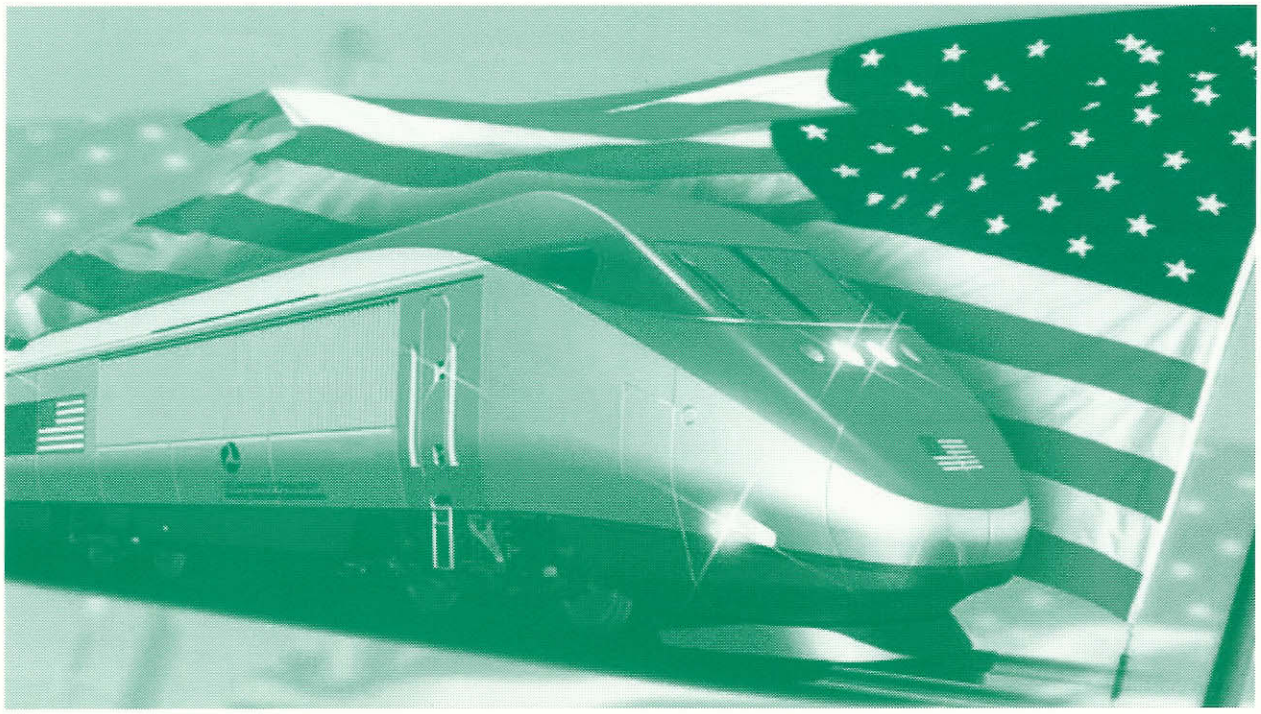
U.S. Department of Transportation
Federal Railroad Administration

July 1999

RAILROAD SAFETY STATISTICS
ANNUAL REPORT 1998



FOREWORD

The Federal Railroad Administration (FRA) has established an ultimate goal of "Zero Tolerance" for railroad-related accidents, injuries and fatalities. In pursuit of that goal, significant progress has been made, particularly over the past six years, in reducing the number of train collisions, derailments, highway-rail grade crossing incidents and injuries to railroad workers. These results have been achieved because of a collaborative effort involving the FRA, railroad management, rail labor, equipment suppliers and contractors, as well as other federal and state agencies whose mission involves ensuring railroad safety. Central to the success of this rail safety effort is the ability to understand the nature of rail-related accidents and to analyze trends in railroad safety.

