

GAO

Report to the Chairman, Committee on
Energy and Commerce, House of
Representatives

April 1989

RAILROAD SAFETY

FRA Needs to Correct Deficiencies in Reporting Injuries and Accidents





United States
General Accounting Office
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**Resources, Community, and
Economic Development Division**

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The Honorable John D. Dingell
Chairman, Committee on
Energy and Commerce
House of Representatives

Dear Mr. Chairman:

At your request, we assessed the reliability and accuracy of federal safety data reported by railroads to the Federal Railroad Administration. This report presents our findings, conclusions, and recommendations regarding the accuracy of railroad injury and accident data and administration efforts for ensuring the accuracy of the data.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to interested congressional committees; the Secretary of Transportation; and the Administrator, Federal Railroad Administration. We will also make copies available to others upon request.

This work was performed under the direction of Kenneth M. Mead, Director, Transportation Issues and Victor S. Rezendes, Associate Director, Transportation Issues. Other major contributors are listed in appendix II.

Sincerely yours,

A handwritten signature in cursive script that reads 'J. Dexter Peach'.

J. Dexter Peach
Assistant Comptroller General

Executive Summary

Purpose

In 1987, the nation's railroads reported to the Federal Railroad Administration (FRA) 2,647 accidents with damages of about \$177 million. These railroads also reported 27,198 injuries, including 1,165 fatalities. Concerned about railroad safety, the Chairman, House Committee on Energy and Commerce, asked GAO to determine whether FRA's safety programs were adequate to protect railroad employees and the public from being injured in train accidents. This report is the first of a series responding to the Chairman's request and, as agreed to by the Chairman's office, assesses the accuracy of injury and accident data reported to FRA by the railroads.

Background

FRA is responsible for establishing safety regulations for the railroad industry. FRA's objective is to prevent railroad accidents and to promote the safety of employees, travelers, and the general public. Under the Rail Safety Act of 1970, as amended, and the Accidents Reports Act of 1910, railroads are required to submit monthly reports to FRA summarizing collisions, derailments, and other accidents with damages above a biennially adjusted dollar threshold; and injuries to passengers, employees, and other persons on railroad property that require medical treatment. Generally, the one-time treatment of minor cuts, burns, and splinters is not considered medical treatment.

To conduct its audit, GAO selected two of the nation's largest freight railroads, CSX Transportation and Union Pacific; the only intercity rail passenger carrier—Amtrak; and two regional carriers—Chicago and North Western Transportation Company and Chicago Central and Pacific Railroad. The safety records submitted by these railroads accounted for about 37 percent of the accidents and 33 percent of the injuries reported to FRA for calendar year 1987.

Results in Brief

FRA uses injury and accident reports submitted by the railroads as a basis for planning and executing its safety programs and for assessing and reporting on the safety condition of the railroad industry. FRA, however, has little assurance that its injury and accident data base is reliable because the railroads GAO visited were not reporting accurately or completely. To the extent this situation extends to all railroads, FRA's decisions on establishing its safety inspection and enforcement program strategy, determining its inspection level of effort, and calculating the costs and benefits of proposed safety rule changes could be adversely affected. Further, to the extent the data base is inaccurate, railroad safety may not be improving as much as FRA has reported.

The five railroads GAO visited were either (1) underreporting the number of injuries and accidents, (2) understating the number of lost workdays and the estimated cost of damages due to train accidents, or (3) in the case of one railroad, not maintaining sufficient information for GAO to determine the accuracy of its reporting. GAO found that:

- For 521 unreported injuries and 532 unreported accidents that GAO reviewed, 61 injuries and 52 accidents should have been reported to FRA.
- Of the 156 injuries involving lost workdays reported by four of the railroads that GAO reviewed, the number of lost workdays was underestimated by 269 percent.
- Of 171 accident cases GAO analyzed, the estimated cost of damages due to train accidents was understated by 52 percent, or \$3.5 million.

FRA's oversight of self-reporting by the railroads has not been sufficient to obtain consistently accurate injury and accident reports. Although the railroads generally had the necessary data available to report accurately, errors occurred because safety offices responsible for preparing reports were not collecting the most up-to-date information available from other sources before reporting to FRA. FRA's inspectors usually focused their inspection efforts on detecting individual reporting errors rather than on a railroad's procedures for reporting. The inspectors, therefore, were not detecting the underlying causes of inaccurate reporting.

Principal Findings

Injury and Accident Data Critical to FRA's Safety Program

FRA relies on injury and accident reports submitted by railroads as a basis for conducting its overall railroad safety program. Therefore, it is important that the data it receives be as accurate as possible. FRA uses injury and accident data for, among other things, establishing its inspection strategy, determining the number of inspectors it needs, determining comparative trends in railroad safety, and calculating the costs and benefits of proposed safety rules. However, GAO found substantial underreporting and inaccurate reporting of injury and accident data by the railroads it visited, which raises questions about the overall effectiveness of FRA's safety program and the extent to which railroads have become safer.

Inaccurate Injury and Accident Reports

Four of the railroads that GAO reviewed reported 8,977 injuries, 968 accidents, and over \$73 million in damages to railroad equipment in 1987. GAO's analysis of injury and accident reporting by these railroads disclosed that an additional 61 injuries and 52 accidents should have been reported to FRA. At a fifth railroad GAO visited—a relatively new, smaller one—required records were not available to determine whether it accurately reported safety data to FRA.

The railroads' reporting deficiencies are illustrated by the inaccurate reports of lost workdays due to employee injuries. FRA's data showed that the railroads GAO visited reported 2,176 missed workdays associated with 156 injuries. However, GAO's review of railroad records for these 156 injuries showed the employees actually missed 8,023 workdays.

To correct the problem of inaccurate reporting, three of the railroads GAO visited stated that they either had underway, or were planning, initiatives to improve reporting accuracy. Each was establishing procedures requiring safety offices to obtain all available information before reporting to FRA.

Procedural Deficiencies Create Inaccurate Reporting

The railroads' inaccurate reporting generally occurred because they did not have procedures in place requiring that the most current data available on injuries and accidents be obtained before reports were sent to FRA. Two of the railroads lacked internal control procedures to reconcile all available information on lost workdays, restricted activities, or medical treatment due to injuries. The third railroad had informal procedures to access such information; however, the procedures were not always followed. Similarly, underreporting of accidents and estimated damages generally occurred because the railroads based the figures for reporting on initial field estimates prepared at the accident scene, which often proved to be incorrect. In contrast, one railroad accurately reported injuries, accidents, and dollar damages because it had procedures in place to obtain all available information on injuries before submitting reports to FRA and because it used damage estimates prepared by repair shops in reporting damages to FRA rather than initial field estimates.

Limited Injury and Accident Inspections

FRA's inspectors spent relatively little time verifying the process the railroads used to report injuries and accidents. Inspections were generally aimed at identifying railroads' individual injury reporting errors rather than focused on the causes of the errors. Therefore, the underlying

causes for reporting errors—the railroads' inadequate reporting procedures—were generally not detected.

