THE PRESIDENT'S 1983
ANNUAL REPORT

To the Congress on the
Administration of the
Federal Railroad Safety
Act of 1970

U.S. Department
of Transportation
Federal Railroad
Administration

FEDERAL RAILROAD SAFETY ACT OF 1970
Annual Reports on Implementation
(1970-1984)

Office of Safety

DOT/FRA/RRS

TABLE OF CONTENTS

Appendices

MANDATE

The relevant portions of Section 211 of the Federal Railroad Safety Act of 1970, (Public Law 91-458, October 16, 1970, 45 U.S.C. 440), require the following:

SEC. 211 ANNUAL REPORT.

(a) The Secretary shall prepare and submit to the President for transmittal to Congress on or before July 1 of each year a comprehensive report on the administration of this title for the preceding calendar year. Such report shall include, but not be restricted to:

(1) a thorough statistical compilation of the accidents and casualties by cause occurring in such year;

(2) a list of Federal railroad safety rules, regulations, orders, and standards issued under this title in effect or established in such year;

(3) a summary of the reasons for each waiver granted under section 202(c) of this title during such year;

(4) an evaluation of the degree of observance of applicable railroad safety rules, regulations, orders, and standards issued under this title;

(5) a summary of outstanding problems confronting the administration of Federal railroad safety rules, regulations, orders, and standards issued under this title in order of priority;

(6) an analysis and evaluation of research and related activities completed (including the policy implications thereof) and technological progress achieved during such year;

(7) a list, with a brief statement of the issues, of completed or pending judicial actions for the enforcement of any Federal railroad safety rule, regulation, order, or standard issued under this title;

(8) the extent to which technical information was disseminated to the scientific community and consumer-oriented information was made available to the public;

(9) a compilation of-

(A) certifications filed by State agencies under section 206(a) of this title which were in effect during the preceding calendar year, and

(B) certifications filed under section 206(a) of this title which were rejected, in whole or in part, by the Secretary during the preceding calendar year, together with a summary of the reasons for each such rejection; and

(10) a compilation of-

(A) agreements entered into with State agencies under section 206(c) of this title which were in effect during the preceding calendar year, and

(B) agreements entered into under section 206(c) of this title which were terminated by the Secretary, in whole or in part, during the preceding calendar year, together with a summary of the reasons for each such termination.

(b) The report required by subsection (a) of this section shall contain such recommendations for additional legislation as the Secretary deems necessary to strengthen the national railroad safety program.

INTRODUCTION

The President's 1983 Annual Report describes the efforts of the Department of Transportation (DOT) and the Federal Railroad Administration (FRA) to improve railroad safety through the administration of the Federal Railroad Safety Act of 1970 (45 U.S.C. 421 et seq.) during the calendar year 1983.

Although this report concerns itself with the events in calendar year 1983, judicial actions that were concluded in early 1984 are incorporated for the benefit of the reader.

SECTION I

ACCIDENT TRENDS*

Accident Statistics

Train accidents decreased by 15 percent in 1983 compared to 1982. (Normalized by train-miles, the decrease was 12.5 percent).

Total railroad-related casualties decreased by 13 percent in 1983 compared to 1982.

Of the total number of fatalities reported in 1983, 91 percent either occurred at a rail-highway grade crossing or involved a trespasser.

- There were 575 rail-highway grade crossing fatalities in 1983 compared to 607 in 1982, a 5.3 percent improvement.
- The total number of trespasser fatalities in 1983 was 472 compared to 501 in 1982, a reduction of 5.8 percent.

The number of employee-on-duty fatalities in 1983 was 61; compared to 78 in 1982, a reduction of 21.8 percent.

Over 87 percent of the total number of injuries involving railroad operations were sustained by railroad employees. However, figures for 1983 show a 15.3 percent reduction in the total number of employee injuries (from 35,146 in 1982 to 29,761 in 1983).

*See Appendices A-1 and A-2.

SECTION II

RULES AND REGULATIONS

The Federal regulations that were issued under the provisions of the Federal Railroad Safety Act of 1970 and were in effect during 1983 are shown below.

State Participation Regulations (49 CFR 212)
Authority: Section 202 and 206, 84 Stat. 971; 45 U.S.C. 421 et seq.; 49 CFR 1.49(n).
Source: 47 FR 41048, September 16, 1982.

Track Safety Standards (49 CFR 213)
Authority: Section 202 and 209, 84 Stat. 971 and 975; 45 U.S.C. 431 and 438, and 49 CFR 1.49(n).
Source: 47 FR 39398, September 7, 1982.

Railroad Freight Car Safety Standards (49 CFR 215)
Authority: Sections 202 and 209, 84 Stat. 971 and 975; 45 U.S.C. 431 and 438, and 49 CFR 1.49(n).
Source: 44 FR 77340, December 31, 1979.

Railroad Operating Rules (49 CFR 218)
Authority: Section 202, 84 Stat. 971; 45 U.S.C. 431 and 49 CFR 1.49(n).
Source: 44 FR 2175, January 10, 1979.

Radio Standards and Procedures (49 CFR 220).
Authority: Sections 202 and 209, 84 Stat, 971 and 975; 45 U.S.C. 431 and 438; and 49 CFR 1.49(n).
Source: 42 FR 5065, January 27, 1977.

Rear End Marking Device - Passenger, Commuter, and Freight Trains (49 CFR 221)
Authority: Section 202, 84 Stat. 971; 45 U.S.C. 431 and 49 CFR 1.49(n).
Source: 42 FR 2321, January 11, 1977.

