

January 24, 2007

SUMMARY OF SUBJECT MATTER

TO: Members of the Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Subcommittee on Railroads, Pipelines, and Hazardous Materials Staff
RE: Hearings on Reauthorization of the Federal Rail Safety Program

PURPOSE OF HEARINGS

The Subcommittee on Railroads, Pipelines, and Hazardous Materials is scheduled to meet on Tuesday, January 30 and Wednesday, January 31, 2007, at 2:00 p.m. to receive testimony on the Federal rail safety program and to discuss proposals for reauthorization of the Federal Railroad Administration.

BACKGROUND

The Federal Railroad Administration (FRA) administers the Federal rail safety program. The FRA is one of 10 agencies within the U.S. Department of Transportation (DOT). It was created in 1966 by the Department of Transportation Act, when all safety responsibilities of the Interstate Commerce Commission were transferred to the DOT.

The FRA's safety responsibilities were further enhanced by the Federal Railroad Safety Act of 1970, the Federal Railroad Safety Authorization Act of 1973, the Federal Railroad Safety and Hazardous Materials Transportation Amendments of 1974, the Federal Railroad Safety Authorization Act of 1976, the Federal Railroad Safety Amendments Act of 1978, the Federal Railroad Safety Authorization Act of 1980, the Railroad Safety and Service Improvement Act of 1982, the Rail Safety Improvement Act of 1988, the Railroad Safety Enforcement and Review Act of 1991, and the Federal Railroad Safety Authorization Act of 1994.

One of the main responsibilities of the FRA is to promulgate and enforce rail safety regulations. It also conducts research and development in support of improved rail safety. In

addition, the FRA has a number of responsibilities relating to rail security, including assessing civil and criminal penalties for actions that impair or impede the operation of railroad equipment.

The FRA has the authority to issue regulations and orders pertaining to rail safety and security and to issue civil and criminal penalties to enforce those regulations and orders. Under current law, all laws, regulations, and orders related to rail safety and security must be nationally uniform to the extent practicable. A State may adopt or continue in force a law, regulation, or order related to rail safety or security until the Secretary of Transportation or the Secretary of Homeland Security prescribes a regulation or issues an order covering the subject matter of the State requirement. A State may adopt or continue in force an additional or more stringent law, regulation, or order only in instances where the law, regulation, or order is necessary to eliminate or reduce an essentially local safety or security hazard; is not incompatible with a law, regulation, or order of the United States Government; and does not unreasonably burden interstate commerce.

The preemption standard has been a concern among some states and localities that have tried to adopt regulations requiring trains to operate at slower speeds and railroads to re-route hazardous materials around heavily populated areas. The preemption standard has also been an issue for rail accident victims who are seeking relief for injuries or damages from the railroads in court. A number of recent Federal court decisions have reached the conclusion that the standard does not just preempt state or local regulations that conflict with Federal regulations, but also preempts state tort liability law, thereby preventing the injured parties from bringing a state suit against the carrier. See *Lundeen v. Canadian Pacific Railway. Co.*, __F.3d__ (No. 05-1918, 8th Cir., May 16, 2006); *Mehl v. Canadian Pacific Railway. Ltd.*, (No. 4-02-cv-009, D.N.D. March 6, 2006). The Subcommittee will hear testimony on this issue.

The FRA relies on 421 Federal safety inspectors and 160 State safety inspectors to monitor the railroads' compliance with federally mandated safety standards. These inspectors operate out of eight regional offices and are divided into five safety disciplines – Track and Structures, Signal and Train Control, Motive Power and Equipment, Operating Practices, Hazardous Materials, and Industrial Hygiene. They also promote numerous initiatives under the Highway-Rail Grade Crossing and Trespasser Prevention Programs.

Central to the success of the Federal rail safety program is the ability to understand the nature of rail-related accidents and to analyze trends in railroad safety. To do this, the FRA relies heavily on information that is reported by the railroads following accidents and incidents. Railroad accident reports attribute more than 90 percent of grade crossing collisions to motorists. According to the DOT Inspector General, the FRA does not routinely review locomotive event recorder data, police reports, and other sources of information to determine the causes of the collisions or the need for further investigation.

The Inspector General also found that the FRA investigated few accidents (it investigates two-tenths of one percent of all accidents and incidents involving railroads) and recommended few findings of violations for critical safety defects identified through inspections. From 2002 through 2004, for example, FRA inspectors identified 7,490 critical safety defects out of 69,405 total safety defects related to automated grade crossing warning signals. Yet, FRA recommended only 347 critical defects, or about 5 percent, for findings of violations that carry a fine. According to the Inspector General, the FRA's policy of inspectors using their discretion in deciding whether to recommend a violation has resulted in the small number of critical defects recommended for

violations. Furthermore, after violations are determined, Federal law allows the FRA to negotiate-down the amount of civil penalties proposed, resulting in the collection of lower penalties, despite the many critical safety defects found.