The FRA's *Railroad Safety Statistics – Annual Report* is intended as a resource for the FRA's safety partners. It is also intended as a general reference source for individuals and organizations with an interest in rail safety issues. Statistical data, tables and charts are provided to depict the nature and cause of many rail-related accidents and incidents that occurred in 1998. Furthermore, selected historical data is included to provide a baseline for understanding the railroad industry's improving safety performance.

It is hoped that the information provided in this publication will provide insight into the most significant safety issues facing the rail industry and, in turn, lead to continued rail safety improvements. Only by continuing our understanding about how and why railroad accidents and incidents occur, can we hope to approach our goal of "Zero Tolerance."

This edition of the Railroad Safety Statistics compiles previous safety bulletins prepared by the Federal Railroad Administration (FRA). These include: the *Accident/Incident Bulletin*; the *Highway-Rail Crossing Accident/Incident And Inventory Bulletin*; and the *Trespasser Bulletin*. The consolidation of accident/incident statistics previously contained in other publications provides the reader with a single source for a comprehensive overview of railroad safety.

The completeness and accuracy of the information presented in this bulletin are primarily dependent upon the nation's railroad's data collection and reporting processes. The FRA conducts routine audits of these procedures, but does not have sufficient resources to perform comprehensive reviews of each railroad's reporting procedures. We extensively review and edit the reports we receive and make inquiry when information is incomplete or inconsistent.

Railroads are required by law to submit accident/incident reports within thirty days after the month to which they pertain. They are also required to update their report if the original information is incomplete or inaccurate. Railroads have until April 15 of the

following year to "close out" their records and submit any updates to complete their file.

It is not possible to identify reportable events that were omitted from a railroad's submission. Likewise, there may be instances where incorrectly reported information passes all reviews and is accepted. Although we attempt to be as vigilant as possible in both the editing and presentation of the accident/incident data reported, errors do occasionally occur.

Any questions, comments, or suggestions regarding the information contained in this publication should be brought to the attention of:

Federal Railroad Administration
Office of Public Affairs (Stop 5)
1120 Vermont Ave., NW
Washington, DC 20590

Phone number (202) 493-6024

This report and additional information about the FRA's various programs, is available on our Web site at http://www.fra.dot.gov.

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CHAPTER 1

OVERVIEW OF ACCIDENTS/INCIDENTS AND RATES

Railroads began reporting accidents to the Federal Government following passage of the Reports Act of 1910. The current definitions describing reportable events were adopted in 1975, and have remained largely unchanged since then. A number of modifications to the record-keeping and reporting requirements were put in place for 1997. These modifications did not redefine what was to be reported, but did expand the types of information being collected and the forms used for reporting. The changes made in 1997 were implemented for the purpose of collecting additional information necessary for safety analysis and to support the Federal Railroad Administration's (FRA) overall goal of hazard elimination and risk reduction on the Nation's railroads.

A railroad is required by Federal Railroad Administration (FRA) regulations at Title 49, Part 225 of the Code of Federal Regulations to use the current FRA Guide for Preparing Accident/Incident Reports ("Guide" or "reporting guide") when preparing its monthly report. The instructions and interpretations contained in this publication are provided to assist railroads in meeting this obligation

"Accident/Incident" is the term used to describe the entire list of reportable events. These include collisions, derailments, and other events involving the operation of on-track equipment and causing reportable damage above an established threshold; impacts between railroad on-track equipment and highway users at crossings; and all other incidents or exposures that cause a fatality or injury to any person, or an occupational illness to a railroad employee.

Accidents/incidents are divided into three major groups for reporting purposes. These correspond to the following FRA forms:

> **Train accidents.** A safety-related event involving on-track rail equipment (both standing and moving), causing monetary damage to the rail equipment and track above a prescribed amount. Reported on form FRA F 6180.54, RAIL EQUIPMENT ACCIDENT/ INCIDENT REPORT. (The threshold for 1998 was $6,600)
>
> **Highway-rail grade crossing incidents.** Any impact between a rail and highway user (both motor vehicles and other users of the crossing) at a designated crossing site, including walkways, sidewalks, etc., associated with the crossing. Reported on form FRA F 6180.57, HIGHWAY-RAIL GRADE CROSSING ACCIDENT/INCIDENT REPORT.
>
> **Other incidents.** Any death, injury, or occupational illness of a railroad employee that is not the result of a "train accident" or "highway-rail incident." Reported on form FRA F 6180.55a, RAILROAD INJURY AND ILLNESS SUMMARY.