Safety Glazing Standards - Locomotives, Passenger Cars and Cabooses (49 CFR 223)
Authority: Section 202, 84 Stat. 971; 45 U.S.C. 431 and 49 CFR 1.49(n).
Source: 44 FR 77352, December 31, 1979.

SECTION III

WAIVER PETITIONS

During 1983, the Federal Railroad Administration (FRA) received 373 petitions to waive specific requirements of FRA safety regulations under Section 202(c) of the Federal Railroad Safety Act of 1970. Table 1 lists each category, gives its corresponding citation in the regulations, and notes the approvals granted.

The FRA Office of Safety reviews and either grants or denies all petitions for permanent or temporary waivers and exemptions from railroad safety rules.

Table 1 Waiver Petitions

Category	Petitions Received, 1983	Petitions Approved, 1983
Signal Systems (49 CFR 235 and 236)	249	216
Track Safety Standards (49 CFR 213)	7	8
Railroad Operating Rules (49 CFR 217, 218, 220 and 228)	24	21
Motive Power and Equipment (49 CFR 215, 221, 223, 229 230, 231 and 232)	93	57
	373	302

Source: FRA, Office of Safety.

Public Hearings

RS&I-835: On March 5, 1982, the Consolidated Rail Corporation (Conrail) filed an application for relief from the requirements of Section 235.2 of the Instructions Governing Application for Approval of the Discontinuance or Material Modification of a Signal System to permit the carrier to modify and discontinue without FRA approval, signal systems on its lines, subject to certain guidelines. At that time, FRA was in the midst of a

Rulemaking Procedure to change that particular rule, and many protests were received from labor organizations and certain other railroads with joint operating rights over Conrail's lines. Therefore, the FRA held a public hearing in Washington, D.C. on March 14, 1983, to permit all interested parties to present oral comments on the application. Subsequently, the FRA approved in part and denied in part the carrier's application for relief. Under the terms of the approval, for a period of 3 years the carrier could modify its signal systems within certain guidelines without FRA's approval, but if any signal system were discontinued, Conrail would be required to file an application seeking FRA approval for the proposed signaling changes.

BS-Ap-1941: The Consolidated Rail Corporation submitted an application to discontinue the automatic block signal system between Steubenville, Ohio, and Newark, Ohio on December 22, 1981. The line is on the Pittsburgh to Columbus main line on what was once a major east and west rail corridor. The carrier changed its traffic pattern to run its through trains over the line through Crestview, Ohio, and this line carries only local traffic. The application was dismissed without prejudice on March 22, 1982, pending separation of all commuter lines from Conrail. The commuter lines were transferred on January 1, and on February 12, 1983, Conrail requested reconsideration of the application. Two full field investigations were conducted, and because of considerable public interest in the application, a public hearing was held on June 6, 1983, in Columbus, Ohio. After carefully weighing the information obtained from the FRAs's field investigators and the information presented at the public hearing, the FRA approved the application on October 21, 1983.

SECTION IV

EVALUATION OF COMPLIANCE

The National Inspection Plan, which sets goals and establishes annual objectives to guide field safety personnel, has had a major impact on improving inspector efficiency and productivity. This tool enables FRA management to establish priorities and determine the location, frequency, and type of inspections required.

Although civil penalties remain an important instrument in FRA's enforcement program, in the context of system assessments FRA has shifted its emphasis from fines to a more cooperative approach to ensure rail safety. However, if a railroad fails to correct defects or unsafe practices a firm enforcement action will follow.

FRA has found that an optimal mix of broadly based system assessments, special task force assessments, and regular inspection activities will bring about major improvements in railroad safety compliance.

The number of inspections conducted by FRA field personnel has increased. Part of that increase results from the additional inspectors hired over the past year. FRA now has the highest number of safety inspectors in its history.

Hollow Axles

Using equipment known as M-2 commuter cars, Metro North Computer Railroad (formerly Conrail) operates a commuter service between New Haven, Connecticut, and New York City. On April 4, 1982, and November 3, 1982, M-2 commuter trains experienced wheel "burn-offs" while in operation. Although there were no injuries and damage was minimal, increased inspections, performed by Metro North after the first incident, failed to prevent a second occurrence.

The FRA immediately investigated and set up a task force to conduct a full technical evaluation of the failures. New inspection procedures began in February 1983 and were supplemented by ultrasonic testing of all hollow axles. As a result of the investigation, all M-2 commuter cars were retrofitted with solid axles by October 1983.

SECTION V

PROBLEMS CONFRONTING THE FEDERAL RAILROAD ADMINISTRATION

The Federal Railroad Administration (FRA) has targeted the two areas that require special emphasis and efforts to improve safety and reduce accidents:

- o At rail-highway grade crossings
- o In the cabs of locomotives

Grade Crossings. About 54 percent of all railroad fatalities result from of rail-highway crossing accidents. In 1983, 547 involved motor vehicles at public rather than at private, farm or industrial crossings.

In the last 5 years, the number of accidents has been nearly halved, and the number of fatalities has been reduced by more than one-third. Although FRA is gratified by this trend, much remains to be done.

Rail-highway crossing safety has also been designated an "emphasis" area by the Department of Transportation. The FRA is enlarging its involvement in Operation Lifesaver, promoting low-cost alternatives for crossing improvements, continuing voluntary maintenance of the US DOT/AAR National Rail-Highway Crossing inventory by States and railroads, and monitoring questions about the non-operation of rail-highway crossing warning devices.