The FRA has taken action to address some of the concerns raised by the Inspector General, which the Inspector General is expected to address at the hearing.

HUMAN FACTORS AND FATIGUE

According to the FRA, the total number of train accidents, including collisions and derailments, has increased from 2,504 in 1994 (when the FRA was last reauthorized) to 3,325 in 2005. The accident rate – which takes into account the corresponding increase in train miles traveled from about 655 million miles in 1994 to about 790 million miles in 2005 – has remained somewhat level. Meanwhile, fatalities and injuries have increased from 12 fatalities and 262 injuries in 1994 to 33 fatalities and 734 injuries in 2005.

The FRA reports that human factors are responsible for nearly 40 percent of all train accidents, and a new study confirms that fatigue plays a role in approximately one out of four of those accidents.

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. 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, are more likely to occur.

The hours of service law, which was originally enacted in 1907, and substantially amended in 1969, deals only with acute fatigue, not with cumulative fatigue. The law permits working 11 hours and 59 minutes followed by eight hours off duty and another 11 hours and 59 minutes on duty, perpetually. That means that a railroad employee who begins a shift on Monday at 8:00 a.m. can be called for a shift on Tuesday at 4:00 a.m., and a shift on Wednesday at midnight. This kind of “backward-rotating shift” can wreak havoc on an employee's circadian rhythm.

Additionally, the law does not address “limbo time,” which is the time when a crew's working assignment was finished and they are waiting for transport back to their homes. During limbo time, crewmembers are required to stay awake, alert, and able to respond to any situation and follow the railroad's operating rules, which means that crews are regularly on the job for 15 to 20 hours at a time.

According to the FRA Administrator, Joseph Boardman, “the specified maximum hours on duty and minimum periods off duty, coupled with provisions related to “limbo time” clearly function to permit the occurrence of cumulative fatigue. Because science related to biological rhythms had not been applied to the railroad workplace when Congress last addressed the issue, the hours of service law simply does not deal with the issue.”

The DOT on numerous occasions has formally submitted legislation to reform the hours of service law, supplement it with fatigue management requirements, or authorize the FRA to prescribe regulations on fatigue in light of current scientific knowledge. Currently, the statute contains no substantive rulemaking authority over duty hours. The FRA's lack of regulatory authority over duty hours, unique to FRA among all the safety regulatory agencies in the Department, precludes FRA from making use of almost a century of scientific learning on the issue of sleep-wake cycles and fatigue-induced performance failures. The FRA's general safety rulemaking power under 49 U.S.C. 20103 provides ample authority to deal with the entire subject of maximum work periods and minimum rest periods. However, the hours of service laws effectively preclude such a rational regulatory initiative because the chapter 201 authority may be used only to supplement the pre-1970 railroad safety statutes, not to supplant them. Despite the need for reform to address fatigue, no action has been taken.

GRADE CROSSING SAFETY

There are 243,016 grade crossings in the United States, of which 149,628 or 62 percent are public crossings. Of these public crossings, 63,387 or 42 percent have automatic warning devices.

Since the FRA was reauthorized in 1994, significant progress has been made in reducing collisions and fatalities at grade crossings. From 1994 to 2005, total train miles traveled in the United States increased from 655 million miles to 790 million miles, or 17 percent, and the total miles traveled by motor vehicle increased from 2.3 trillion miles to 2.9 trillion miles, or 20 percent. During the same period, collisions at the nation's grade crossings have decreased from 4,979 in 1994 to 3,041 in 2005. Fatalities have also decreased from 615 in 1994 to 357 in 2005, and injuries have decreased from 1,961 to 1,010 during the same period.

The Department of Transportation's (DOT) Inspector General reports that this significant decrease was attributable to the Department addressing much of the "low-hanging fruit," that is, working with the states and railroads to close grade crossings, install automatic gates and flashing lights at public crossings with a high probability for collisions, and educate the public about crossing safety. The Department also made progress in implementing safety initiatives included in its 1994 Grade Crossing Safety Action Plan.

A look at more recent statistics, however, show that the sharp decline in grade crossing statistics has leveled-off. From 2002 to 2005, collisions, fatalities, and injuries have both increased and decreased, but on average have remained around 3,042 collisions. The number of fatalities has remained around 350, and the number of injuries has remained around 1,030. This "leveling-off" combined with the upward trend in train and highway traffic show that more needs to be done to improve grade crossing safety.