FRA has occasionally reviewed railroads' reporting procedures and recommended corrective actions, which has led to more accurate injury and accident reporting. However, FRA's reporting standards are primarily based on factors that make a particular event reportable and do not address the reporting procedures. Because FRA's reporting standards do not address procedures the railroads need to report accurately, FRA inspectors do not have the authority to cite railroads for internal control procedure weaknesses.

Recommendations

To improve the accuracy and reliability of FRA's injury and accident data base as well as clarify reporting requirements for the railroads, GAO recommends that the Secretary of Transportation direct the Administrator of FRA to (1) require railroads to establish injury and accident reporting internal control procedures, (2) include an analysis of railroads' internal control procedures for reporting in its safety record inspections, and (3) provide inspectors with the authority to take enforcement actions against railroads with inadequate internal control procedures. GAO is also making additional recommendations to improve reporting accuracy. (See ch. 3.)

Agency Comments

GAO obtained and incorporated the views of responsible FRA officials on the factual information presented. However, as requested by the Chairman's office, GAO did not obtain official comments on a draft of this report.

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Abbreviations

AAR	Association of American Railroads
CCP	Chicago, Central and Pacific Railroad
CNW	Chicago and North Western Transportation Company
CSX	CSX Transportation
FRA	Federal Railroad Administration
GAO	General Accounting Office
UP	Union Pacific Railroad

Introduction

The Chairman, House Committee on Energy and Commerce, stated in a letter to the Comptroller General that he was concerned about railroad safety and requested that we determine whether the Federal Railroad Administration's (FRA) safety activities were adequate to protect railroad employees and the public from being injured in train accidents. This is the first of a series of reports responding to the Chairman's request. It assesses the adequacy of FRA's railroad injury and accident reporting system, which FRA uses as a basis for planning and executing its safety program.

The federal government's role in railroad safety is to protect railroad employees and the public by ensuring the safe operation of passenger and freight trains. The Secretary of Transportation's responsibilities, under the Rail Safety Act of 1970, as amended, have been delegated to FRA. FRA's safety mission includes (1) establishing federal rail safety rules and standards; (2) inspecting rail carrier track, equipment, and operating practices; and (3) enforcing federal safety rules and standards. The thrust of FRA's safety program is to reduce the potential for injuries and accidents to rail employees and the public.

To carry out its safety mission, FRA needs information about the hazardous conditions of the nation's railroads to enforce safety rules and standards and to develop railroad injury and accident prevention programs. The injury and accident reports submitted by the railroads form the basis for FRA's overall railroad safety program. FRA uses injury and accident data for, among other things, establishing its inspection strategy and determining the number of inspectors it needs, determining comparative trends of railroad safety, and calculating the costs and benefits of proposed safety rules. Because FRA uses the data in all aspects of its operations, it is important that the data it receives be as accurate as possible.

FRA has established eight regional offices staffed with safety inspectors who conduct routine safety inspections at the railroads, as well as broader assessments including reviews of a railroad's entire operations. This field inspection force is organized around five discipline areas: locomotive power and equipment; operating practices; track; signal and train control; and hazardous materials. FRA operating practices inspectors are generally responsible for reviewing injury and accident records to determine whether the railroads are accurately reporting injuries and accidents.

Railroad Reporting Requirements

FRA relies on a system of railroad injury and accident self-reporting to identify safety problems at individual railroads and the railroad industry as a whole. FRA has prescribed reporting regulations identifying the types of safety data to be filed monthly by the railroads. These regulations require railroads to collect and report information monthly on the circumstances surrounding train and non-train injuries and train accidents,¹ including railroad-highway crossing accidents. The amount and types of data railroads are required to report to FRA depend on the severity of the injuries and the amount of damage to railroad equipment and track.

Generally, railroads are required to report to FRA all deaths and all injuries that occur on or adjacent to railroad property, other than those injuries requiring one-time first-aid treatment of minor cuts, burns, and splinters. Railroads must report train accidents, which FRA defines as collisions, derailments, and other occurrences, for which damages to railroad equipment and track exceed \$5,700.² The threshold for accident reporting, which is revised periodically, was increased from \$5,200 to the current level on January 1, 1989. Railroads are also required to report all rail-highway crossing accidents regardless of damage to equipment and track.

FRA's Use of Annual Railroad Injury and Accident Statistics

FRA sorts and tabulates injury and accident data to identify historical trends in safety and to report national injury and accident totals. FRA publishes an annual bulletin containing these data and makes the bulletin, along with other rail safety information, available for use by the Congress, the public, and the railroads to assess safety conditions in the rail industry. The following tables show, according to FRA's data base, the injuries and accidents reported in 1983 through 1987 for the nation and for the five railroads included in our review.

¹Train injuries involve moving equipment and non-train injuries involve stationary equipment.

²Reportable damages are comprised of the costs to repair or replace railroad property involved in the accident. Damages to property owned by third parties are not considered for reporting purposes or reported to FRA.

Table 1.1: Railroad Train and Non-Train Injuries

Year	Total U.S.	Selected railroads				
		Amtrak	CNW ^a	CSX ^b	UP ^c	CCP ^d
1983	35,892	1,785	954	5,672	1,633	•
1984	39,817	2,049	956	6,338	1,682	•
1985	35,340	1,982	832	5,926	1,682	•
1986	28,014	1,919	790	4,230	2,934	64
1987	27,198	2,173	588	3,489	2,727	81

Note: Data derived from FRA's 1983-87 Accident/Incident Bulletins.

^aCNW = Chicago and North Western Transportation Co.

^bCSX = CSX Transportation.

^cUP = Union Pacific Railroad.

^dCCP—Chicago, Central and Pacific Railroad—did not begin operations until 1986.

Table 1.2: Train Miles, Accidents, and Damages

	Year	Total train miles	Train accidents	Damages
U.S.	1983	558,190,305	3,906	\$208,350,456
	1984	592,600,037	3,900	240,462,514
	1985	570,910,626	3,430	188,017,822
	1986	567,098,523	2,761	167,549,306
	1987	581,313,555	2,647	177,185,352
Amtrak	1983	29,626,679	62	5,560,454
	1984	29,078,103	64	18,591,535
	1985	29,030,776	62	1,739,209
	1986	29,040,776	57	1,651,153
	1987	32,623,668	85	18,622,162
CNW	1983	17,590,841	345	9,893,631
	1984	17,683,017	234	7,288,164
	1985	17,112,207	199	6,687,984
	1986	17,010,708	229	6,342,972
	1987	16,282,127	176	7,404,518
CSX	1983	76,322,908	407	20,886,040
	1984	84,984,268	453	26,460,314
	1985	82,097,306	457	29,632,268
	1986	77,346,710	403	22,359,681
	1987	73,436,366	410	29,366,765
UP	1983	32,406,148	149	9,464,233
	1984	34,908,072	178	14,931,962
	1985	33,859,830	150	16,567,471
	1986	62,573,981	322	25,442,164
	1987	66,448,073	297	17,828,125
CCP^a	1986	1,370,795	14	1,433,133
	1987	1,299,386	11	830,533

Note: Data derived from FRA's 1983-87 Accident/Incident Bulletins.

^aCCP did not begin operations until 1986.

