[4910-06P]

DEPARTMENT OF TRANSPORTATION
Federal Railroad Administration

FRA Emergency Order No. 24

[Docket No. FRA-2005-22796, Notice No. 1]

Emergency Order Requiring Special Handling, Instruction and Testing of Railroad Operating Rules Pertaining to Hand-Operated Main Track Switches

SUMMARY: The Federal Railroad Administration (FRA) of the United States Department of Transportation (DOT) has determined that public safety compels issuance of this Emergency Order (EO) requiring railroads to modify their operating rules and take certain other actions necessary to ensure that railroad employees who dispatch non-signaled territory or who operate hand-operated main track switches (switches) in non-signaled territory, ensure the switches are restored to their proper (normal) position after use. For purposes of this EO, "employee" means an individual who is engaged or compensated by a railroad or by a contractor to a railroad to perform any of the duties defined in this EO. This EO is intended to reduce the risk of serious injury or death both to railroad employees and the general public.

FOR FURTHER INFORMATION CONTACT: Douglas H. Taylor, Staff Director, Operating Practices Division, Office of Safety Assurance and Compliance, FRA, 1120 Vermont Avenue, N.W., RRS-11, Mail Stop 25, Washington, D.C. 20590 (telephone 202-493-6255); or Alan H. Nagler, Senior Trial Attorney, Office of Chief Counsel, FRA, 1120 Vermont Avenue, N.W., RCC-11, Mail Stop 10, Washington, D.C. 20590 (telephone 202-493-6038).

AUTHORITY: Authority to enforce Federal railroad safety laws has been delegated by the Secretary of Transportation to the Federal Railroad Administrator. 49 CFR 1.49. Railroads are

subject to FRA's safety jurisdiction under the Federal railroad safety laws. 49 U.S.C. 20101, 20103. FRA is authorized to issue emergency orders where an unsafe condition or practice "causes an emergency situation involving a hazard of death or personal injury." 49 U.S.C. 20104. These orders may immediately impose "restrictions and prohibitions . . . that may be necessary to abate the situation." (Ibid.)

BACKGROUND: FRA's regulations, at 49 CFR Part 217, require each railroad to instruct its employees on the meaning and application of its code of operating rules, and to periodically test its employees to determine their level of compliance. Railroad operating rules pertaining to the operation of switches provide that the normal position for a main track switch is lined and locked for movement on the main track when not in use. Another related operating rule provides that, where trains or engines are required to report clear of the main track, such a report must not be made until the switch and derail, if provided, have been secured in their normal position. Where no signal or other system is in service that indicates through wayside or cab signals, or both, the possibility that a main track switch may not be in its normal position, compliance with these railroad operating rules is the critical element in ensuring route integrity for main track movements.

There may be more than one cause that contributes to non-compliance with these important operating rules. One recurrent scenario of non-compliance occurs when a train crew has exclusive authority to occupy a specific track segment until they release it for other movements and that train crew goes off duty without lining and locking a hand-operated main track switch in its normal position. In that scenario, the train crew's mistake in leaving a main track switch lined for movement to a secondary track was the last act or omission that resulted in

a catastrophic accident.

During the years 2000 through 2003, railroads reported no more than three accidents per year that were caused by improperly lined hand-operated main track switches in non-signaled territory and one of the most serious of those wrecks was caused by vandalism. During that four year period, there were ten total injuries and two fatalities (all to railroad employees).

In comparison, in 2004 there was a sharp increase in the frequency and severity of collisions resulting from improperly lined main track switches as shown on the attached charts. In 2004, there were a total of eight accidents resulting in eight injuries to railroad employees. The increase in the number of accidents and injuries did not go unnoticed by the industry as some railroads amended their operating rules to address this issue.

On January 6, 2005, the issue of improperly lined main track switches became national news as the media reported on a catastrophic accident that occurred in Graniteville, South Carolina. This accident occurred when a Norfolk Southern Railway Company (NS) freight train was unexpectedly diverted from the main track onto an industrial lead. The NS train struck a standing train on the industrial lead, derailing three locomotives and 16 cars. The collision resulted in the rupture of a tank car containing chlorine, fatal injuries to eight citizens and one railroad employee, the evacuation of 5,400 local residents, and injuries to 630 people. Damages to equipment and track totaled more than $2.3 million. FRA immediately began deliberating on a course of action to prevent this type of accident. [The National Transportation Safety Board (NTSB) is investigating this accident, and will officially determine the probable cause of the accident which FRA is expressly not doing.]

