest period length under the rail hours of service act from 8 to 10 hours, and would authorize FRSA to further increase the length of that minimum rest period through regulation; it would phase in a limit of 10 hours on the amount of limbo time an employee could accrue each month; and it would require railroads to develop fatigue management plans in consultation with rail labor unions It would also require railroads to set minimum training standards for employees, to address concerns that employees are not being provided adequate training.

The bill would increase the number of safety inspectors from the current level of approximately 430 to 800. It would require Class I railroads to implement positive train control by December 2014, though DOT could extend that deadline through waivers. The bill would require safety improvements at grade crossings, such as posting of toll-free telephone numbers to notify railroads of emergency situations at grade crossings and requiring railroads to remove visual obstructions (such as vegetation) near grade crossings. It would also direct FRA to provide model legislation to state and local governments regarding safety at grade crossings. The bill would establish new civil penalties, and increase existing penalties, for failure to comply with federal safety regulations.

The bill would authorize a total of $1.2 billion over four years (FY2008-FY2011) for FRA's safety programs. Currently FRA receives around $200 million annually for its safety & operations and research & development accounts. The bill would also authorize three new grant programs: for deployment of positive train control systems ($10 million annually); improvements to grade crossings ($10 million annually); and for Operation Lifesaver ($1.5 million annually). The bill would also authorize $18 million for the construction of a tunnel at the Transportation Technology Center in Pueblo, Colorado, for safety and security training. It also requires the NTSB to assist the families of passengers involved in rail accidents that result in fatalities.

The bill also requires DOT to issue regulations requiring that, in non-signaled territory (i.e., areas where there are no signals along the track to inform train operators of track conditions or the approach of other trains), railroads must either install position indicators on track switches on main lines or operate trains at speeds that will allow train employees to observe, and stop in advance of, misaligned

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[41] Congressional Budget Office, *Cost Estimate: H.R. 2095, Federal Railroad Safety Improvement Act of 2007*, July 3, 2007.

[42] BNA, Inc., "House Transportation Committee Approves Amended Railroad Safety Improvement Bill," *Daily Report for Executives*, #115, June 15, 2007; Jessica Brady, Transportation Panel OKs Federal Rail Safety Legislation, *CongressDaily*, June 14, 2007; Kathleen Hunter and Lydia Gensheimer, "Committee Endorses Railroad Safety Legislation," *Congressional Quarterly*, June 14, 2007.

switches.[43] In October of 2006 FRA issued a notice of proposed rulemaking on, among other issues, preventing misaligned switches in non-signaled territory.

The Railroad Safety Enhancement Act of 2007 (S. 1889)

S. 1889 was introduced by Senator Frank Lautenberg, Chairman of the Senate Commerce Committee's Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security, on July 26, 2007. This bill would authorize $1.65 billion for FRA over six years (FY2008-2013), create two new grant programs (for rail safety technology and for rail safety infrastructure improvements), authorize FRA to hire 200 additional safety personnel over the period 2008-2013, and require railroads to implement positive train control technology by the end of 2018. It directs FRA to issue regulations regarding rail employee training, and includes provisions promoting safety at highway-rail grade crossings. The bill would increase the minimum amount of uninterrupted rest time and limit the amount of limbo time that can be accrued by rail employees under the rail hours of service statute, and would authorize DOT to amend the rail hours of service limits through the regulatory process. The bill would also allow FRA to monitor the radio communications of railroads without their consent, in order to determine whether safety rules are being followed and for investigating accidents.

Issues in Proposed Legislation

Fatigue and Hours of Service Limits. In H.R. 1516/S. 918, the Administration proposed to give the FRA authority to completely revise the rail hours of service laws through the regulatory process. In acknowledgment of the variety of working conditions within the rail industry, the Administration proposed to allow DOT to authorize and enforce compliance with fatigue management plans proposed by railroads as an alternative to compliance with an hours of service regulation, provided FRA judged that those plans provided a level of safety equal to or better than that provided by the regulation.