Railroad Reporting Procedures

Large railroads have a number of operating divisions that cover a specific geographic area and are responsible for the full range of railroad operations. While safety personnel can be located in the operating divisions, an overall safety officer is routinely located at each railroad's administrative headquarters and is responsible for reporting accidents and injuries to FRA. Railroads investigate all accidents in which their equipment or track is involved. These investigations form the basis for the information railroads include in their monthly injury and accident reports submitted to FRA.

Safety officers have a number of sources of information to help them determine whether an accident or injury meets FRA's reporting thresholds. For accidents, the officers obtain information on damage estimates from supervisory and technical personnel in the operating divisions, as well as from those responsible for actually repairing damaged equipment. Injury information is supplied directly by the employee, through the employee's supervisor, or through clerks at the division offices. In addition, if employees seek compensation for medical treatment or lost workdays, they must submit detailed information to the railroads' claims offices—organizations separate from the operating departments and from the safety offices. Normally, information on medical treatment and lost workdays, located in the claims offices, and data regarding accident damages, located in the repair shops, would be available to safety officers to assist them in determining if an injury or accident should be reported to FRA.

Objectives, Scope, and Methodology

We conducted this review at the request of the Chairman, House Committee on Energy and Commerce. The objectives of this review were to (1) determine the accuracy of railroad injury and accident reports, (2) determine the reasons for inaccurate reporting, (3) ascertain how FRA uses injury and accident reports in carrying out its safety responsibilities, and (4) evaluate the effectiveness of FRA's railroad records-inspection efforts for ensuring accurate reporting.

We examined FRA's authorizing legislation and regulations to determine FRA authorities, railroad safety reporting requirements, and why data on accidents and injuries are important. We interviewed FRA headquarters and regional personnel to identify FRA's safety mission and its injury and accident reporting policies, how FRA uses the data it receives from the railroads, and how its headquarters staff and field inspectors ensure that the information in the data base is accurate. We reviewed economic analyses of proposed regulations and other documents supplied by FRA that showed specific examples of when and how accident and injury data were used.

We reviewed reports of FRA inspections of railroad injury and accident records as well as summaries of its accident investigation reports to document the extent to which FRA had identified inaccurate reporting in the rail industry and the actions it took in response to this situation. We also discussed with National Transportation Safety Board officials their role in rail accident investigations and their investigation reporting requirements.

We visited FRA's data entry contractor to identify the types of controls used for ensuring the accuracy of its data entry work. We observed that the contractor performed numerous checks to verify its work. These checks of the data, as described to us, appeared adequate to ensure that the data base accurately reflected the information reported by the railroads. Therefore, we did not test the contractor's data entry controls to determine their effectiveness.

We interviewed rail labor officials at the United Transportation Union to obtain their views on the status of injury and accident reporting. We also discussed railroad reporting practices and problems with safety officials at the Association of American Railroads (AAR).

To determine the accuracy of FRA's injury and accident data, we selected five railroads: CSX Transportation (CSX), Union Pacific (UP), National Railroad Passenger Corporation (Amtrak), Chicago and North Western Transportation Company (CNW), and Chicago, Central and Pacific Railroad (CCP). We selected CSX and UP because (1) they are two of the largest railroads in the United States, (2) they reported the most accidents and among the most injuries in 1987, and (3) their operations, when combined, provide broad geographical coverage. We selected Amtrak because it is the only intercity rail passenger carrier. Both CNW and CCP operate principally on a regional basis, and we included them to determine if such railroads had different reporting tendencies than larger, national carriers. Additional information on the scope and the methodology of our work is included in appendix I.

Our audit work was performed from February 1988 to February 1989. We discussed the factual information in this report with officials responsible for FRA's safety program. On the basis of these discussions, we made clarifications in the report, where appropriate. As requested, we did not obtain official agency comments on a draft of this report. Our work was performed in accordance with generally accepted government auditing standards.

Railroads Not Accurately Reporting Injury and Accident Data

FRA requires railroads to report on a monthly basis injury and train accident data, including the number of injuries and accidents, employee workdays missed as a result of injuries, and the estimated railroad equipment damage from accidents. In 1987, we found that three railroads we visited—Amtrak, CSX, and UP—did not fully comply with FRA's injury and accident reporting requirements, especially in reporting lost workdays and the cost of accidents. At the small regional railroad we visited, CCP, we could not locate sufficient records to verify its injury and accident reporting procedures. We found, however, that CNW generally complied with FRA's reporting requirements, except for lost workdays.

CSX and UP underreported injuries and accidents because they lacked internal control procedures requiring safety offices to obtain information from other units, such as claims and repair departments, to determine whether an injury or accident met FRA's reporting requirements. Amtrak had informal internal control procedures, but its safety offices did not always follow the procedures. Further, these three railroads were not updating reports on lost workdays and accident damages, which resulted in inaccurate reporting.

Railroad safety officials at Amtrak, CSX, and UP agreed with us that they had injury and accident reporting problems and stated that they were taking action to improve their injury reporting by developing and establishing internal control procedures. CCP also had begun to improve its injury recordkeeping in late 1987. According to officials at each of these railroads, improvements for accident reporting were planned, but development of related internal control procedures were lagging behind those for injury reporting.

CNW reported more accurately to FRA the number of injuries and accidents, as well as the cost of accident damages, because it had internal control procedures requiring the safety office to update its reports before submitting them to FRA. Although CNW also updated lost workdays before reporting them to FRA, it still reported them inaccurately because it underestimated the total days that would be lost due to the injuries.

Injury Reporting

FRA requires railroads to report monthly the number of all injuries, other than those requiring only first aid, and the estimated number of workdays lost as a result of the injuries. FRA categorizes severe injuries as those for which an employee is absent at least 10 workdays and uses

the information to determine the number of inspectors it needs. Our reviews at Amtrak, CSX, and UP disclosed that the railroads should have reported about 12 percent of the unreported injuries we reviewed and underreported the number of lost workdays by 292 percent and the number of severe injuries by about 50 percent. The primary reasons for underreporting by the railroads were that their safety offices did not (1) systematically contact other offices to obtain information on employee claims, medical treatment, and lost workdays and (2) update their initial reported estimates of lost workdays resulting from injuries. We did not determine the accuracy of CCP reporting because of insufficient records to independently verify injury data.

CNW correctly reported injury data to FRA except for lost workdays, which it underreported by 222 percent. Although CNW had internal control procedures in which the safety office reconciled information with claims officials and updated its initial reports, it still underestimated total lost workdays.

Personal Injuries Unreported

On the basis of our review of selected unreported injury files, three railroads we visited did not report all of the injuries that met FRA's reporting criteria. Table 2.1 below shows that of the 521 unreported injuries we reviewed, 61, or about 12 percent, should have been reported.

Table 2.1: Analysis of Unreported Employee Train Injuries for Five Railroads

RR	Unreported injuries, selected divisions	Unreported injuries reviewed	Injuries found reportable	Percent
Amtrak ^a	139	46	2	4.3
CNW	92	24	0	0.0
CSX	409 ^b	409 ^b	53	13.0
UP	49	42	6	14.3
CCP	46	c	c	
Total	735	521	61	11.7

^aAmtrak data also include passenger injuries.