On January 8, 2005, a BNSF Railway Company (BNSF) freight train was unexpectedly

diverted onto an industrial track in Bieber, California. The BNSF train struck two loaded grain cars, derailing seven locomotives and 14 cars. Two railroad employees were injured. Damages to equipment and track totaled more than $1 million.

FRA decided to start a rulemaking proceeding and took action on January 10, 2005, to abate the safety risks during the proceeding by issuing Safety Advisory 2005-01, Position of Switches in Non-Signaled Territory (Safety Advisory). The issuance of a safety advisory is an opportunity for the agency to inform the industry and the general public regarding a safety issue, to articulate agency policy, and to make recommendations. FRA explained in the Safety Advisory that "[a] review of FRA's accident/incident data shows that, overall, the safety of rail transportation continues to improve. However, FRA has particular concern that recent accidents on Class I railroads in non-signaled territory were caused, or apparently caused, by the failure of railroad employees to return manual (hand-operated) main track switches to their normal position, i.e., lined for the main track, after use. As a result, rather than continuing their intended movement on the main track, trains approaching these switches in a facing-point direction were unexpectedly diverted from the main track onto the diverging route, and consequently derailed."

FRA also explained what we could do if the emergency situation did not abate. That is, in the Safety Advisory, FRA stated that we would consider "the need for any additional action to address this situation, such as regulatory action or additional advisories. We are considering the form that any additional action might take, its specific content, and any necessary variations based on differing types of operations. . . . We are committed to taking whatever action appears necessary to prevent any further death or serious injury that might arise from additional failures to comply with the basic operating rules concerning the proper positioning of main track

switches."

FRA's decision to make recommendations was based in part on the fact that several railroads had already initiated voluntary actions to enhance the applicable railroad operating rules during the last few months of 2004. FRA wanted to give all railroads the same opportunity to self-correct in the expectation that it would suffice to ameliorate this problem until, as discussed below, a rule could be issued. Furthermore, the purpose of the Safety Advisory was to heighten employee awareness of the importance of restoring main track switches to their normal position in non-signaled territory. A key element of the Safety Advisory was to promote and enhance intra-crew communication about the operation and position of main track switches.

With the exception of a similar accident that occurred on CSX Transportation (CSX) in Banks, Alabama, on January 11, 2005, one day after publication of the Safety Advisory, and an accident, with relatively minor results, that was caused by an employee of a contractor to the Nashville and Eastern Railroad (NERR), in Mt. Juliet, Tennessee on February 23, 2005, there was a respite of nearly six months in accidents resulting from improperly lined main track switches in non-signaled territory. During this respite, FRA began a rulemaking on this subject and other human factor causes of accidents. For about the last decade, FRA has sought recommendations from its standing Federal advisory committee on most of the subjects on which FRA proposed to issue substantive safety rules. In FRA's view, this process produces better rules because it generates more substantive participation in rulemakings from experts representing both management and labor, and yields better and faster compliance with the final rule from the regulated community which helped craft it. On May 18, 2005, at the first opportunity to address this subject, the Railroad Safety Advisory Committee (RSAC or Committee) agreed to take up the task of reviewing how to reduce human factor caused train accidents/incidents and related employee injuries. The full Committee formed a smaller

Operating Rules Working Group (Working Group) comprised of people expert in this subject to do the bulk of the work in formulating recommendations to complete the task, and a target date of February 10, 2006, was established for the Working Group to report its findings and recommendations back to the full RSAC.

Since May, the Working Group has met twice and progress toward a consensus recommendation has been made. One of the key elements in those discussions is the proper operation of main track switches in non-signaled territory. Through the Working Group's activities, FRA has already heard comments on this issue from organizations representing every affected party within the industry. The Working Group has three additional meetings scheduled in order to meet the February deadline for recommendations. FRA's goal is to publish a proposed rule in 2006, and a final rule soon thereafter.

Working with a Federal advisory committee to generate consensus recommendations takes many meetings over a number of months, and rulemaking can take many more months. During the time it takes to accomplish these tasks, new accidents can occur that require more immediate action. That has happened here. After six months, the Safety Advisory no longer worked well enough to prevent more accidents.