H.R. 2095, as introduced, would increase the minimum off-duty period under the rail hours of service law, and would give the DOT authority to increase the minimum off-duty period, or decrease the maximum on-duty period, by regulation. It would also require railroads to submit to DOT fatigue management plans designed to reduce employee fatigue and the likelihood of accidents and injuries caused by fatigue. The bill would also amend the hours of service law to increase the current minimum off-duty period from 8 hours to 10 hours, with a minimum of one 24-hour rest period every 7 days, reducing the maximum amount of time that could be worked in a week from the current level of 100 hours to 78 hours. The bill would also require that an employee's minimum rest time be undisturbed; that is, it would bar a rail company from communicating with a train employee in any manner that would

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[43] Between January and October 2005 there were nine serious train crashes resulting in ten deaths and over 600 people injured due to misaligned switches in non-signaled territory, resulting from rail employees failing to follow proper procedures. This led FRA to issue an emergency order in October of 2005 requiring railroads to retrain employees on switch-operating procedures and take other measures to control the problem.

disturb the employee's rest during the minimum rest period (except for emergencies). According to press reports, the bill as ordered to be reported by the committee would allow the DOT to waive the requirement of the minimum of one 24-hour rest period every seven days if a collective bargaining agreement provides an alternative arrangement that is equally safe.[44]

FRA testified against the provisions of H.R. 2095 that would amend the hours of service limits. Acknowledging the frustrations that the issue has produced and the desires of some Members of Congress to provide quick relief, FRA asserted that hours of service issues are complicated and need to be addressed within the overall context of fatigue prevention and management. Consequently, FRA urged that it be given the authority to completely revise the hours of service law through regulations based on the current scientific understanding of fatigue.[45]

AAR supported a revision of the hours of service law to reflect current scientific understanding of fatigue. AAR contended that rail companies do not want workers who are too tired to properly perform their duties, and are making efforts to address fatigue. AAR testified that, generally speaking, railroads do not object to the provision of H.R. 2095 that increase the minimum rest time from 8 to 10 hours, and that bar non-emergency communications from rail companies during the minimum rest period. However, AAR did object to the provision requiring that employees subject to hours of service limits have at least 24 consecutive hours off duty every 7 days as being inconsistent with railroad work schedules. AAR requested that period be extended by one day, to require that employees receive 24 consecutive hours off duty every 8 days (with an exception for signal employees). And while not objecting to the requirement that railroads prepare fatigue management plans, AAR did request some changes to the specifics of that requirement, including that the plans should only apply to those employees who are subject to the hours of service law.

Rail labor organizations also support a revision of the hours of service regime. They support the provisions of H.R. 2095 that would amend the current rail hours of service regime to ensure that an employee was undisturbed during their minimum rest period, and to require rail companies to develop fatigue management plans in consultation with employees.

Limbo Time. The Administration bill did not propose any direct change (though it is possible that limbo time would be affected as a result of the regulatory process of revising the hours of service regime, which the Administration proposed). H.R. 2095, as introduced, would have eliminated limbo time by amending the rail hours of service law to provide that time spent awaiting transportation and time spent in transportation from a duty assignment to the place of final release was on-duty

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[44] BNA, Inc., "House Transportation Committee Approves Amended Railroad Safety Improvement Bill," *Daily Report for Executives*, #115, June 15, 2007.

[45] Testimony of Joseph H. Boardman, Administrator, Federal Railroad Administration, U.S. Department of Transportation, before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Reauthorization of the Federal Rail Safety Program, May 8, 2007, pps. 4-5.

time (and thus would count against the employee's 12-hour on-duty time limit). According to press reports, H.R. 2095, as reported out of committee, did not eliminate limbo time, but would phase in a limit of 10 hours per month on the amount of limbo time that an employee could accrue.

While the FRA is concerned about the impact of limbo time on employee fatigue, the FRA Administrator objected that reclassifying limbo time as on-duty time would:

> shift the law from a safety frame of reference to a "fair labor standards" frame of reference, 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 ensure that any further reforms would be very costly indeed.[46]

The FRA Administrator urged instead that, given the complications of hours of service issues, and the need to consider them within the context of fatigue prevention and management, the FRA be given the authority to develop hours of service regulations based on a scientific understanding of fatigue.