^bBecause CSX had an automated system, we were able to review all unreported train and non-train injuries.

^cCCP did not have sufficient records to verify injury reporting decisions; therefore, we were not able to review injury reports fully.

In 1987, UP's Illinois and Kansas divisions reported 81 train injuries and had 49 unreported train injuries. Our review of 42 of the unreported

train injuries revealed 6 injuries, or 14.3 percent, that met FRA reporting criteria and were not reported.

In 1987, CSX's Baltimore and Atlanta divisions reported 550 injuries to FRA and had 409 unreported injuries. Our review of the 409 unreported injuries revealed 53 injuries, or 13 percent, that met FRA reporting criteria but were not reported.

At Amtrak, the New York and Philadelphia divisions reported 240 employee and passenger train injuries in 1987. In our review of 46 unreported injury files at Amtrak, we found 2 injuries that should have been reported. However, we also determined that 32 injuries resulting from the accident at Chase, Maryland, had mistakenly been omitted from Amtrak's reports to FRA for that accident.

In contrast to our findings at CSX, UP, and Amtrak, our review of a sample of 24 unreported injury files at CNW disclosed that none of the injuries met FRA's reporting criteria.

Lost Workdays Understated

We reviewed 156 train injuries with an estimated 2,176 missed workdays at UP, Amtrak, CSX, and CNW. Railroad records for these 156 injuries showed that the employees actually missed 8,023 workdays—5,847 workdays more than indicated by FRA data.

Table 2.2: Comparison of Reported Lost Workdays With Actual Lost Workdays

RR	Injuries reviewed	Lost workdays reported	Actual lost workdays	Difference	Percent
UP	40	323	1,490	1,167	361.3
Amtrak	38	373	1,401	1,028	275.6
CSX	41	759	2,809	2,050	270.1
CNW	37	721	2,323	1,602	222.2
Total	156	2,176	8,023	5,847	268.7

As Table 2.2 shows, actual workdays lost by the 156 injured employees exceeded FRA's data on lost workdays for those injuries by 268.7 percent. At UP, for example, FRA data showed 323 lost workdays for the 40 injuries we reviewed. UP records, however, showed that these 40 employees actually lost 1,490 workdays. Reviews of injury records at other railroads showed similar results.

Severity of Injuries
Understated

We found that FRA data on severe injuries, defined by FRA as those with at least 10 lost workdays, were understated at three of the railroads we visited. At UP, Amtrak, and CSX, we reviewed 180 injuries meeting FRA reporting criteria. Of these 180, FRA data showed 51 injuries with at least 10 lost workdays. However, railroad records showed that 90 of the 180 injuries involved at least 10 lost workdays. As a result, FRA data reflected only 56.6 percent of the actual number of severe injuries in the cases we reviewed. For the 37 train injuries at CNW we reviewed that met FRA reporting criteria, FRA records showed 22 injuries involving at least 10 lost workdays. CNW records showed the same 22 injuries.

The severity of injuries and number of lost workdays for the three railroads were understated because (1) UP and CSX did not have proper techniques to ensure that all injuries were reported, (2) none of the three railroads consistently updated days lost prior to reporting the injury to FRA, and (3) FRA did not require railroads to update their initial reported estimates of lost workdays.

Reason for Accurate
Reporting

CNW's accurate reporting of the number of injuries was the result of communication between its safety office and claims department to identify reportable injuries. The two entities met once a month to compare lists of all injuries prepared by claims agents with a list prepared by the safety office that identified the injuries it planned to report. According to CNW safety officials, claims files have been set up by the railroad for every injury. In their view, comparison of claims department files with safety office records provides a reliable means to ensure accurate reporting of all injuries.

Besides having control techniques to classify reportable injuries, CNW uses a "15-day" report to update the status of each injury before reporting it to FRA. This resulted in more accurate disclosure of the severity of each injury even though CNW underestimated the total number of lost workdays. CNW's consistent use of these reports resulted in accurate reporting of severe injuries.

Reasons for
Underreporting

Three of the railroads we visited underreported injuries, lost workdays, and the number of severe injuries. This occurred because their safety offices did not systematically reconcile employee claims information, medical treatment, and lost workdays, nor did they update initial reported lost workdays. UP and CSX underreported injuries because

neither railroad obtained all available information within their organizations. Specifically, neither railroad had internal control procedures in place in 1987 requiring the safety office to systematically check claims records for all injuries. As a result, the safety offices missed important details on medical treatment and lost workdays for a number of injuries. Both CSX and UP operating officials agreed that their railroads had problems with injury reporting in 1987; they stated that since 1987 steps have been taken to improve reporting procedures.

The two divisions at Amtrak we visited had informal procedures to cross-check claims for injury compensation with injury reports. One division sent a weekly listing of claims received to its safety office, while according to Amtrak officials the other division's claims office discussed a monthly list of injuries with claims with the safety office. In addition, one division also generated a weekly list of medical information on injured employees, which the safety office checked against the appropriate employee's injury file. However, these cross-checking techniques were implemented on an informal basis, and Amtrak did not have system-wide procedures in place that required a cross-check between claims and safety office records for all injuries.

Accident Reporting

FRA has defined an accident as an occurrence that exceeds a dollar damage threshold and requires the railroads to report all accidents. Although FRA defines which accidents must be reported, it has not set standards for the information on which railroads should base their reporting decisions.

Of the five railroads we reviewed, CSX, UP, and Amtrak did not correctly identify all reportable accidents. In contrast, CNW properly classified the unreported accidents we reviewed for its Eastern division. CCP did not track repair costs for damaged equipment, and therefore it could not provide us sufficient records documenting decisions to exclude accidents from monthly reports to FRA or confirming the accuracy of property damage estimates.

Safety offices at the railroads we visited varied widely in the procedures they used to gather information on property damages and to assure themselves that all relevant data had been accumulated. As a result, the carriers overlooked many accidents. Reasons for not detecting reportable accidents ranged from (1) the offices' failure to

secure the most accurate property damage estimates to (2) internal control weaknesses that prevented the offices from identifying accident damages exceeding the reporting threshold.

Underreporting of Accidents

Our review of selected unreported accidents at the five railroads disclosed that they did not report all of the accidents that met FRA's reporting threshold of \$5,200. Table 2.3 shows that of the 532 unreported accidents we reviewed, 52, or about 10 percent, should have been reported.

Table 2.3: Analysis of Unreported Accidents for Five Railroads

RR	Unreported accidents	Unreported accidents reviewed	Accidents reportable	Percent
Amtrak	144	11	3	27.3
CNW	641	20	0	0.0
CSX	624	21	9	42.8
UP	480	480 ^a	40	8.3
CCP	361	^b	^b	^b
Total	2,250	532	52	9.8

^aBecause UP had an automated system, we were able to review all unreported accidents.

^bCCP did not have sufficient records to verify accident damages; therefore, we were not able to review accident reports fully.

CSX, UP, and Amtrak significantly underreported their accidents and varied in the degree of not reporting from 8 to 43 percent.