Regulatory action, always a possibility in resolving safety concerns, will be considered if it appears alternative measures cannot improve safety at grade crossings.

Locomotive Cab Safety. While the number of rear-end and head-on collisions has decreased over the last 6 years, there still remains a high risk for loss of life, injury, and property damage when an accident occurs. Over the years 1978-1983, there were 1,327 rear-end and head-on accidents. Of this total, 68 percent were rear-end and 32 percent head-on collisions, resulting in combined damages of $99 million. Rear-end collisions accounted for $53 million of the damages and head-on collisions for $46 million.

From 1978-1983, these two types of collisions caused 55 deaths and 1,936 injuries. An analysis of train collisions showed that most of these accidents resulted from operating conditions or human errors rather than track or vehicle conditions.

FRA will conduct a safety inquiry and may issue a rulemaking on occupational safety in railroad locomotive cabs.

SECTION VI

RESEARCH AND TECHNICAL ADVANCES

The FRA's research and development continued to emphasize safety research in three major areas: (1) equipment; (2) track; and track-train interaction. All three research programs are conducted with the cooperation of, and some cost-sharing by, the railroad industry.

(1) The Equipment, Operations, and Hazardous Materials Program focuses on the safe performance of critical equipment, components, operating practices, and hazardous materials transport. In general, the research involves rail vehicles, their operation, and the movement of hazardous materials prevalent in rail operations.

(2) The Track Safety Program is concerned with improving the safety of the track structure, including all its critical components and elements of the right-of-way.

(3) Unlike the two proceding programs, the Track-Train Safety Testing Program examines rail system operations as a whole. While the "equipment" and "track" programs concentrate on research to control accidents resulting from deficiencies in vehicle design and operation or mechanical failure of the track structure, there remains the accident resulting from the interactive response of the vehicle and the track under certain operating conditions or speeds.

Completed Research

Equipment

- Brake Shoe Materials. Tests of five brake shoe materials were completed at the Transportation Test Center (TTC) in Pueblo, Colorado. Four types of composition friction materials, and high-phosphorous cast iron were used on 70-ton and 100-ton vehicle braking systems. The braking capabilities and friction coefficients were compared to learn the requirements for optimizing braking systems under wet and dry conditions.

- Braking of Freight Trains. Two studies dealing with the brakes on freight trains were completed. One concerned the propagation of brake pipe air pressure changes and their effect on train handling. The second used simulator modeling to show how in-train placement of loads and empties affects the development of high coupler forces.

- o New Materials. Several materials, such as aluminum alloy and high-strength steel, selected as alternativesfor materials currently used in freight car construction were analyzed for fatigue and fabrication characteristics. These analyses will provide data for guidelines for safe construction practices in building rail vehicles of those materials.

Operating Practices

Subsystem assembly and acceptance testing of the Research and Locomotive Evaluator System (RALES) were completed. RALES is a state-of-the-art simulator that permits research in locomotive engineer train-handling performance and shows the effects of various operating techniques upon train behavior under a variety of operating conditions and equipment configurations.

Hazardous Materials

- o Guidelines Manual. With the Air Force Rocket Propulsion Laboratory, the FRA published Guidelines Manual for Post-accident Procedures for Chemicals and Propellants. This manual furnishes information to emergency response organizations on what precautions to take and how to handle the various substances that may be involved in a railroad accident.

- o Tank Cars. Work was completed for a proposed rulemaking on the effects of temperature, pressure, and liquid level on tank cars engulfed in flames. It involved a computer analysis of the flow of vapor and/or liquid through safety relief valves when a tank car overturns.

- o Emergency Planning. A film was produced to assist the emergency responses of communities to railroad accidents involving the release of hazardous materials.

- o Injury Prevention. A study was done on hazardous materials injuries to railroad employees. The analysis showed that 75 percent of injuries involved brakeman, conductors, switchmen, and yardmen who were exposed to leaks or splashes due to unsecured manway assemblies or improperly installed, missing, or defective manway gaskets.

Track

- o Performance Standards. Revised performance standards specify how the track should perform in order to achieve safe operations. They also give the railroads more flexibility in meeting the safety requirements than the current design standards do. One completed performance standard applicable to vehicle-track interaction specified sequential combinations of track crosslevel variations that excite particular car types to excessive rocking at speeds between 14 mph and 25 mph. The measurement system previously developed was further refined. A 100-ton covered hopper car, one of the car types susceptible to this crosslevel-induced rocking, was tested under simulated track conditions in the Rail Dynamics Laboratory at the TTC.

  Work on another performance standard concerning internal rail defects revealed that a notable characteristic of defects is the clustering associated with specific track structure features. This knowledge permits more effective scheduling of rail flaw detection equipment. One large railroad has already adjusted its defect detection inspection scheduling to take into account the clustering effect.

Track-Train Interaction

- o Problem Cars. A completed series of freight car performance tests included a baseline test of a 100-ton covered hopper car which displayed troublesome on-track performance characteristics common to similar vehicles. The test series also included the prototype of a 100-ton vehicle containing several new design features and concepts now being introduced in the industry. Data gained from the baseline car test and the new car test will help in establishing a uniform reference for evaluating the safety performance of new car designs.