The AAR contends that eliminating limbo time by reclassifying it as on-duty time would create "intractable scheduling problems" for railroads and result in increased costs that would be passed on to rail shippers. The railroads propose instead to address the safety-related fatigue implications of limbo time by providing additional time off to employees who have accrued at least one hour of limbo time. Also, the railroads propose a monthly maximum of 276 on-duty hours for train operating employees; limbo time would count toward that monthly maximum, even though it would not be considered on-duty time in any particular instance.[47] Failing that approach, the railroads would support providing FRA with the authority to deal with the issue through regulating rail hours of service.

Rail labor groups support the elimination of limbo time by reclassifying it as on-duty time. They argue that the Supreme Court decision classifying the time the original crew spends waiting for transportation as limbo time promotes the type of abuse — failing to get the crews to their final release point as soon as possible — that the 1969 amendment to the hours of service act was intended to remedy.[48] James

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[46] Testimony of Joseph H. Boardman, Administrator, Federal Railroad Administration, U.S. Department of Transportation, before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Reauthorization of the Federal Rail Safety Program, May 8, 2007, p. 5.

[47] Testimony of Edward R. Hamberger, President & Chief Executive Officer, Association of American Railroads, before the United States House of Representatives, Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on the Reauthorization of the Federal Rail Safety Program, May 8, 2007, pps. 5-6.

[48] Joint Statement of the Teamsters Rail Conference and the United Transportation Union before the U.S. House of Representatives Committee on Transportation and Infrastructure (continued...)

Brunkenhoefer, the United Transportation Union's National legislative Director, asserted that the limit of 10 hours per month on limbo time would effectively eliminate limbo time, because of the difficulty railroads would have in keeping track of the remaining limbo time for two separate members of a train crew.[49]

Positive Train Control. The Administration bill did not address PTC. H.R. 2095, as introduced, would require each Class I railroad to submit to DOT, within 12 months of passage of the bill, a plan for implementing a PTC system by December 31, 2014. The Secretary would be required to review the railroads' compliance with their plans, and issue a report to the pertinent Congressional committees by December 31, 2011 on the status of PTC implementation. No penalty is provided in the event that railroads do not comply with this requirement. As reported by the committee, H.R. 2095 also includes a $10 million annual grant program to support deployment of PTC.

AAR has testified that railroads are committed to the deployment of positive train control technology where it makes sense (e.g., on high-density main lines, not low-density branch lines) and on a schedule based on available funds. In light of the variety of train control systems and their differing advantages and disadvantages, which railroads are still evaluating, AAR objected to the fixed deadline for deployment proposed in H.R. 2095. AAR did support having railroads provide FRA with an implementation plan for PTC within 12 months of the act, suggesting that a firmer implementation timetable might be established at that point.[50]

The Brotherhood of Railroad Signalmen testified in support of the requirement for deployment of PTC.[51] Testimony from other rail labor groups did not comment on the PTC requirement in H.R. 2095. Rail labor is wary of PTC's implications for the issue of train operating crew size. Technology has enabled railroads to increase worker productivity, reducing the average train crew size from 4-5 persons to 2-3 persons in recent decades. There is concern on the part of rail labor that railroads would like to reduce the size of the train operating crew to one person, which would

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[48] (...continued)
Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Railroad Safety Authorization, May 8, 2007, p. 6.

[49] Quoted in the United Transportation Union's June 18, 2007 "Washington Update" [available at [http://www.utu.org/worksite/detail_news.cfm?ArticleID=36089], viewed 7/30/2007].

[50] Statement of Edward R. Hamberger, President & Chief Executive Officer, Association of American Railroads, before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, *Hearing on the Reauthorization of the Federal Rail Safety Program*, May 8, 2007, pps. 10-11.