First, in July 2005, two accidents, with relatively minor results occurred. As the results were minor, and, FRA believed awareness was heightened due to the publication of the Safety Advisory and the RSAC's activities, FRA did not identify an emergency situation in July. The following is a synopsis of those two accidents.

- July 7, 2005 - Willamette & Pacific Railroad (WPRR), Sheridan, Oregon - a maintenance of way work train was parked in a siding and the switch was left lined for the siding. A local freight train, operating at a speed of 12 miles per hour (mph), was unintentionally diverted into the siding due to an improperly lined switch. The freight train struck the

lead locomotive of the standing work train. Both locomotives derailed.

- July 9, 2005 - Dakota, Minnesota and Eastern Railroad (DME), Florence, Minnesota - the crew of an eastward BNSF light locomotive consist departing DME property and returning to BNSF trackage, failed to restore the junction switch to its normal position. Subsequently, an eastward DME train, operating at a speed of 38 mph, encountered an improperly lined switch. As a result, the lead locomotive derailed and was destroyed.

Beginning six weeks later, three more accidents occurred with more serious results. The three recent accidents described below occurred over a 28-day period and clearly demonstrate the need for additional action beyond the Safety Advisory, as these three collisions, overall, resulted in fatal injuries to one railroad employee, non-fatal injuries to eight additional railroad employees, an evacuation of civilians, and railroad property damage of approximately two million dollars. Furthermore, each of these accidents could have been worse, as each had the potential for additional deaths, injuries, property damage or environmental damage. Two of the accidents could have involved catastrophic releases of hazardous materials as these materials were present in at least one of the train consists that collided.

- August 19, 2005 - Kansas & Oklahoma Railroad (KO), Nickerson, Kansas - an eastward loaded grain train was operating at a speed of 26 mph when it encountered an improperly lined switch at the west end of the siding. The train struck a standing cut of cars, resulting in the derailment of two locomotives and two freight cars. The locomotive engineer was severely injured.
- August 21, 2005 - Union Pacific Railroad (UP), Heber, California - an eastward freight train operating at a speed of 30 mph encountered an improperly lined switch at the west end of a siding. The train struck a standing cut of cars, resulting in the derailment of two locomotives and two freight cars. The control compartment on the lead locomotive was

completely destroyed. The three crewmembers survived only by quickly throwing themselves on the floor of the locomotive immediately before impact. Considering the destruction to the locomotive control compartment, the crewmembers likely would have been seriously injured or killed, but for their quick action. The locomotive engineer, conductor and trainman were taken to a local hospital where they were treated and released.

- September 15, 2005 - UP, Shepherd, Texas - a southward freight train operating at a speed of 36 mph, collided head-on with a northward UP freight train that was standing in a siding. The collision occurred when the southward train encountered an improperly lined switch at the north end of the siding. The southward train struck the standing train and derailed two locomotives and 13 cars. The two locomotives and the four leading cars of the standing train were also derailed. The engineer of the standing train was fatally injured and four other crewmembers were injured. Eleven of the 13 cars contained hazardous materials. Although, no hazardous materials release occurred, a precautionary evacuation of 500 people was ordered by local authorities for a period of 12 hours.

Each of the accidents that precipitated the Safety Advisory and this EO either resulted in, or had the potential to result in, serious injuries, fatalities, and catastrophic releases of hazardous materials. As previously stated, the industry achieved only a temporary respite from accidents of this type after the Safety Advisory's publication, instead of the long-term solution that FRA expected. The sudden and recent occurrence of five of this type of accident is a clear indication that the Safety Advisory has lost its effectiveness. Only with additional action can FRA secure compliance with these important railroad operating rules. FRA considered issuing another Safety Advisory, but that might at best only provide another temporary pause. As described above, FRA is currently seeking a permanent solution through rulemaking. The issuance of this EO is

intended to accomplish what the Safety Advisory could not: implement safety practices that will abate the emergency until FRA can complete rulemaking after receiving the RSAC's expert advice.

FINDING AND ORDER: Collisions, deaths and injuries resulting from improperly lined main track switches began in 2004 to rise very sharply as shown on the attached charts. FRA's issuance of a Safety Advisory in early January 2005, recommending practices designed to prevent such events, led to a nearly six month respite. The sharply rising and accelerating trend of collisions, deaths and injuries resulting from improperly lined main track switches, which the Safety Advisory abated only temporarily, constitutes an emergency situation involving a hazard of death or personal injury which FRA must act to stop.