- o Vibration Testing Unit. Vehicle tests performed on the Vibration Testing Unit (VTU) of the Rail Dynamics Laboratory (RDL) at the TTC showed that laboratory tests are valid alternatives or enhancements to certain on-track testing. The industry has accepted this concept and is using the test equipment to simulate operating conditions and accelerate controlled failures of vehicle components.

Ongoing Research

Equipment

- Wheel Safety. FRA initiated a 3-year Government-Industry Wheel Safety Research Program to improve safety performance through technically sound wheel-removal criteria and guidelines for safe design and operation.

- Freight Car Truck . New freight car truck designs continued to be evaluated, both in the field and in the laboratory.

- End-of-Train Markers. A study was begun to determine if reflective (passive) markers are effective as rear-end train markers. After an initial screening, candidate markers were selected for a full-scale field test. Final recommendations will be made by the end of 1984.

- Hollow-axle Bearing Failures. FRA continued to monitor commuter cars equipped with hollow-axles because the problem of failure at the bearing-axle interface could recur on other similarly equipped cars.

Hazardous Materials

- Tank Cars. Research is progressing on thermal protection and puncture resistance systems for tank cars carrying cryogenic materials (at -150°F.) and for tank cars carrying chlorine gas. A study of the structural integrity of tank cars damaged in accidents is also proceeding.

- Handling Guide. Work was initiated on preparation of a Hazardous Materials Handling Guide that will combine the information of several separate publications for shippers, railroad personnel, and safety inspectors.

- Emergency Response Plan. A model plan is being developed for emergency response and reaction by railroad crews immediately after a hazardous materials accident.

Track

- Concrete Ties. In April 1983, a study was initiated to define the safety inspection criteria for concrete tie track in the Northeast Corridor. Early tests and track surveys showed that the principal cause of concrete tie cracking is impact loads from wheel or rail irregularities and that rail fastener fallouts do not occur in large clusters but appear to be diffused throughout the system. Final recommendations on safety inspection criteria are expected by the end of 1984.

- High-alloy Rail. A study was begun to determine the characteristics of a high-alloy rail involved in an Amtrak derailment near Marshall, Texas, on November 1, 1983. The preliminary assessment revealed that the rail had shattered into an exceptionally large number of pieces, which may indicate a lower fracture toughness than a standard carbon rail. Final results will be available in 1984.

- Track Buckling. Field tests were conducted to find methods to control lateral track buckling. Two of these tests, one at the TTC Facility for Accelerated Service Testing (FAST) (see Track-Train Interaction) and another on main line track of a large southeastern railroad, revealed the extent to which a neutral temperature shift affects the conditions that can cause buckling. The relation of traffic volume to track buckling was examined for the first time in the United States during the Dynamic Track Buckling Test at the TTC. In this test, the manner in which vehicle wheel loads contribute to buckling was clearly demonstrated. The test also showed how relatively minor track alignment imperfections on curved track will grow progressively as rail compressive forces escalate. The study is moving forward as additional train tonnage is accumulated over the FAST track.

- Rail Defect-Detection. FRA examined a prototype of an improved rail defect-detection device that uses electromagnetic acoustic transducer (EMAT) technology. Tested at the TTC and a section of main line track, the new device was able to disclose critical rail flaws; further investigation will proceed at the TTC.

- Performance Standards. Work progressed on track performance standards to increase safety. In the area of rail restraint, a partial standard was proposed for low-speed conditions (up to 25 mph), based on the refinement of tools for making track measurements. Work continues on the standard for other speed regimes.

Track-Train Interaction

- Track-Train Dynamics Program. FRA jointly sponsors the international Track-Train Dynamics (TTD) Program, with the Association of American Railroads, the Railway Progress Institute (representing railroad supply industry) and Transport Canada (representing the Canadian railroads). Tests and data analysis methods to measure track strength to predict unsafe track conditions are ongoing. The ability of the track structure to resist displacement under load is being evaluated through lateral track strength tests. Thus far, these tests have proved that a specifically designed moving, track-mounted vehicle is superior to conventional visual assessments in measuring track strength. Track segments constructed with various rail-tie fastening devices were tested, permitting strength comparisons of the different fasteners.

- Facility for Accelerated Service Testing (FAST). Along with the rail industry, FRA cosponsors the operation of FAST, a 4.8 mile closed-loop track at the TTC. This facility is used to collect life-cycle performance data for vehicle and track components by operating a conventional freight train of 80 cars repetitively around the loop. Individual rail vehicles and sections of track are used in numerous safety experiments and investigations in a controlled, observable environment. FAST accelerates a process that would otherwise take considerably longer in the normal railroad setting. Examples of FAST experiments follow.

  ### Track Lubrication

  A major track lubrication study which began in 1983 investigated several methods of lubricating the gage face of the high rail on track curves. Early results showed that lubrication can reduce wheel-to-rail forces on curved and tangent track. Although this may substantially decrease gage face wear, a drawback in extending rail life on curves is the probability that rail fatigue may replace rail wear as the dominant cause of rail replacement. Beginning in 1984, a major test on FAST will address this issue.

  ### Other FAST Experiments

  Several minor experiments included: a tie-pad test for the Northeast Corridor; a test of geotextiles for the Department of the Army; a repair evaluation based on Japanese National Railway's Gas Spray Welding Technique; a Rail Neutral Temperature Variation evaluation; and Rail Defect Growth Rate Testing.

SECTION VII

JUDICIAL ACTIONS

The following briefly describes the judicial actions taken under the Federal Railroad Safety Act of 1970 and other safety statutes, including actions completed during 1983 or thereafter and those currently pending.