Of course, the adequacy of the FRA's grade crossing safety program is dependent on information it receives from the railroads. In July 2004, a series of *New York Times* articles alleged problems with railroad accident reporting, investigations at grade crossings, and several other safety issues. Chairman Oberstar, Chairwoman Brown, and former Senator Ernest Hollings sent a letter to the DOT Inspector General requesting an audit of the FRA's activities to oversee safety on the nation's highway-rail grade crossings.

The Inspector General found that railroads failed to report 21 percent of reportable crossing collisions to the National Response Center (NRC). Railroads are required to report crossing collisions involving fatalities and/or multiple injuries to passengers or train crew members, and fatalities to motorists or pedestrians involved in grade crossing collisions to the NRC. Reports are to be made within two hours after the accidents, according to FRA and NTSB regulations. Immediate reporting allows the Federal Government to decide whether or not to conduct an investigation shortly after a crossing collision has occurred. The DOT Inspector General's analysis showed that 115, or 21 percent, of 543 reportable grade crossing collisions that occurred between May 1, 2003 and December 31, 2004 were not reported to the NRC. Although the 115 unreported crossing collisions, which resulted in 116 fatalities, were reported to the FRA within 30 to 60 days after the collision, as required, that was too late to allow Federal authorities to promptly decide whether or not to conduct an investigation. In July 2004, the FRA began reconciling its database with the NRC to identify unreported accidents, and in March 2005 began issuing findings of violations to railroads failing to follow reporting requirements.

The Inspector General also found that the Federal Government investigated only a small number of grade crossing collisions and needs to collect and analyze independent information on all crossing collisions. From 2000 through 2004, FRA investigated 47 of 376, or 13 percent, of the most serious crossing collisions that occurred — those resulting in three or more fatalities and/or severe injuries. No Federal investigations were conducted for the remaining 329 crossing collisions. Those collisions resulted in 159 fatalities and 1,024 injuries. FRA officials stated that the National Transportation Safety Board (NTSB) is the lead Federal agency responsible for investigating railroad accidents, not FRA. However, the NTSB tends to investigate only high-profile grade crossing collisions. For example, from 2000 through 2004, the NTSB conducted seven grade crossing collision investigations. Consequently, the Federal Government did not independently investigate most crossing collisions, but rather received information concerning the causes of collisions almost exclusively from the railroads.

The railroads' grade crossing accident reports attributed over 90 percent of the collisions that occurred from 2000 through 2004 to motorists, but FRA did not conduct its own investigations to verify the causes. Independently collecting and analyzing information about grade crossing collisions would substantially improve the FRA's ability to determine the causes of grade crossing collisions and better target collisions that should be investigated further. The collection and analysis of this information is especially important given the limited resources of the FRA's inspection staff. Nationwide, 55 of 421 FRA inspectors are assigned to inspect the 63,387 warning signal systems at grade crossings.

The low-level of FRA inspectors combined with the extensiveness of the U.S. railroad system limits the FRA's ability to investigate each accident or incident and inspect each railroad and mile of track. In 2004, the Federal Aviation Administration (FAA) conducted on-site investigations of 1,392, or 93 percent, of the 1,484 general aviation accidents that the FAA had responsibility for investigating in 2004. Unlike the FRA, however, the FAA has an Office of Accident Investigations staffed with 8 full-time investigators whose mission is to detect unsafe conditions and trends and to coordinate the process for corrective actions. In addition, the FAA uses personnel from other disciplines to conduct investigations, including 2,989 inspectors from its Office of Aviation Safety. To partially address this issue, on May 7, 2005 the FRA issued a safety advisory to facilitate the investigation of grade crossing accidents. The advisory reminds railroads of their responsibilities regarding accident investigations and offers technical assistance to local investigative authorities.

As mentioned earlier in the memo (see Background), the Inspector General found that the FRA recommended few violations for the many critical safety defects it identified and should increase its enforcement of existing safety regulations.

Since the release of the Inspector General report, the FRA has taken a number of actions to improve railroad reporting, investigate the information that is reported, and issue higher penalties for grade crossing violations. The Inspector General has tracked the FRA's progress in this area, and is expected to testify on any further developments in this area.

TRACK SAFETY

Track defects are the second leading cause of all train accidents. Most railroads use Continuous Welded Railroad (CWR) track, which is constructed with extremely long lengths of rail rather than traditional 39-foot lengths of rail. With far fewer rail joints than "jointed rail track," continuous welded rail offers a smoother ride and easier track and rail car maintenance. The long lengths of rail, however, are subject to high compressive or tensile forces which can result in the track buckling or pulling apart as the ambient temperature rises and falls.