- While we could identify actual repair costs with which to verify only 21 of the 40 sampled unreported accidents at CSX's Baltimore and Atlanta divisions, the result of our work indicated that CSX had difficulty determining the reportability of all accidents. On the basis of our limited review, 9 of 21 unreported accidents, or about 43 percent, met the reporting threshold of \$5,200.
- For its Kansas and Illinois divisions in 1987, UP reported 51 accidents and did not report 480 accidents. Of these 480 unreported accidents, we found that UP did not report 40, or about 8 percent, that exceeded FRA's \$5,200 threshold. Therefore, FRA's data base did not contain 40 of 91 reportable accidents, or about 44 percent of the accidents occurring in the two divisions.
- Amtrak reported 43 accidents for its New York and Philadelphia divisions. Out of a sample of 55 unreported accidents, we were able to verify

actual damages in only 11 cases. Three of these 11 exceeded the threshold and should have been reported to FRA.

CSX, UP, and Amtrak safety officers concurred with our results. They agreed that they had problems in their accident reporting systems.

In contrast to these problems, CNW properly classified the 20 unreported accidents we reviewed because it updated the initial field estimates with the repair shop estimates before submitting reports to FRA. At CNW a final accident report was due at headquarters 20 days after the date of the accident. This procedure allowed time for damaged equipment to be moved to repair points and detailed cost estimates to be prepared. As a result, none of the 20 unreported accidents exceeded FRA's reporting threshold.

Had CNW, like the other railroads, relied on initial damage estimates prepared at the accident scene instead of repair shop estimates, it might have failed to report six accidents. Initial estimates of 6 of the 20 accidents we reviewed fell below the reporting threshold but were adjusted upward by the safety office on the basis of revised estimates received from repair shops. Because of adjustments to the initial estimates, damages for the six accidents exceeded the threshold and CNW subsequently reported them to FRA.

Accident Damage Understated

Three railroads significantly understated the amount of their property damages.¹ We reviewed \$6.8 million in reported property damages by CSX, UP, Amtrak, and CNW for 171 reported accidents. On the basis of our review, the four railroads should have reported \$10.3 million. The \$3.5 million difference represents about 52 percent of the amount actually reported. In contrast, CNW generally reported damages more accurately for accidents in its Eastern division. Table 2.4 shows the results of our assessment of damage reporting practices at the four railroads.

¹The railroads we visited did not update estimates of track damage. Track was normally repaired as soon as possible after the accident in order to resume operations, and original field estimates of track damages remained in the railroads' files. Therefore, we only verified the changes, if any, in damage estimates for on-track equipment such as locomotives and cars.

Chapter 2
Railroads Not Accurately Reporting Injury
and Accident Data

Table 2.4: FRA Data Understate Accident Damage

RR	Reportable accidents reviewed by GAO	Reported damages reviewed by GAO	Total damages found by GAO	Difference	Percent
CSX	30	\$920,562	\$1,556,167	\$635,605	69
UP	91	1,837,449	2,869,319	1,031,870	56
Amtrak	37	3,730,028	5,567,505	1,837,477	49
CNW	13	337,857	350,921	13,064	04
Total	171	\$6,825,896	\$10,343,912	\$3,518,016	52

Source: Railroad accident reports submitted to FRA and their safety and repair shop records.

Our work shows that, except for CNW, the railroads did not have internal control procedures to secure repair data needed to determine accident damages. In addition, railroads varied greatly in the accuracy of accident damages reported to FRA, ranging from a low of 4 percent for CNW to a high of 69 percent for CSX. Of the four railroads, CNW reported more accurately because it followed procedures that allowed it to obtain repair shop estimates, which are generally more reliable, before submitting accident reports to FRA.

Reasons for Underreporting Accidents and Damages

Safety offices at the four railroads varied in the procedures they used to gather information on property damages and to assure themselves that all relevant data had been accumulated. As a result, the carriers overlooked many accidents and reported incorrect data to FRA.

At CSX, UP, and Amtrak, some accidents were determined to be non-reportable because the three railroads based their figures for FRA reporting purposes on initial field estimates of track and equipment damages prepared at the accident scene. However, these initial field estimates of equipment damages often proved to be incorrect. More accurate repair estimates from repair shops were generally available within a day or two after the accidents, but the safety officers did not use repair shop estimates for determining if they should have reported the accidents. Also, CSX did not always require division officers to report to the safety officers minor accidents that occurred in rail yards, unless their initial estimate of damages exceeded \$5,200. In addition, an Amtrak safety official stated that Amtrak's recordkeeping for minor accidents is poor. Therefore, safety officers at these railroads did not have detailed information on all accidents that actually occurred. At UP, we also found several misplaced 1987 accident reports that UP failed to submit to FRA.

Some Actions Being Taken to Improve Injury and Accident Reporting

We found that the three railroads that underreported injuries and accidents in 1987 had begun to improve their reporting procedures. To help control costs, these railroads initiated revised reporting procedures to ensure that their safety offices received more accurate and complete information on injuries and accidents. Such improvements should result in more accurate reporting of their injuries and accidents to FRA.

CSX instituted a weekly automated check of all injury claim records against all safety office records beginning in January 1988. To assess injury reportability, CSX reviews medical and some payroll information on all unreported injuries for which employees have filed claims. In 1987, according to CSX officials, the railroad was only beginning to develop this system; thus, some reportable injuries with claims were never entered into CSX's safety reporting system. CSX officials stated that this improvement in internal controls has resulted in the railroad reporting 5 to 10 percent more injuries in 1988 than it would have using 1987 reporting procedures.

According to CSX officials, CSX also plans to improve internal accident reporting procedures. CSX personnel plan to develop an automated information system in which locomotive and car repair shop estimates would be available for use by the safety office before the FRA accident reporting deadline. Such a system, we believe, would increase the accuracy of CSX's accident reporting to FRA.

At the time of our visit to UP in mid-1988, it was undertaking efforts to improve reporting procedures and automated data processing systems. Injury reporting was a function of the railroad's casualty management office, which also included claims handling activities. According to UP officials the office was developing a computerized information system including both safety office and claims information. This system should enable the office to make automated checks between claims and safety information, thereby improving quality of injury data as well as injury reporting accuracy. For accident reporting, the UP operating practices office instituted a review of the automated equipment damage reports in mid-1988 to identify accidents that had not been properly reported.

Amtrak, according to one official, is in the process of drafting formal procedures for periodically checking the entire railroad's claims records by the safety office. We found such control techniques for reporting injuries were performed on an informal basis at the New York and Philadelphia divisions in 1987. According to Amtrak officials, efforts to improve accident reporting procedures were initiated in December 1988.

Although CCP had not instituted any formal reporting procedures, it had begun to improve its recordkeeping. In December 1987, CCP began keeping independent claims records, separate from safety office records.

Conclusions

The results of our work at selected railroads showed that injuries and accidents were not being accurately reported to FRA. Because our work was limited to five railroads and to relatively few accidents and injuries that occurred in 1987, we could not determine the magnitude of the reporting problem, nor has FRA made such a determination.

Erroneous injury and accident reporting occurred primarily because the railroads lacked adequate internal control procedures for properly classifying and reporting the events. We also found that the railroads were taking some action to improve their internal control procedures, and these improvements should ensure more accurate reporting results. Chapter 3 discusses changes FRA needs to take regarding its reporting standards and on-site records inspections. These changes should improve all railroads' internal control procedures and provide FRA with a more accurate injury and accident data base.