Even considering the nearly six-month respite from January 12 through July 6, the Nation has experienced more accidents resulting from improperly lined hand-operated switches on main track in non-signaled territory than it experienced in any of the previous five years. To date in 2005, there were nine accidents resulting in 640 injuries and 10 fatalities. Given the cloud of chlorine that covered much of Graniteville, South Carolina, on January 6, 2005, as a result of one of these accidents, it is fortuitous that the death toll is not significantly higher; in addition, the same could be said for the Nickerson, Kansas and Shepherd, Texas accidents that occurred on August 19, 2005 and September 15, 2005 respectively as trains involved in those accidents were transporting tank cars containing hazardous materials. Any reasonable extrapolation of the current trends of wrecks, deaths, and injuries makes clear that more accidents of this type will occur in the absence of this EO, that many of those accidents will result in injuries or deaths, or both, that a significant percentage of those wrecks will involve trains carrying hazardous materials, and that each of those wrecks will pose a significant risk that a large amount of hazardous material will be released. Considering the severity of accidents related to improperly

lined hand-operated main track switches in non-signaled territory, the prevalence of hazardous materials on trains in non-signaled territory, and the recent and dramatic increase in the rate of occurrence of these accidents, decisive action is necessary now.

FRA concludes that non-compliance with certain operating rules and practices on the Nation's railroads concerning the proper positioning of hand-operated main track switches in non-signaled territory lacking the safeguards of facing point protection is a combination of unsafe conditions and practices which causes an emergency situation involving an imminent and unacceptable hazard of death or personal injury. FRA further concludes that reliance solely on employee compliance with railroad operating rules related to the operation of hand-operated main track switches in non-signaled territory, without a Federal enforcement mechanism, is inadequate to protect the public safety.

FRA also considered whether to apply this EO nationwide or limit it to those railroads that have had recent accidents. A review of the 2005 accidents reveals that four major railroads and four other, smaller railroads were involved in accidents. On June 12, 2004, an alert Amtrak engineer made a full service application of the train brake and stopped three car lengths into a siding, thereby avoiding a potentially serious accident on CSX track in Apex, North Carolina. Going back to 2000, five additional smaller railroads were involved in accidents. Over the last six years, 41% of this type of accident has had at least one train consist involved that was carrying hazardous material, i.e., 11 out of 27 accidents. Given the wide distribution of the accidents across various railroads, the similarity of physical conditions and operating practices among railroads of all sizes nationwide, the high number of new and inexperienced operating employees on many railroads, and the very high potential for serious harm, limiting the EO's effectiveness to only a small number of railroads would be an unjustifiable risk to public safety and the safety of railroad employees.

Accordingly, pursuant to the authority of 49 U.S.C. 20104, delegated to me by the Secretary of Transportation (49 CFR 1.49), it is hereby ordered that each railroad and its employees, including employees of a contractor to a railroad, who operate hand-operated main track switches in non-signaled territory and who dispatch non-signaled territory, do, at a minimum, the following:

(1) Instruction

Each employee subject to this EO shall be instructed on this EO and the railroad's operating rules relating to the operation of hand-operated main track switches in non-signaled territory. The subject matter of the instruction shall include, but not be limited to:

- Operation of main track switches;
- Position of main track switches;
- Restoring main track switches to their normal position;
- Securing (locking) main track switches;
- Correspondence of switch targets to switch position;
- Clearing limits of main track authority;
- Job briefings; and
- Switch Position Awareness Form (SPAF).

After receiving initial instruction, all employees must receive periodic instruction, in accordance with 49 CFR 217.11. Railroads shall maintain records of both initial and periodic instruction available for inspection and copying by representatives of the FRA during normal business hours. These records shall be maintained for a period of at least two years following the end of the calendar year during which the instruction was conducted.

(2) Hand-operated main track switches

Employees operating hand-operated main track switches in non-signaled territory shall be

qualified on the railroad's operating rules relating to their operation. No employee is permitted to operate or verify the position of a hand-operated main track switch in non-signaled territory unless that person is qualified on the railroad's operating rules relating to their operation.