A single form is usually sufficient to report most events; however, there are situations when multiple report forms are necessary. An example is a highway-rail crossing incident resulting in

reportable injuries. An accident of this type would require the completion of both a Form FRA F 6180.57 and a Form FRA F 6180.55a. A Form FRA F 6180.54 must also be prepared if reportable on-track equipment and track damage in this accident exceeds the current monetary threshold for train accidents.

Because of overlap in the reporting requirements, some incidents may fall into multiple categories. The incident described above would be counted as a highway-rail incident, but it would also be included in the train accident total. Another example is a motorist hurt in a highway-rail incident after driving around gates at the crossing site. This individual is reported as a "trespasser" on form FRA F 6180.55a, but the event is classified as a highway-rail incident.

If there is an overlap in the information found in different chapters, when possible, a separate column or row total is provided, or counts are excluded when they are more appropriate to another chapter. In the example of the trespasser injured in a highway-rail incident, this injury appears in the highway-rail Chapter, but is excluded from the chapter on trespassing. The train accident counts in Chapter 5 include those highway-rail incidents causing reportable damage above the amount needed for reporting on form FRA F 6180-54. The user of this bulletin can exclude these, if desired, since the number of these are identified in most tables in this Chapter.

This bulletin provides overall national totals as well as specific area of safety concern. For example, Chapter 3 is a summary of all fatal and nonfatal casualties, regardless of the type of event causing them. Subsequent Chapters summarizing train accidents, highway-rail incidents, employee and trespassing casualties, provide additional information on the events causing these casualties.

The data is presented in the following general format. First, there is a graphic historical review of the major indicators of railroad safety since 1975. Following this, are overall totals for the 6-year period beginning with 1992, including summaries by railroad and states for this time frame. Next are a variety of tables and charts for the current year. The chapter for each major reporting area contains a description of the pertinent requirements and definitions associated with that specific accident/incident category.

Extensive consolidation of railroads has occurred over the years. In order to make a more valid comparison of major railroad systems, it was necessary to combine the information reported by predecessor railroads for the years prior to 1998. For example, data from railroads that made up the Southern Pacific Transportation System were merged into the Union Pacific counts.

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OVERVIEW OF ACCIDENT/INCIDENTS AND RATES