Completed

Fort Worth & Denver Ry. Co. v. Dole (N.D. Tex. and 5th Cir.), decisions reported at 518 F. Supp. 121 and 693 F.2d 432: 1980 suit by 25 railroads and the Association of American Railroads (AAR) seeking to set aside the revised Freight Car Safety Standards to the extent that they embody a strict liability standard of compliance. The Fifth Circuit, reversing the lower court's decision in FRA's favor, held that the only standard of liability for regulatory violations authorized by the Federal Railroad Safety Act of 1970 is "known or should have known." In December 1982, Congress amended the Safety Act to affirm FRA's authority to adopt a standard of strict liability. FRA then agreed to settle the entire litigation by joining the plaintiff railroads' motion to remand the case to the lower court for an agreed final disposition. That motion was granted on May 31, 1983. On September 13, 1983, the district court declared the regulations unlawful for the period up to January 13, 1983, the effective date of the Safety Act amendment, and dismissed without prejudice the AAR's complaint insofar as it sought relief for periods after that date.

United Transportation Union (UTU) v. Dole (D.D.C. and D.C. Cir.): March 1981 suit seeking an FRA emergency order blocking the use of metal hooks by Seaboard Coast Line Railroad employees to open freight car couplers. The UTU claimedthat the practice, which requires an employee to place a portion of his body between the ends of moving cars, violates a provision of the Safety Appliance Acts, 45 U.S.C. § 2. FRA conducted a special inquiry into the practice and found it both lawful and safe. The district court ruled for FRA. On June 17, 1983, the Court of Appeals for the D.C. Circuit affirmed, holding that use of the hooks does not violate the law and that FRA's refusal to ban the practice was not unreasonable.

United Transportation Union v. Dole (S.D. Ala. and 11th Cir.), decision reported at 699 F. 2d 1109: October 1981 suit by the UTU and an individual railroad employee seeking an FRA emergency order and injunctive relief to require the Burlington Northern (BN) to keep its Magnolia Hotel sleeping quarters in clean and safe condition, as required by the Hours of Service Act. On March 11, 1983, the Court of Appeals for the Eleventh Circuit reversed the lower court's ruling that employee sleeping quarters are not a proper subject for emergency orders, and remanded for a trial on the merits of the emergency order claim. The plaintiffs amended their complaint to challenge FRA's failure to submit information of alleged violations to the U.S. Attorney for the filing of a civil penalty suit against BN. Pursuant to a joint stipulation of dismissal by the parties, the district court dismissed the case without prejudice on December 19, 1983.

United Transportation Union v. Dole (W.D. Ky.): August 1983 suit challenging the legality of the required use of metal hooks by Louisville & Nashville Railroad employees to open freight car couplers. On August 4, the court denied the union's request for a temporary restraining order. On September 16, 1983, the UTU voluntarily dismissed the lawsuit.

Pending

Brotherhood Railway Carmen v. Dole (S.D. Cal. and 9th Cir.): April 1983 suit by the Carmen and one individual railroad employee alleging rail employees are exposed to death or injury due to FRA's failure (i) to order the Atchison, Topeka & Santa Fe Railway (Santa Fe) to cease using unqualified trainmen (as opposed to carmen) to perform air brake inspections and tests, and (ii) to perform inspections for violations of various Federal railroad safety laws. The case arose from the furlough of carmen by the Santa Fe. The plaintiffs sought an emergency order and injunctive relief. An FRA investigation of an earlier Carmen complaint did not reveal any evidence that unqualified Santa Fe employees were performing air brake inspections at San Diego. It did disclose other violations of the safety laws, for which FRA has filed civil penalty claims against the railroad. At a hearing on May 20, in San Diego, the court denied the plaintiffs' request for an FRA emergency order and a preliminary injunction. On February 23, 1984, the court ruled for FRA, on the grounds that the plaintiffs lacked standing, and that even if they had standing, FRA was entitled to summary judgment on the merits. A notice of appeal to the Ninth Circuit was filed on March 15, 1984.

Brotherhood Railway Carmen v. Dole (E.D. Wash.): July 1983 suit by the Carmen, the UTU, and two individual railroad employees, similar in theory and demands to the suit in the Southern District of California, involving alleged violations of the railroad safety laws by the Union Pacific and the Burlington Northern at Spokane, Washington. On August 26, 1983, the plaintiffs requested an FRA emergency order and a preliminary injunction; they were denied.

Brotherhood Railway Carmen v. Dole (E.D. Ky.): July 1983 suit by the Carmen, the UTU, and one individual railroad employee, similar in theory and demands to the suit in the Southern District of California, involving alleged violations of the railroad safety laws by the Seaboard System Railroad at Hazard and Dent, Kentucky. FRA's Motion to Dismiss or for Summary Judgment was filed on December 1, 1983; the plaintiffs' Opposition, on January 10, 1984; and FRA's Reply, on February 10, 1984.

Brotherhood Railway Carmen v. Dole (S. D. Ohio): July 1983 suit by the Carmen, the UTU and two individual railroad employees, similar in theory and demands to the suit in the Southern District of California, involving alleged violations of the railroad safety laws by the Baltimore & Ohio at Zanesville, Ohio. On March 30, 1984, FRA filed a Motion to Dismiss or for Summary Judgment, to which the plaintiffs filed an Opposition on May 9, 1984.