[51] Testimony of W. Dan Pickett, International President, Brotherhood of Railroad Signalment, Before the U.S. House of Representatives Committee on Transportation and Infrastructure Subcommittee on Railroads, Pipelines, and Hazardous Materials, Hearing on Rail Safety Legislation, May 8, 2007, p. 4.

be feasible with PTC. The Brotherhood of Locomotive Engineers and Trainmen has expressed support for PTC as a supplement to "existing methods of train control."[52]

Track Inspections. The Administration bill did not propose any specific initiatives for track inspection. H.R. 2095, as introduced, would require FRA to increase its number of rail inspectors from the current figure of approximately 440 to at least 800 by 2012. FRA's rail safety inspectors are divided into five areas of expertise; the legislation does not specify how many inspectors should be added to each of the five groups. The bill would also direct FRA to purchase 6 Gage Restraint Measurement System vehicles and 5 track geometry vehicles, so that one of each type of vehicle can be deployed in each of FRA's eight regions.

Representatives of rail labor have testified in support of the proposed increase in the number of FRA safety inspectors. AAR testified that railroad companies do not see a need for an increase in the number of FRA safety inspectors.[53] FRA has noted that traditional visual inspections are not always able to identify subtle track flaws, and that they have acquired automated tracks inspection equipment that can identify flaws that human inspectors often miss, and can inspect track at a much faster rate than could be done by human inspectors.

Grade Crossing Safety. The Administration bill proposed requiring an update of FRA's grade crossing inventory. It also included provisions intended to encourage the development of new technologies to prevent accidents at rail crossings, and would protect suppliers, state and local governments, and railroads from tort liability for the use of such systems, if installed and maintained according to FRA's guidelines.

As introduced, H.R. 2095 would:

- require railroads to provide toll-free telephone numbers, to be posted at each grade crossing, to receive reports of malfunctioning safety devices and of highway vehicles blocking a crossing, in order to alert train crews and public safety officials;
- require railroads to remove visual obstructions (such as vegetation) that might obscure a motorist's or pedestrian's view of an oncoming train;
- require DOT to develop model legislation providing civil or criminal penalties, or both, for violations of grade crossing warning signals by motorists;
- require that the FRA's inventory of grade crossings be updated every 4 years; and

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[52] National Legislative Office, Brotherhood of Locomotive Engineers and Trainmen, "Issue: Crew Size", 2007 fact sheet [available at [http://www.bletdc.org/legislation/facts/crew_size/, viewed] 7/30/2007].

[53] Statement of Edward R. Hamberger, President & Chief Executive Officer, Association of American Railroads, before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Railroads, Pipelines, and Hazardous Materials, *Hearing on the Reauthorization of the Federal Rail Safety Program*, May 8, 2007, p. 17.

- authorize DOT to buy and distribute small promotional items to increase awareness of grade crossing safety issues.

The managers amendment to H.R. 2095 added authorization for $10 million annually in grants for safety improvements at grade crossings and $1.5 million annually for grants to Operation Lifesaver, a nonprofit organization promoting awareness of risks at grade crossings.

Representatives of rail labor testified in support of these provisions, except for the Administration's proposal providing protection from tort liability for new grade crossing protection technologies. AAR testified in favor of the provisions of H.R. 2095, while requesting that the provisions of the regulations governing the removal of visual obstructions should specify the distance to be kept clear and should preempt state and local laws to provide uniformity nationwide.

The provision of toll-free numbers for notification of emergency conditions at grade crossings has been of interest to Congress for some time. In 1994, Congress directed FRA to conduct a pilot program of the effectiveness of such a program; the results of that study, published in 2006, found that such programs provide safety benefits. FRA and NTSB have urged railroads to provide toll-free numbers at each grade crossing. As of 2006, approximately 50% of all crossings are included in an emergency notification system.[54] Many states already require railroads to remove visual obstructions near grade crossings, but the requirements are not uniform. The Highway-Rail Grade Crossing Hazard Elimination formula program currently provides $220 million annually to states for safety improvements at grade crossings.

[54] Federal Railroad Administration, *Pilot Programs for Emergency Notification Systems at Highway-Rail Grade Crossings*, May 2006, p. 2.