Improved Injury and Accident Reporting Needed for Safer Railroads

In executing its safety mission, FRA relies on railroads to report injury and accident data. FRA uses the data to (1) publish annual national statistics on the safety of the nation's railroads, (2) make comparative analyses of railroads' injury and accident trends to establish its safety inspection and enforcement program strategy, (3) determine the number and types of railroad safety inspectors needed to enforce its programs and where they should be located, (4) monitor inspection and enforcement activities, and (5) calculate the costs and benefits of proposed safety rule changes. It is therefore important that FRA's data base be as accurate as possible.

However, as discussed in chapter 2, injury and accident reports submitted by the railroads were not always accurate because railroad safety offices were not obtaining relevant information from available sources or were not updating the reports. Our work also showed that railroads could more accurately report injuries and accidents by establishing internal control procedures governing the collection and updating of available information before reporting to FRA. The evidence we obtained indicates that FRA's injury and accident data base, as it stood at the time of our review, was not accurate and could adversely affect FRA's safety mission.

FRA's records inspections comprise only about 5 percent of its inspection effort and are usually focused on detecting individual errors rather than assessing a railroad's reporting procedures to determine whether accurate injury and accident reports were being prepared. In those cases where FRA conducted inspections of railroad reporting procedures, the railroads responded by taking corrective actions and reporting more accurately. FRA could obtain more accurate information by requiring railroads to update reports of lost workdays due to injuries, and by clarifying its requirement to update significant changes in accident reports.

FRA Program Strategies Based on Railroad Injury and Accident Data

FRA uses the injury and accident data contained in its statistical data base in executing most of its safety responsibilities. The information is analyzed by headquarters and published annually. The data are also used in developing inspection and enforcement strategies as well as in benefit-cost analyses for proposed safety rules.

National Statistics
Published on Railroad
Safety

Each month, FRA's Office of Safety receives comprehensive reports on railroad accidents, injuries, and casualties. These reports identify the railroad involved, location, type of accident, hazardous materials involved, operational data, environmental conditions, track and equipment information, casualties involved, and the cause of the accident as reported by the railroad. All of these data are recorded in FRA's headquarters injury and accident data base and used in preparing FRA's annual safety bulletins. The bulletins are widely distributed to the industry, government, and others interested in railroad safety.

On the basis of FRA's national injury and accident statistics, the FRA Administrator has testified before the House and Senate Appropriations Committees that rail safety has been improving. For example, in 1987 the Administrator testified that the number of accidents reached a peak in the late 1970's and began declining thereafter—a total of 31 percent from 1981 to 1986. Accidents continued to decline by another 4 percent from 1986 to 1987. Injuries, according to the data, showed similar trends over the same period. Similarly, in 1987, the Administrator testified before the Subcommittee on Transportation, Tourism, and Hazardous Materials, House Committee on Energy and Commerce, that the past 3 years have been the safest 36 months in the history of FRA oversight of the railroad industry. The Administrator concluded that no other mode of transportation approaches the magnitude of improvement in safety that the railroads have experienced. However, our work showing inaccuracies in injury and accident data reported by railroads casts doubts on the degree to which safety, as measured by declines in injuries and accidents, has improved.

FRA's annual Accident/Incident Bulletin summarizes reportable accidents and injuries that occurred during the previous calendar year. The bulletins contain historical trends for the last 6 years and detailed information on the number of accidents, injuries, and casualties during the reporting year. Tables and figures in the bulletins contain details of the various factors in railroad accidents such as cause, types of persons injured or killed, job category, and the specific railroad(s) involved.

Inspection Activity Based
on Accident and Injury
Data

The data in FRA's statistical data base are particularly important to FRA's inspection activities. Specifically, they are used to develop FRA's national inspection plan and broad safety assessments. FRA's national inspection plan is comprised of individual plans from FRA's regional offices, each of which describe how FRA will carry out its safety inspection program.

The basis for each region's plan is information extracted from FRA's injury and accident data base.

To supplement its on-going inspection program with a more systematic assessment of each railroad's approach to safety, FRA conducts broad assessments of railroad operations. Railroads are selected for broad assessments based on a variety of factors arising from statistical measurements of performance and observations by FRA field inspectors. A broad assessment can be prompted by data revealing that a particular railroad's safety performance has deteriorated. However, because reported safety data are not accurate, FRA could conceivably target for a broad assessment a railroad that reports more accurately than a railroad whose inaccurate reports make it appear to have a better safety record.

FRA Staffing Decisions Related to Accident and Injury Data

To enable it to more effectively manage the resources available for its safety inspection and enforcement programs, FRA recently developed a computer staffing model consisting of several elements. Two of these elements depend on the injury and accident data reported by the railroads:

- The first element quantifies the number of professional field staff needed to perform the various types of inspections. The model uses a common measure that equalizes freight traffic among the regions so that an inspector's performance can be measured against accidents and casualties.
- The second element of the staffing model allocates the inspector staff positions among the eight FRA regions using nine measures of safety risk. FRA's source of data for two of these nine measures, casualties and accidents, is its Office of Safety's accident/incident data base. These two measures are important factors in determining where inspectors are needed because the model bases its allocation on the principle of risk.

Accident and Injury Data Used in Benefit-Cost Analyses for Safety Rules

Both costs and benefits of proposed safety rules are usually estimated by comparing known historical information to what might have been had the proposed rule been in effect. The information supplied by the industry, as reflected in FRA's accident/incident data base, is the historical baseline for these analyses.

According to Office of Safety officials, the accuracy of industry-supplied data becomes very important under current federal regulatory procedures because the benefit-cost analysis is often a critical factor in whether to proceed with a safety regulation. According to these officials, inaccurate data that might, for example, lead FRA to underestimate a safety problem could cause it to forgo a rule that might save many lives, prevent injuries, and reduce damages. On the other side, inaccurate data may cause FRA to waste both the industry's and FRA's resources on one problem while more severe problems remain unaddressed.

FRA Data Base May Not Be Accurate

As discussed above, FRA relies on injury and accident reports submitted by railroads as a basis for conducting its overall railroad safety program. Therefore, it is important that the data it receives be as accurate as possible. However, we found significant underreporting and inaccurate reporting of injury and accident data by the railroads we visited. For example, as discussed in chapter 2, we found that four railroads underreported lost workdays by about 269 percent, and dollar damages from accidents by about 52 percent.

Although the scope of our work was not sufficient to project our results to the entire railroad industry, we believe the evidence obtained from the railroads we visited indicates that FRA's data base is not accurate. In its decision-making process, FRA relies on this data base and, to the extent the data base is inaccurate, its overall safety mission could be adversely affected.

FRA Should Take Action to Improve Railroad Injury and Accident Reporting

FRA's oversight of self-reporting by the railroads has not been sufficient to obtain consistently accurate injury and accident reports. FRA inspectors spend relatively little time verifying the process the railroads use to report injuries and accidents. Their efforts are generally aimed at identifying individual injury reporting errors, rather than focusing on the causes of the errors. This has occurred because FRA's reporting standards do not require railroads to establish internal control procedures for reporting. Rather, FRA's reporting standards address the documentation railroads must maintain to determine whether an event is to be reported.