Brotherhood Railway Carmen v. Dole (S.D. Tex.): July 1983 suit by the Carmen, the United Transportation Union, and two individual railroad employees, similar in theory and demands to the suit in the Southern District of California, involving the Southern Pacific's alleged violations of the railroad safety laws at Glidden, Texas. On September 19, 1983, FRA filed its answer.

United Transportation Union v. Dole (D. Kans.): July 1983 suit by the UTU, the Brotherhood of Locomotive Engineers, and two individual railroad employees alleging that the St. Louis Southwestern Railway Company's (SSW) proposed rehabilitation and reuse of its Kansas City Dormitory would constitute "construction" or "reconstruction" of employee sleeping quarters located within one-half mile of switching, in violation of the Hours of Service Act (45 U.S.C. § 62(a)(4)) and implemention regulations (49 C.F.R. § 228.101(c)), and fail to comply with the "clean, safe, and sanitary" standard of the Act (45 U.S.C. § 62(a)(3)). The plaintiffs seek an emergency order and injunctive relief. The plaintiffs argue (i) that although the Dormitory was originally exempted or "grandfathered," with other dormitories in existence when the location restrictions were passed, SSW's disuse of the Dormitory for four years has worked a waiver of the exemption, (ii) that rehabilitation costs will exceed the regulatory maximum for "grandfathered" facilities, and (iii) that the SSW's acquisition of the Dormitory in 1980 from another railroad and use of it as sleeping quarters would be "construction" under the regulations by "acquisition and use of an existing building." On February 21, 1984, FRA moved to dismiss or for summary judgment. The plaintiffs filed an Opposition on March 26, 1984. On June 1, 1984, the court denied FRA's motion, clearing the way for a trail on the merits. The trail began on September 17, 1984

United Transportation Union v. Dole (N.D. Ill.): July 1983 suit by the UTU and one individual railroad employee alleging that the Norfolk & Western's sleeping quarters in its Calumet switching yard in Chicago, Illinois, do not comply with the "clean, safe, and sanitary" standard of the Hours of Service Act (45 U.S.C. § 62(a)(3)) and that the N&W violated the new construction prohibition of the Act (45 U.S.C. § 62(a)(4)) when it began housing employees from a particular seniority district at the facility in 1981. FRA's answer was filed September 8, 1983. Both parties have propounded and responded to interrogatories. Plaintiffs voluntarily dismissed their suit on July 2, 1984, pursuant to a settlement reached with FRA.

United Transportation Union v. Dole (W.D. Tex.): March 1984 suit by the UTU and one individual railroad employee seeking an FRA emergency order and injunctive relief to require the Southern Pacific to provide "clean, safe, and sanitary" sleeping quarters at its Hearne, Texas, switching yard as required by the Hours of Service Act (45 U.S.C. § 62(a)(3)). FRA's answer was filed May 28, 1984.

Rail Labor Executives Association v. Dole (D. Ore. and 9th Cir.): April 1983 suit by the RLEA and an individual railroad employee challenging FRA's alleged failure to enforce the railroad safety laws and seeking an emergency order and other relief. The plaintiffs allege that FRA has a mandatory duty to cite all violations that come to its attention and that it lacks prosecutorial discretion. On November 3, 1983, the district court dismissed the case on the ground that the plaintiffs lacked standing. The RLEA appealed on December 7, 1983. Both parties have filed briefs. Oral agreement on the case was heard on September 6, 1984.

SECTION VIII

INFORMATION DISSEMINATION

Appendix B lists the technical studies on railroad safety research published by FRA during 1983. These studies are available to the public through the National Technical Information Service in Springfield, Virginia.

During 1983, FRA also published the Rail-Highway Crossing Accident/Incident and Inventory Bulletin No. 5, Calendar Year 1982 and the Accident/Incident Bulletin No. 151, Calendar Year 1982.

The two congressional reports printed in 1983 were: Emergency Procedures Training of On-Board Passenger Train Personnel, February 1983 and The Effects of Mounted Oscillating Lights on Leading Railroad Cars, March 1983.

SECTION IX

STATE PARTICIPATION PROGRAM

Under the State Participation Program, authorized by Section 206 of the Federal Railroad Safety Act of 1970, FRA provides financial assistance to states participating in the enforcement of Federal rail safety requirements.

During 1983, 32 States, employing 103 state inspectors, were in the program. Sixty-two state inspectors participated in the track discipline; 34 in motive power and equipment; 6, in operating practices; and 1 in the signal and train control discipline.

As a result of 1982 modifications in FRA State Participation Regulations (49 CFR 212), states are now employing operating practices and signal inspectors. These changes resulted from the Federal Railroad Safety Authorization Act of 1980 (P.L. 96-432), which directed the Secretary of Transportation to expand the program, as may be appropriate, to include additional inspector disciplines. States can currently inspect track, freight cars, locomotives, brake systems, operating practices, safety glazing, safety appliances and signal systems.

FRA continued to provide 100 percent funding for state inspector training at DOT's Transportation Safety Institute (TSI) in Oklahoma City, Oklahoma. TSI offers State and Federal Inspectors orientation, guidance, and training in a classroom atmosphere.

Table 2 shows the States participating in the program at the end of 1983. States entering in 1983 were Montana, New Mexico, and Texas. One State, Rhode Island, elected to end its participation in mid-year 1983.