Employees operating hand-operated main track switches in non-signaled territory are individually responsible for the proper operation of these switches, including restoration to their normal position after use. Employees operating hand-operated main track switches in non-signaled territory must visually ensure that:

- Hand-operated main track switches are properly lined for the intended route; and
- The switch points fit properly and the switch target, if so equipped, corresponds with the switch's position.

The normal position of a main track switch shall be designated by the railroad and the switch must be lined and locked in that position when not in use, except when the switch is left in the charge of a crewmember of another train or the train dispatcher directs otherwise. When switches are not being operated, they must be locked, hooked or latched if so equipped.

Before releasing the limits of a main track authority, the employee releasing the limits must report to the train dispatcher that all hand-operated main track switches operated have been restored to their normal position, unless the train dispatcher directs otherwise. The train dispatcher must confirm the switch positions with the employee releasing the limits before clearing the limits of the authority. Additionally, in the case of a train, the train dispatcher must confirm that both the conductor and engineer have initialed the SPAF as required.

(3) Switch Position Awareness Form (SPAF)

Employees operating hand-operated main track switches in non-signaled territory shall complete a SPAF. Employees are individually responsible for the proper completion of these forms. The form must contain:

- Train symbol, job number or other unique identifier;
- Date;
- Subdivision;
- Employee's name; in the case of a train, both the Engineer's and Conductor's names;
- Name and location of each main track switch operated by any employee;
- Time switch was initially reversed;
- Time switch was finally returned to the normal position;
- Initials of the employee handling the switch;
- Engineer's initials for each entry; and
- Conductor's signature when the form is completed.

Entries made with respect to a specific hand-operated main track switch in non-signaled territory must be recorded as soon as practicable after the switch is reversed, and as soon as practicable after the switch is returned to its normal position before leaving the location. All information required on the SPAF must be entered before an employee reports clear of the limits of the main track authority. SPAFs shall be retained for a period of five days and made available to representatives of the FRA for inspection and copying.

(4) Job Briefings

Job briefings shall be conducted by employees in connection with the operation of hand-operated main track switches in non-signaled territory:

- Before work is begun;
- Each time a work plan is changed; and
- At completion of the work.

(5) Radio Communication

In the case of a train, each time a crewmember operates, i.e., changes the position of, a hand-operated main track switch in non-signaled territory, the crewmember shall communicate with the engineer by radio while physically at the switch location, stating the switch name and location, and the position of the switch (normal/reverse). Before movement may occur, the engineer must acknowledge that information by radio.

If radios become inoperable, all crewmembers must conduct a job briefing regarding the use of hand-operated main track switches in non-signaled territory before use, noting the inoperable radio on the SPAF.

(6) Operational tests and inspections

The railroad's program of operational tests and inspections under 49 CFR Part 217 shall be revised as necessary to include the requirements of this EO, and shall specifically provide for a minimum number of such tests per year.

(7) Distribution of Emergency Order

A copy of this EO shall be provided to all employees affected by this EO. A written receipt or acknowledgment must be retained permanently for each affected employee.

RELIEF: Petitions for special approval to take actions not in accordance with this EO may be submitted to the Associate Administrator for Safety, who shall be authorized to dispose of those requests without the necessity of amending this EO. In reviewing any petition for special review, the Associate Administrator for Safety shall only grant petitions in which a petitioner has clearly articulated an alternative action that will provide, in the Associate Administrator for Safety's judgment, at least an equivalent level of safety as this EO provides. A copy of this petition should be submitted to the Docket Clerk, Department of Transportation Central Docket Management System, Nassif Building, Room Pl-401, 400 Seventh St., S.W. Washington, D.C. 20590. The form of such request may be in written or electronic form consistent with the

standards and requirements established by the Central Docket Management System and posted on its web site at *http://dms.dot.gov.*

FRA recognizes that certain railroad operating rules or equipment used by some railroads already provide a level of safety equivalent to this EO. If all of a railroad's hand-operated main track switches in non-signaled territory are covered by one or more of the protective measures identified below, a railroad need not apply for relief from this EO as relief shall be deemed automatically granted. Relief from this EO is automatically granted when:

- Operating rules require trains to approach all facing point hand-operated switches in non-signaled territory prepared to stop;
- Hand-operated main track switches in non-signaled territory (unless out of service) are protected by distant switch indicators; or
- Hand-operated main track switches in non-signaled territory are protected by switch point indicators, e.g., BNSF's automatic switches and CSX's self restoring switches, unless these switches are operated by hand.