FRA on occasion has reviewed railroads' reporting procedures and recommended corrective action, which led to more accurate reporting of injuries and accidents. We believe that FRA's reporting standards should require railroads to establish internal control procedures for reporting

that will ensure more accurate injury and accident reporting. Once such reporting standards are established, FRA should periodically review the procedures and cite railroads for procedural deficiencies when inaccurate reporting is found and the cause can be attributed to internal control weaknesses.

Another reason railroads were underreporting was that they did not update actual changes when significant differences occurred between reported and actual damages and they were not required to update lost workdays due to injuries.

Information Available for Accurate Reporting

Although organizations within the railroads we visited generally had injury and accident information needed to document reporting decisions and to report accurately, the reporting officer did not always have this information. For injuries, safety office files contained information that was related to lost workdays and medical treatment but that was often not complete enough to identify whether an injury met FRA reporting criteria. Because of the railroads' and the employees' desires to document the nature of the injuries for use in possible compensation proceedings, claims department records contained more extensive detail on medical treatment, restricted duty, and lost workdays than those of the safety office. According to safety office and claims department officials at the railroads we visited, when combined with safety office records, claims department records provide railroads with sufficient additional detail to document all injuries meeting FRA's criteria.

Safety office accident files generally contained preliminary data on the nature of accidents and their damages. Damage estimates were also available at repair shops, which usually identified expected repair costs soon after the preliminary estimate had been made at the accident scene. On the basis of our observations at CNW and according to engineering officers at other railroads we visited, shop estimates provide more accurate indicators of total railroad equipment damages resulting from an accident.

We observed that safety offices, repair shops, and claims departments generally had the data necessary for accurate reporting. According to safety officials at each railroad, the safety offices generally waited the full period of time allowed before reporting to FRA—up to 60 days after the injury or accident. Therefore, except for minor accidents at CSX and Amtrak, more reliable injury data and repair shop estimates could have been secured before submitting the data to FRA. At CSX and Amtrak,

however, the safety offices delegated accident reporting decision-making responsibility to division officers and did not have procedures for tracking equipment damages occurring in minor accidents. As a result, CSX and Amtrak reporting officers were not aware of all the accidents that had occurred and could not document why reportable accidents had been excluded from reports to FRA.

CCP did not maintain adequate records with which we could verify the reportability of either its injuries or accidents. This situation, as well as the situations at CSX and Amtrak noted above, represents deviations from FRA regulations.

Internal Control Procedures Needed

Under a system of self-reporting such as the one FRA uses to obtain railroad safety data, internal control procedures are necessary to ensure that reliable and accurate data are obtained, maintained, and disclosed by the railroads. FRA's reporting regulations, however, concentrate on instructions for classifying reportable information and warn about some common errors rather than setting procedural standards for injury and accident reporting. FRA should establish reporting standards that require railroads to institute proper internal control procedures for reporting. Once the railroads comply with the standards, FRA should use its enforcement authority to force noncomplying railroads to correct procedural weaknesses.

Our review showed that only one of the five railroads had effective internal control procedures for updating injury and accident information prior to reporting to FRA. While CSX, Amtrak, UP, and CCP lacked such procedures, CNW centralized reporting responsibilities and updated injury and accident information before reporting to FRA. CNW's procedures involved extensive communication between the safety office, which is responsible for reporting to FRA, and other departments within the railroad. The procedures required CNW safety officials to obtain (1) claims records for all injuries and repair shop estimates for all accidents before reporting them to FRA and (2) updates on the status of every accident and injury 15 to 20 days after their occurrence. As a result, CNW reported more accurately than the other railroads we visited.

FRA's Records Inspections Should Focus on Internal Controls

FRA uses a variety of strategies to assess the accuracy of injury and accident reporting by the railroads; yet, it has expended only minimal effort in this area. FRA relies mainly on its routine records inspections to ensure accurate reporting. However, FRA needs to use broader assessments of railroad reporting procedures and complaint investigations to identify carrier nonreporting or inaccurate reporting of injuries and accidents.

FRA's field inspector force is responsible for monitoring compliance with injury and accident reporting requirements, and inspectors in the operating practices discipline generally conduct the inspections. FRA has 45 operating practices inspectors whose injury and accident records inspections constitute only a small portion of all operating practices activity. Between January 1983 and September 1988, FRA inspectors filed a total of 71,096 operating practices inspection reports, of which 3,309, or 4.7 percent, were records inspections. Of the total 23,263 defects these FRA inspectors identified during this period, 2,100, or 9 percent, resulted from records inspections.

FRA's present approach of examining individual cases of injury and accident reporting at the division level does not detect the causes of reporting problems. FRA has on occasion reviewed railroads' reporting procedures and identified procedural weaknesses that contributed to poor reporting. On these occasions, FRA has made recommendations to correct these weaknesses. For example, in a broad assessment of the Consolidated Rail Corporation's (Conrail) reporting systems and procedures during 1987, FRA reviewed only 18 percent of the carrier's injury records but found 164 unreported injuries. On the basis of its review, FRA projected that Conrail should have reported 2,417 injuries instead of the 1,644 it actually reported, a difference of 773 injuries. FRA also found that Conrail significantly underestimated equipment damages and consequently underreported its accidents.

FRA attributed Conrail's underreporting to (1) inadequate separation of duties between safety officers responsible for reporting injuries and operations officers who competed for safety awards and (2) inadequate procedures for documenting estimated damages that actually occurred in accidents. FRA recommended that Conrail require safety reporting personnel to report directly to officers not in competition for safety awards and that it establish procedures to document accident damages.

In early 1987, FRA also identified underreporting at Burlington Northern. According to FRA Region 6 officials, they became aware of possible

reporting problems at Burlington Northern through routine, on-site inspections and employee complaints. In March 1987, FRA Region 6 initiated a review of the railroad's injury records by analyzing the procedures it used to report injuries. The review revealed that 27 injuries were not reported as required and that lost workdays were understated by 1,996 days. FRA attributed these problems to the absence of internal control procedures to reconcile safety office data on injuries with claims department data and made recommendations for improvements.

As a result of FRA's findings and recommendations, the Burlington Northern corrected the reporting errors and instituted a computer interface between its safety reporting and claims information systems. This procedure provided a means of updating safety reporting using claims data. An FRA follow-up review in February 1988 showed no additional reporting errors at Burlington Northern.

While FRA has reviewed the reporting procedures of some railroads, it has not required its inspectors to do so on a systematic basis. FRA has not instructed its operating practices inspectors to key their inspections to the reporting process of a railroad as they did during the Conrail and Burlington Northern reviews.