TABLE 2

STATE PARTICIPATION PROGRAM
(Calendar Year 1983)

State Safety Inspectors

State	Track	Motive Power & Equipment	Operating Practices	Signal & Train Control
Alabama	2	2		
Arizona	1	1		
California	2	1		
Connecticut	1			
Florida	3	2		
Illinois	4			
Iowa	3			
Kansas	1			
Louisiana	1			
Maryland	1	2	1	
Michigan	4			
Minnesota	2			
Missouri	3			
Montana	1*			
Nebraska	1	1		
Nevada	1			
New Hampshire	1			
New Jersey	1			
New Mexico		1		
New York	4	3		
North Carolina	2	1		
Ohio	3	4		
Oklahoma	2			
Oregon	2	2		
Pennsylvania	4	3		
South Carolina		1		
Tennessee	2	2	1	
Texas	3*	2*	3*	
Utah	1	1		
Virginia	2			
Washington	2	2	1	1
West Virginia	2	3		
Total	62	34	6	1

* Trainee(s).

Appendices

A. Accident/Incident Statistics:

(1) Table A-1, Summary of Casualties by Type of Accident/Incident for 1982 and 1983

(2) Table A-2, Total Number of Train Accidents by Cause for 1982 and 1983

B. Technical Reports and Studies

Table A-1 Summary of Casualties by Type of Accident/Incident for 1982 and 1983

Type Accident/Person	% Of Total 1982	% Of Total 1983	Total Cases 1982	Total Cases 1983	...Killed.. 1982	...Killed.. 1983	..Injured.. 1982	..Injured.. 1983	..Illness.. 1982	..Illness.. 1983
TRAIN ACCIDENTS - RAIL EQUIPMENT ACCIDENT/INCIDENT CASUALTIES										
EMPLOYEE ON DUTY.....	.78	.86	321	310	9	15	298	293	14	2
EMPLOYEE NOT ON DUTY.	.01	.00	3	1	---	---	1	1	2	---
PASSENGER ON TRAIN...	.07	.13	29	48	3	4	26	44	---	---
NONTRESPASSER.....	.01	.04	5	15	---	---	5	15	---	---
TRESPASSER.....	.03	---	14	---	2	---	12	---	---	---
CONTRACTOR EMPLOYEE..	---	---	---	---	---	---	---	---	---	---
TOTAL.....	.90	1.04	372	374	14	19	342	353	16	2
TRAIN INCIDENT CASUALTIES										
EMPLOYEE ON DUTY.....	12.13	13.00	5,020	4,665	35	24	4,902	4,576	83	65
EMPLOYEE NOT ON DUTY.	.02	.03	10	10	---	1	7	9	3	---
PASSENGER ON TRAIN...	.28	.35	114	125	3	---	111	125	---	---
NONTRESPASSER.....	.11	.19	46	68	7	22	39	46	---	---
TRESPASSER.....	2.03	2.24	840	804	397	383	443	421	---	---
CONTRACTOR EMPLOYEE..	.02	.02	7	7	2	2	5	5	---	---
TOTAL.....	14.58	15.82	6,037	5,679	444	432	5,507	5,182	86	65
NONTRAIN INCIDENT CASUALTIES										
EMPLOYEE ON DUTY.....	74.02	70.71	30,638	25,379	30	21	29,823	24,770	785	588
EMPLOYEE NOT ON DUTY.	1.19	1.07	494	384	2	2	491	379	1	3
PASSENGER ON TRAIN...	.60	.80	250	288	3	---	247	288	---	---
NONTRESPASSER.....	.49	1.13	201	404	2	3	199	401	---	---
TRESPASSER.....	.19	.26	80	92	15	17	65	75	---	---
CONTRACTOR EMPLOYEE..	.19	.26	78	94	2	4	76	89	---	1
TOTAL.....	76.68	74.23	31,741	26,641	54	47	30,901	26,002	786	592
RAIL-HIGHWAY GRADE CROSSING ACCIDENT/INCIDENT CASUALTIES (EXCLUDED FROM ABOVE CATEGORIES)										
EMPLOYEE ON DUTY.....	.32	.34	131	123	4	1	123	122	4	---
EMPLOYEE NOT ON DUTY.	.01	.01	4	3	---	---	4	3	---	---
PASSENGER ON TRAIN...	.01	.13	3	45	---	---	3	45	---	---
NONTRESPASSER.....	6.93	7.71	2,868	2,768	516	502	2,352	2,266	---	---
TRESPASSER.....	.57	.72	238	259	87	72	151	187	---	---
CONTRACTOR EMPLOYEE..	---	---	---	---	---	---	---	---	---	---
TOTAL.....	7.84	8.91	3,244	3,198	607	575	2,633	2,623	4	---
GRAND TOTALS BY TYPE OF PERSON										
EMPLOYEE ON DUTY.....	87.23	84.91	36,110	30,477	78	61	35,146	29,761	886	655
EMPLOYEE NOT ON DUTY.	1.23	1.11	511	398	2	3	503	392	6	3
PASSENGER ON TRAIN...	.96	1.41	396	506	9	4	387	502	---	---
NONTRESPASSER.....	7.54	9.07	3,120	3,255	525	527	2,595	2,728	---	---
TRESPASSER.....	2.83	3.22	1,172	1,155	501	472	671	683	---	---
CONTRACTOR EMPLOYEE..	.21	.28	85	101	4	6	81	94	---	1
TOTAL.....	100.00	100.00	41,394	35,892	1,119	1,073	39,383	34,160	892	659

NOTE: Rail-highway crossing casualties include those occurring at both public and private crossings