PENALTIES: Any violation of this EO shall subject the person committing the violation to a civil penalty of up to $27,000. 49 U.S.C. 21301, 28 U.S.C. 2461, and see 69 FR 30591 (May 28, 2004). "Person" is defined by statute to include corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals. 1 U.S.C. 1. FRA may, through the Attorney General, also seek injunctive relief to enforce this EO. 49 U.S.C. 20112.

EFFECTIVE DATE AND NOTICE TO AFFECTED PERSONS: Upon issuance of this EO, railroads shall immediately initiate steps to implement this EO. Railroads shall complete implementation no later than November 22, 2005. Notice of this EO will be provided by publishing it in the Federal Register.

REVIEW: Opportunity for review of this EO will be provided in accordance with 49 U.S.C.

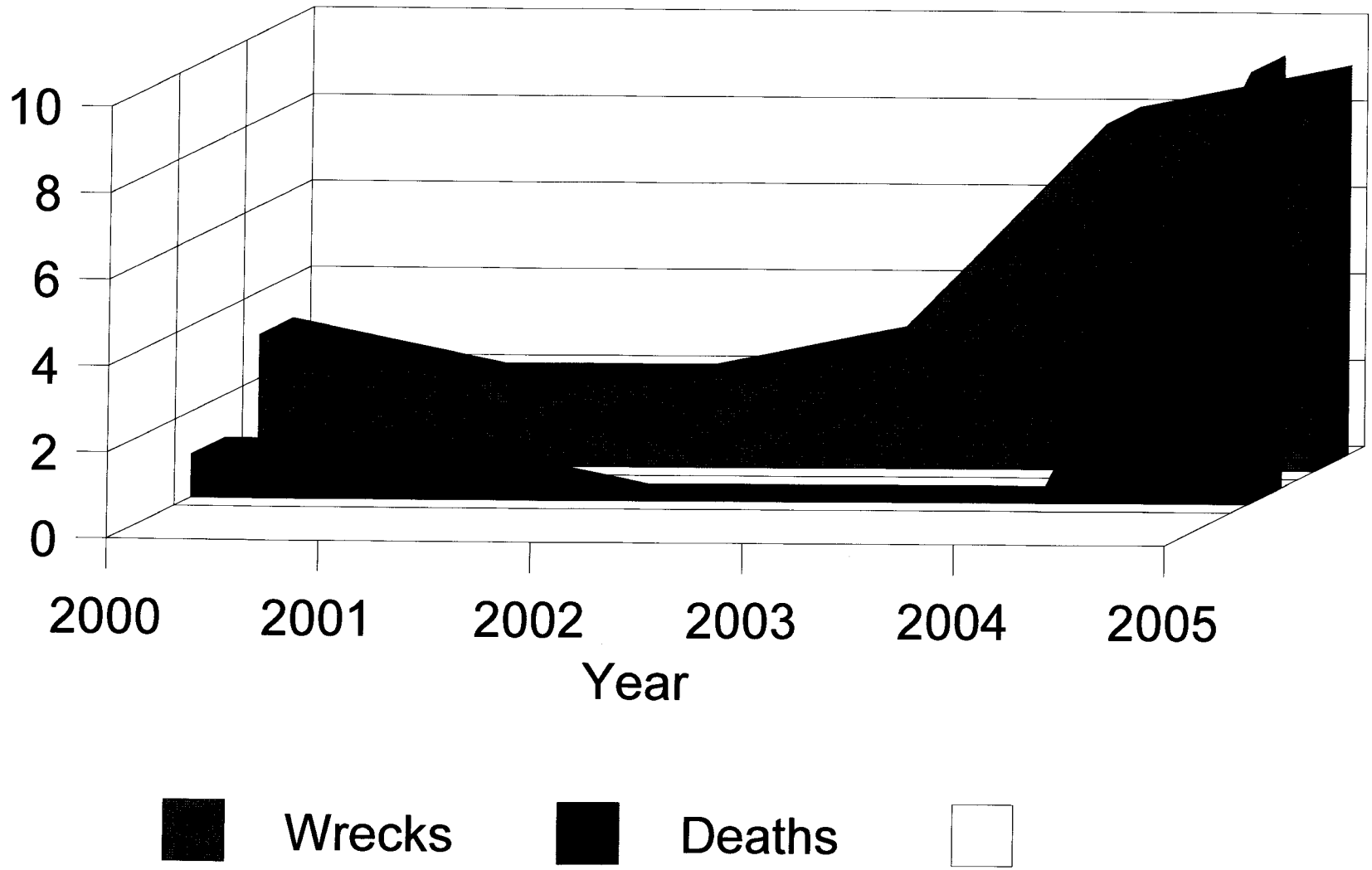
20104(b) and section 554 of Title 5 of the United States Code. Administrative procedures governing such review are found at 49 CFR Part 211. See 49 CFR 211.47, 211.71, 211.73, 211.75, and 211.77.