Inspectors Need Authority Over Internal Control Procedures

Currently, FRA's reporting standards do not require railroads to have internal control procedures for reporting and, thus, inspectors have no basis for taking enforcement actions. FRA inspectors generally cite railroads for failing to report individual injuries and accidents accurately because FRA's reporting standards are geared to the documentation the railroads need to determine whether or not an event is reportable. When field inspectors identify one or more reporting "defects," or deviations from FRA standards, they may (1) file a notice of the defect with the railroad or (2) cite the railroad in a violation report sent to FRA headquarters. If the inspector cites the railroad for a violation, FRA headquarters may assess a civil penalty of up to \$10,000 per violation. In either case, the railroad comes into compliance by correctly reporting the individual error identified by FRA.

FRA's practice of citing railroads for individual reporting errors has not brought them into compliance. Inaccurate reporting continues because FRA inspectors do not generally identify causes for errors. Therefore, FRA's reporting standards need to require railroads to establish internal control procedures for reporting and to give inspectors the authority to require railroads to correct procedural weaknesses in reporting.

Injury Reports Should Be Updated

FRA does not require railroads to update lost workdays associated with individual injuries. In the absence of a specific requirement to do so, none of the four railroads we visited updated lost workdays for each injury. The number of lost workdays and their use by FRA as a measure of injury severity is an important variable FRA uses in its economic analyses of proposed rule changes. According to the 1988 edition of Railroad Facts, the average railroad employee earned \$121 a day during 1987. In our limited sample of 156 reported employee injuries—less than 1 percent of all reported injuries in 1987—the railroads reported 5,847 fewer days than were actually lost. Therefore, the value of lost time for these relatively few cases was understated by over \$700,000, and the use of such data in economic analyses of proposed rule changes would significantly understate expected benefits arising from the changes.

FRA Should Clarify Definition of Significant Difference

FRA requires railroads to update accident reports when significant differences between reported and actual damages occur. Railroads, however, used varying definitions of “significant” differences and, as a result, submitted few updated accident reports.

An Amtrak official interpreted the requirement for updating reported damages to be a difference of more than \$10,000, while an official at CSX considered \$1,000 to be a significant difference between reported and actual damages. Yet, in only 1 of 13 cases in our sample of Amtrak accidents, in which actual damages exceeded estimated damages by more than \$10,000, did Amtrak actually update a report to FRA. Similarly, actual damages for 18 of 21 CSX accidents in our sample exceeded reported damages by more than \$1,000, but CSX did not update these reports after submitting them to FRA.

Conclusions

FRA uses injury and accident reports submitted by railroads to carry out its safety mission and to publish national statistics on the safety of the nation’s railroads. When the reports contain errors, such as we found in four of the railroads we visited, the reliability of FRA’s data base and the decisions FRA makes based on the data may be affected. For example, FRA might decide, on the basis of inaccurate data, to focus more inspection resources on the railroads that actually report more accurately, because those railroads would appear less safe relative to others. In addition, if most of the railroads understate their injuries, lost workdays, accidents, and damages, the number of inspectors needed and

the benefits of proposed safety rules could thus be understated. Inaccurate injury and accident data could portray railroads to be safer than they actually are.

Railroads' inaccurate injury and accident reporting generally resulted because they lacked effective internal control procedures necessary for accurate reporting. Further, FRA's inspection process has focused on individual records rather than on broad assessments of the procedures the railroads use to report injuries and accidents. As our work shows, when either FRA or the railroads examined reporting procedures, improvements were made in reporting accuracy. Therefore, FRA needs to change the focus of its records inspections to include reporting procedures, as well as individual cases.

Improved internal control procedures could be obtained at the railroads if FRA were to set standards for the procedures that railroads should apply and then determine whether the railroads implemented them. Once standards were in place and FRA found the railroads to be in non-compliance, it could cite the railroads for violating procedural requirements and force them to correct the procedural weaknesses. FRA could also obtain more accurate reports by requiring railroads to update reports of lost workdays due to injuries and by clarifying its requirement to update significant changes in accident reports.

Recommendations

We recommend that the Secretary of Transportation direct the FRA Administrator to

- require railroads to establish injury and accident reporting internal control procedures,
- include an analysis of railroads' internal control procedures for reporting in FRA's safety record inspections,
- provide inspectors with the authority to take enforcement actions against railroads with deficient internal control procedures,
- require railroads to update reports on workdays lost due to injuries, and
- clarify FRA's requirement for railroads to update accident reports when significant changes occur.

Methodology of Work Conducted at Each Railroad

Since we could not review all of the selected railroads' records in the time allotted for this review, we reduced the scope of our work to two divisions each at CSX, UP, and Amtrak. At CNW, we selected one of four divisions. Because CCP, the smallest railroad in our sample, did not have operating divisions, we included all accidents and injuries. The divisions we covered were Baltimore and Atlanta divisions of CSX, Illinois and Kansas divisions at UP, New York and Philadelphia divisions at Amtrak, and the Eastern division at CNW. By limiting our work to the seven divisions plus CCP, we covered about 5 percent of the accidents and about 1 percent of the injuries reported to FRA in 1987.

For the five railroads, we extracted directly from FRA's data base accident and injury information they reported in 1987. We limited our assessments to train accidents and train injuries except at CSX, whose computerized records systems enabled us to include non-train injuries. We did not assess the reliability and accuracy of UP, Amtrak, and CNW non-train injury reports because their reporting systems were not sufficiently automated for us to verify the data in the time available and because the criteria for reporting such injuries are the same as those for train injuries. The only difference between the two is whether the injury occurs incidental to the movement of on-track equipment. Therefore, our findings concerning railroads' reporting systems for train injuries should also apply to non-train injuries.

Once we commenced our on-site checks of accident and injury reporting, we intended to randomly select 80 cases—20 reported accidents, 20 unreported accidents, 20 reported injuries, and 20 unreported injuries—at each location. However, the railroads' reporting practices and record-keeping varied, allowing us to expand the scope of our work in some cases and forcing us to reduce our coverage in others. For example, we reviewed all 328 unreported accidents in UP's Kansas division but looked at only 21 unreported accidents for the two CSX divisions. Similarly, we looked at all 409 unreported injuries that occurred in the two CSX divisions, but generally limited our reviews of unreported injuries to the planned random sample of 20. At CCP, safety officers could not locate sufficient records for us to independently verify the railroad's accident and injury reporting. As a result, the statistics on reportability that we developed and that we address in this report generally cover only four of the five railroads visited; CCP is excluded.

At each railroad, we interviewed safety and operations officials on accident and injury reporting responsibilities, policies, and procedures. We obtained and reviewed reporting manuals when available. To determine

**Appendix I
Methodology of Work Conducted at
Each Railroad**

the reliability and accuracy of the data reported by the selected divisions, we compared the information in FRA's data base with accident and injury records at each railroad. We focused our review on accident and injury information, such as damage to equipment and lost working days, that related directly to FRA's criteria for determining reportability. Specifically, we compared accident property damages reported to FRA in 1987 with railroad records displaying the most recent estimates or actual repair costs when available. We obtained damage estimates or repair costs for unreported accidents to determine if they exceeded FRA's reporting threshold of \$5,200. We reviewed injury files in the safety offices and obtained corresponding information from claims records to document lost days, restricted activity, and medical treatment resulting from the injuries and to determine if all injuries meeting FRA reporting criteria were reported as required. Finally, we discussed our observations with safety officers and obtained their concurrence with our findings.

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