SOURCE: Data for the Accident/Incident Bulletin for 1983

Table A-2 Total Number of Train Accidents by Cause for 1982 and 1983

CAUSES	NBR OF ACCS 1982	NBR OF ACCS 1983	$DAMAGE 1982	$DAMAGE 1983	KILLED 1982	KILLED 1983	INJURED 1982	INJURED 1983	HAZMAT RELEASE 1982	HAZMAT RELEASE 1983
TRACK, ROADBED AND STRUCTURES										
Roadbed defects	109	94	11,051,110	5,970,740	4	0	42	20	0	0
Track geometry defects	751	717	28,043,250	28,376,758	0	0	26	17	8	17
Rail and joint bar defects	459	369	35,237,093	33,673,171	1	6	43	51	8	5
Frogs, switches and track appliances	428	370	7,133,820	12,139,887	0	0	5	11	2	2
Other way and structure	17	19	1,519,909	1,235,804	0	0	0	1	1	0
Signal and communication failures	5	12	123,188	1,943,664	0	0	0	3	0	0
	1,769	1,581	83,108,370	83,340,024	5	6	116	103	19	24
MECHANICAL AND EQUIPMENT FAILURES										
Brakes	113	69	6,200,706	3,801,817	0	0	6	2	1	0
Trailer or container on flat car	9	10	580,791	520,588	0	0	0	1	0	0
Body	73	66	7,015,441	3,844,716	1	0	3	5	3	1
Coupler and draft system	79	78	2,578,005	4,029,355	0	0	4	2	0	2
Truck components	160	128	10,600,231	7,797,237	0	0	4	19	3	3
Axles and journal bearings	125	92	10,337,598	15,217,785	0	0	4	5	4	2
Wheels	136	127	13,634,297	10,902,277	0	0	10	3	2	1
Locomotives	79	48	5,301,651	3,210,126	0	0	12	10	0	0
Doors	7	10	211,325	725,418	0	0	2	0	0	1
Other mechanical and electrical failures	14	8	1,851,174	213,265	0	0	0	6	0	0
	795	636	58,311,219	50,262,584	1	0	45	53	13	10
TRAIN OPERATION - HUMAN FACTORS										
Brakes, use of	223	167	6,130,462	6,562,798	1	1	10	10	1	0
Employee physical condition	4	5	835,338	197,884	0	0	7	2	0	0
Flagging, fixed, hand and radio signals	47	43	6,059,406	6,633,170	3	6	26	29	0	1
Other rules and instructions	349	286	8,925,318	6,965,182	0	1	38	51	6	1
Speed	121	93	6,799,438	5,377,590	0	0	22	13	0	1
Switches, use of	184	173	3,199,518	10,847,507	0	1	13	15	1	1
Miscellaneous human factors	356	334	9,866,508	11,775,484	0	0	13	7	3	4
	1,284	1,101	41,815,988	48,359,615	4	9	129	127	11	8
MISCELLANEOUS										
Collision with hwy user at grade crossing	178	130	7,970,006	5,606,614	35	37	114	147	2	2
Vandalism	77	81	4,463,220	2,296,110	1	0	15	9	1	0
Load shifted	30	25	2,718,796	1,242,335	0	0	5	0	2	1
Interaction of lateral/vertical forces	129	111	4,782,188	5,582,902	0	0	4	7	0	1
Miscellaneous causes not otherwise listed	327	241	19,045,805	11,660,272	3	4	44	56	11	6
	741	588	38,980,015	26,388,233	39	41	182	219	16	10
TOTAL	4,589	3,906	222,215,592	208,350,456	49	56	472	502	59	52

SOURCE: Data for the Accident/Incident Bulletin for 1983

APPENDIX B

Technical Reports and Studies

Analytical Descriptions of Track Geometry Variations, Report No. FRA/ORD 83/03.1 and 83/03.2

Ballast and Subgrade Requirements Study:

- Materials Evaluation and Stabilization Practices, Report No. No. FRA/ORD-83/04.1
- Design and Performance Evaluation Practices, Report No. FRA/ORD-83/04.2
- Summary and Assessment Report, Report No. FRA/ORD-83/04.3

Determination of Residual Stress in Rails, Report No. FRA/ORD-83/05

Investigation of the Effects of Tie Pad Stiffness on the Impact Loading of Concrete Crossties in the NEC, Report No. FRA/ORD-83/05

Data Analysis Results of 70-Ton Boxcar Vibration Tests, Report No. FRA/ORD-83/06

Parametric Studies on Lateral Stability of Welded Rail Track, Report No. FRA/ORD-83/07

Perturbed Track Test: Results of Data Analysis, Report No. FRA/ORD-83/08

Analysis of Service Stresses in Rails, Report No. FRA/ORD-83/09

Development of Track Degradation Modeling Technique, Report No. FRA/ORD-83/12

Analysis of Lateral Rail Restraint, Report No. FRA/ORD-83/15

Analytic Studies of the Relationship Between Track Geometry Variations and Derailment Potential at Low Speeds, Report No. FRA/ORD-83/16

Event Probabilities and Impact Zones for Hazardous Material Accidents on Railroads, Report No. FRA/ORD-83/20

Equipment Operations

Demonstration of the Budd Company Rail Passenger car Tilt System, Report No. FRA/ORD-83/01

Evaluation of Selected TDOP Phase II Test Data, Report No. FRA/ORD-83/02

TDOP Wear Data Collection Program, Report No. FRA/ORD-83/10

Freight Train Brake System Safety Study, Report No. FRA/ORD-83/18