The FRA issued the first Federal Track Safety Standards in 1971. The FRA addressed CWR in a rather general manner, stating that railroads must install CWR at a temperature that prevents lateral displacement of track or pull-aparts of rail ends and that CWR should not be disturbed at temperatures higher than the installation or adjusted installation temperature. In 1982, the FRA deleted that regulation because it believed it was too general in nature that it provided little guidance to railroads and was difficult to enforce.

The Rail Safety Enforcement and Review Act of 1992 required that the FRA evaluate procedures for installing and maintaining CWR. In 1994, Congress required DOT to evaluate cold weather installation procedures for CWR. In light of the evaluation of those procedures, as well as information resulting from the FRA's own research and development, the FRA included new CWR procedures in its 1998 revision of the Federal track safety standards. The new (and current) regulations require railroads to develop procedures that, at a minimum, provide for the installation, adjustment, maintenance, and inspection of CWR, as well as a training program and minimal recordkeeping requirements. The regulations do not dictate which procedures a railroad must use in its CWR plan, but rather allow each railroad to develop and implement a CWR plan based on its own procedures.

A series of accidents have called into question the adequacy of these regulations, the railroads' track inspection and maintenance programs, and the FRA's oversight of those programs.

On January 18, 2002, a Canadian Pacific freight train derailed 31 of its 112 cars near Minot, North Dakota. Five tank cars carrying anhydrous ammonia, a liquefied compressed gas, catastrophically ruptured, and a vapor plume covered the derailment site and surrounding area. About 11,600 people that occupied the area were affected by the vapor plume. One resident was fatally injured, and 60 to 65 residents of the neighborhood nearest the derailment site were rescued. As a result of the accident, 11 people sustained serious injuries, and 322 people, including the two

train crew members, sustained major injuries. Damages exceeded \$2 million, and more than \$8 million has been spent in environmental remediation.

In its Railroad Accident Report, the NTSB determined that the probable cause of the derailment was “an ineffective Canadian Pacific Railway inspection and maintenance program that did not identify and replace cracked joint bars before they completely fractured and led to the breaking of the rail at the joint.” The NTSB also found that the FRA’s requirements regarding rail joint bars in CWR were ineffective and that the FRA’s oversight of Canadian Pacific’s CWR program was ineffective, because the FRA neither reviewed the CWR program nor ensured that its track inspectors had copies of the CWR programs to determine if the railroad was in compliance with it.

On April 6, 2004, an Amtrak train derailed on Canadian National-owned and maintained track near Flora, Mississippi. The entire train derailed, including one locomotive, one baggage car, and eight passenger cars. The derailment resulted in one fatality, three serious injuries, and 43 minor injuries. The equipment costs associated with the accident totaled about \$7 million. In its Railroad Accident Report, the NTSB determined that the probable cause of the accident was “the failure of the Canadian National Railway Company to properly maintain and inspect its track, resulting in rail shift and the subsequent derailment of the train, and the Federal Railroad Administration’s ineffective oversight to ensure proper maintenance of the track by the railroad.”

On October 16, 2004, a Union Pacific (UP) freight train derailed three locomotives and 11 cars near Pico Rivera, California. Small amounts of hazardous materials were released from the transported cargo. There were no injuries to area residents, the train crew, or the emergency response personnel. UP estimated the monetary damage at \$2.7 million. In its Railroad Accident Brief, the NTSB determined “that the probable cause of the derailment was the failure of a pair of insulated joint bars due to fatigue cracking. Contributing to the accident was the lack of an adequate on-the-ground inspection program for identifying cracks in rail joint bars before they grow to critical size.”

As a result of the accidents, Congress included a provision in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which required each track owner using CWR track to include in its CWR plan procedures to improve the identification of cracks in rail joint bars; instructed FRA track inspectors to obtain copies of the most recent continuous welded rail programs of each railroad within the inspectors’ areas of responsibility and require that inspectors use those programs when conducting track inspections; required the FRA to establish a program to periodically review CWR joint bar inspection data from railroads and track inspectors; and emphasized the need for the FRA to require railroads to increase the frequency of inspection or improve the methods of inspection of joint bars in CWR.

EXPECTED WITNESSES

The Honorable Joseph Boardman
Administrator
Federal Railroad Administration

The Honorable Mark Rosenker
Chairman
National Transportation Safety Board

The Honorable Calvin Scovel
Inspector General
U.S. Department of Transportation

Katherine Siggurud
Director, Physical Infrastructure Issues
U.S. General Accounting Office

Mr. Edward Hamberger
President and Chief Executive Officer
Association of American Railroads

Mr. Richard Timmons
President
American Short Line and Regional Railroad Association

Mr. Edward Wytkind
President
Transportation Trades Department, AFL-CIO

Mr. John Murphy
Rail Conference Director
International Brotherhood of Teamsters

Ms. Shannon Van Dyck
Attorney-at-law
On behalf of the American Association for Justice