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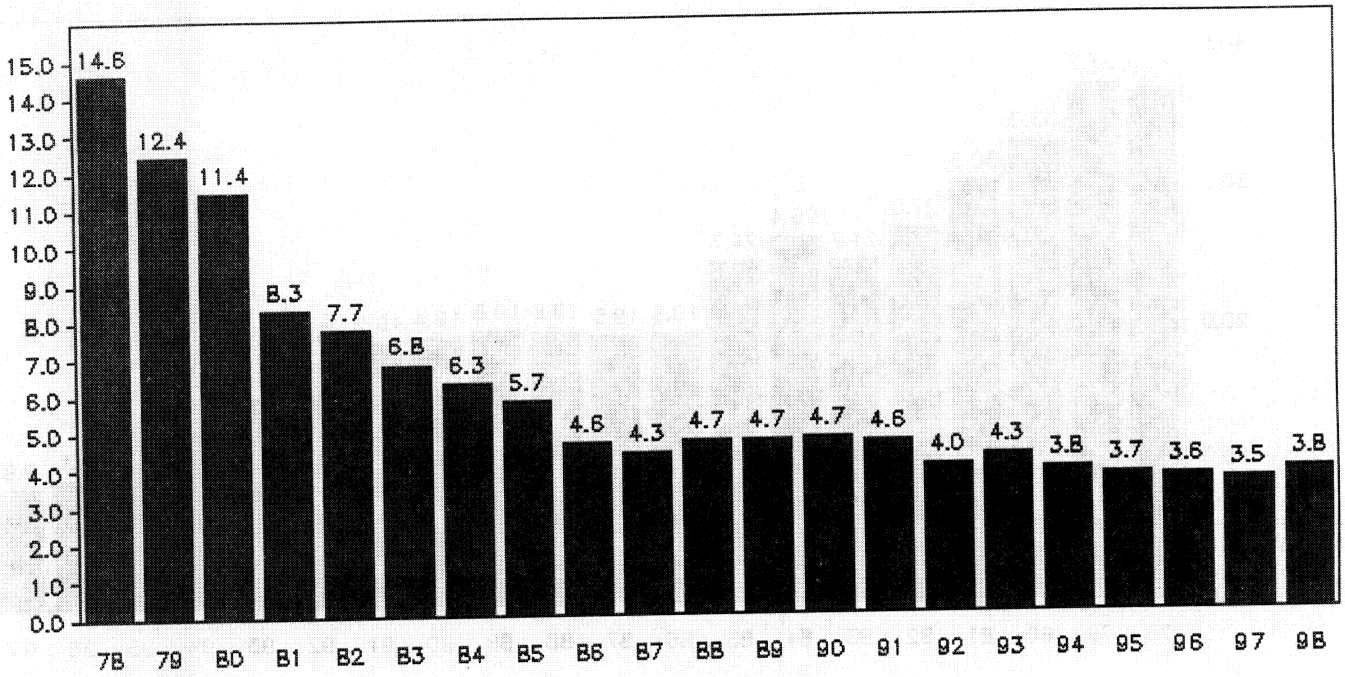
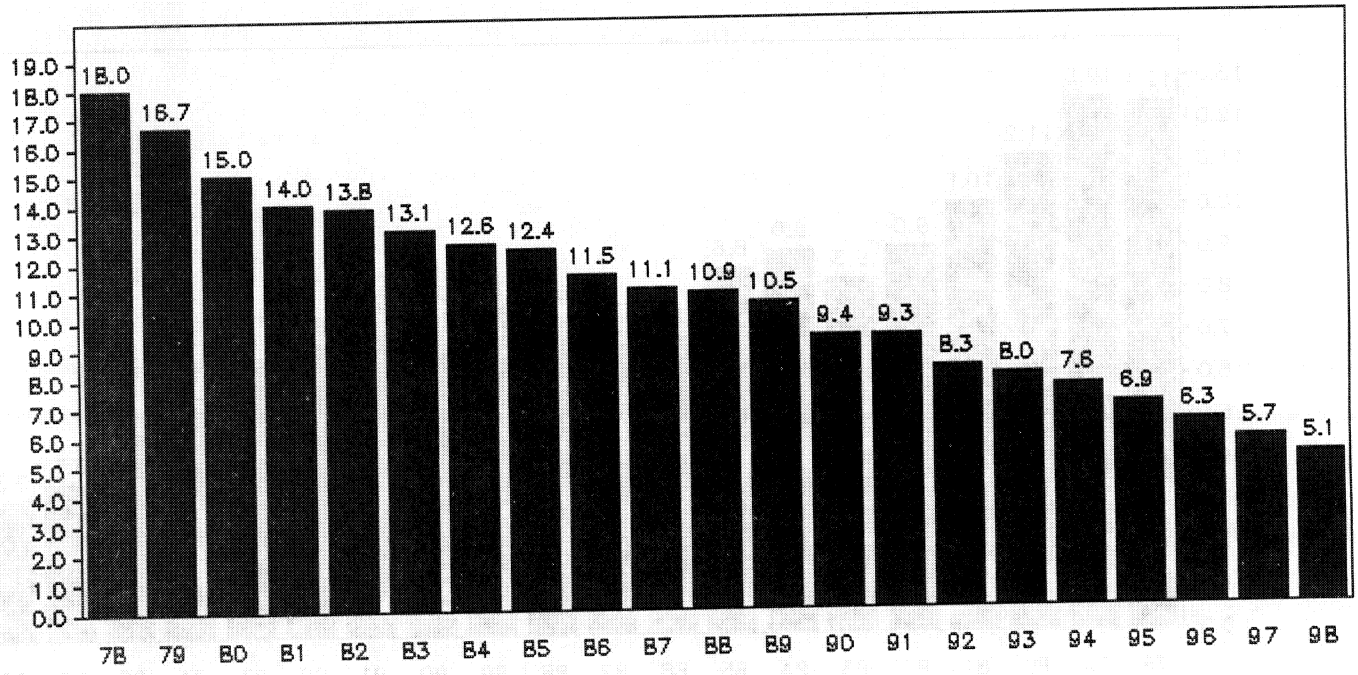