Issued in Washington, D.C. on October 19th, 2005.

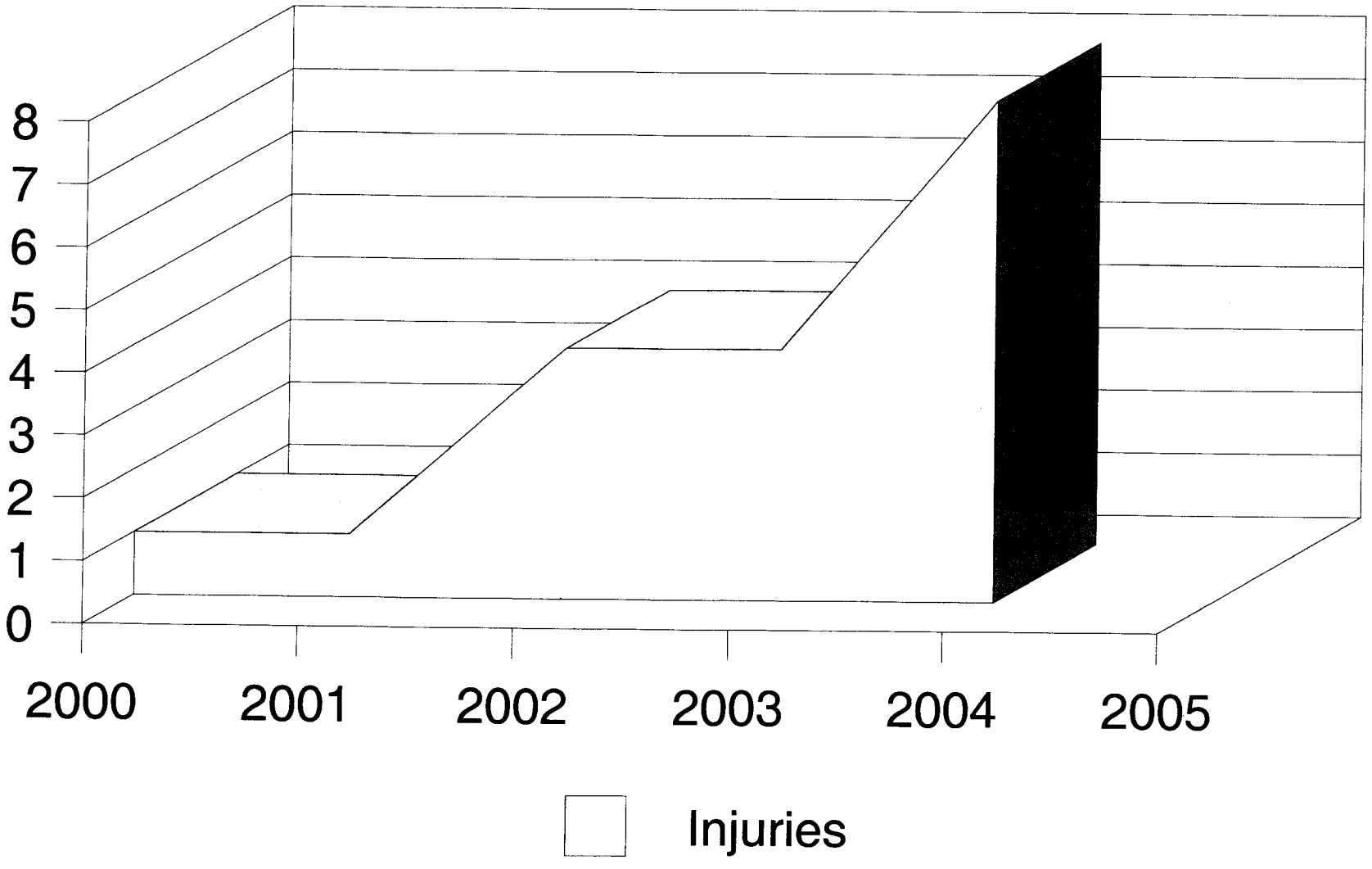
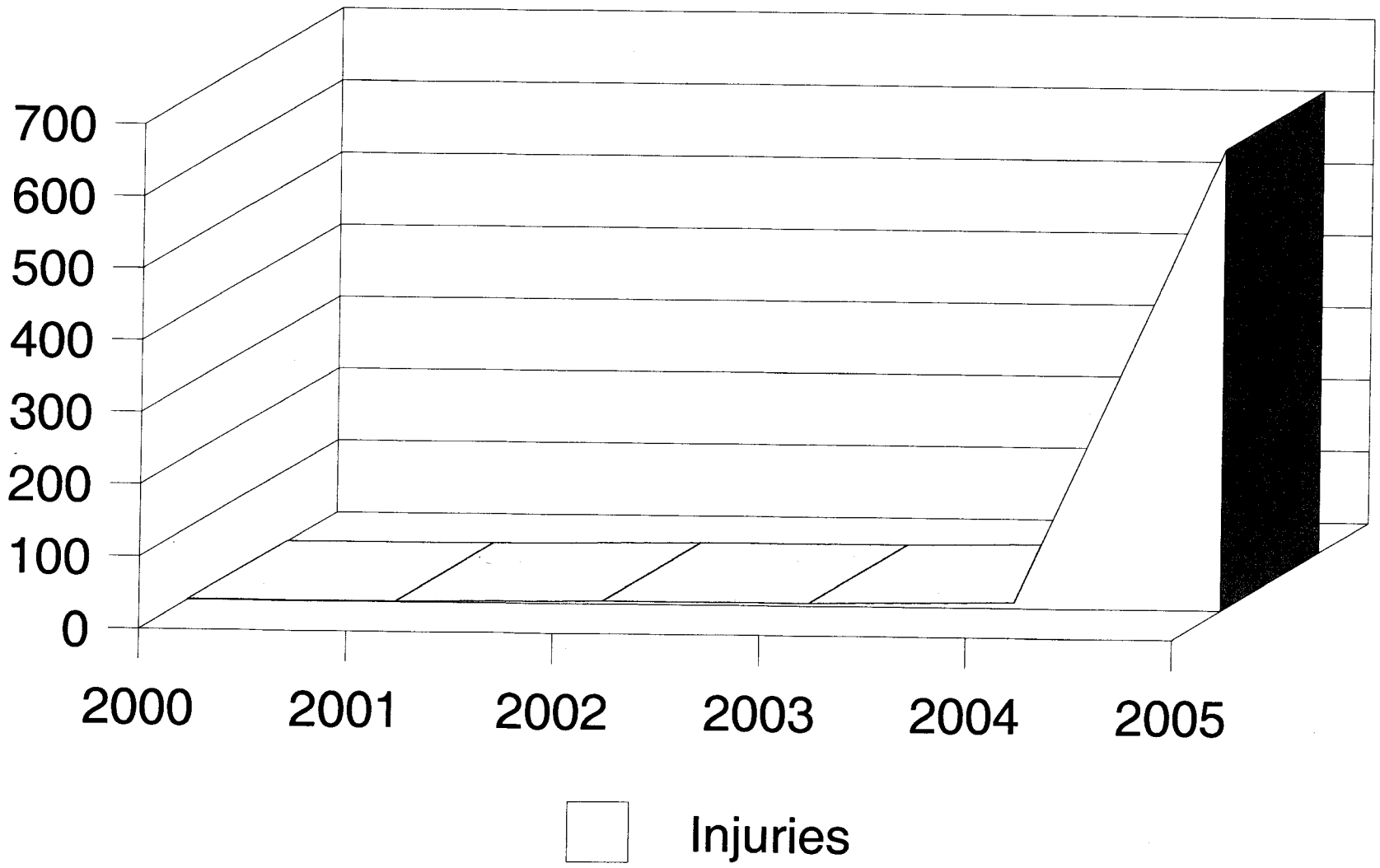
Joseph H. Boardman

Administrator

Wrecks & Deaths



Injuries 2000 Through 2004



Injuries 2000 Through 2005