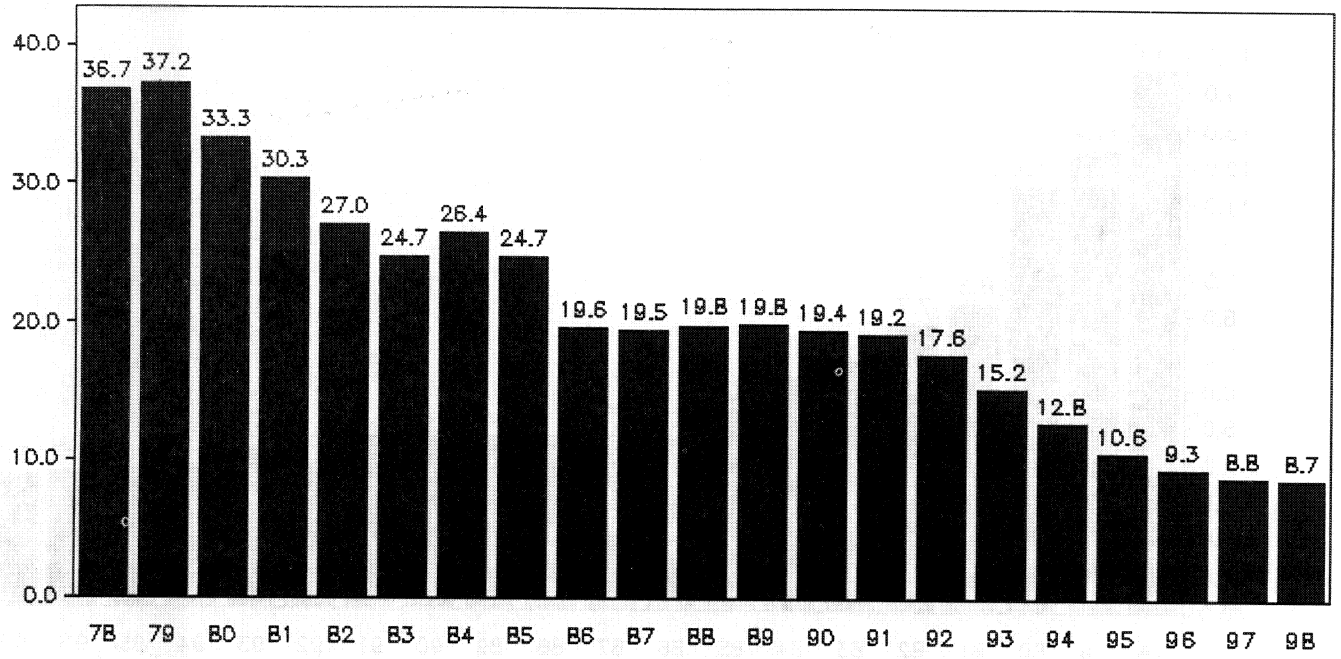


1–2 HIGHWAY–RAIL INCIDENT RATE



1–3 OTHER INCIDENT RATE



1–4 EMPLOYEE CASUALTY RATE

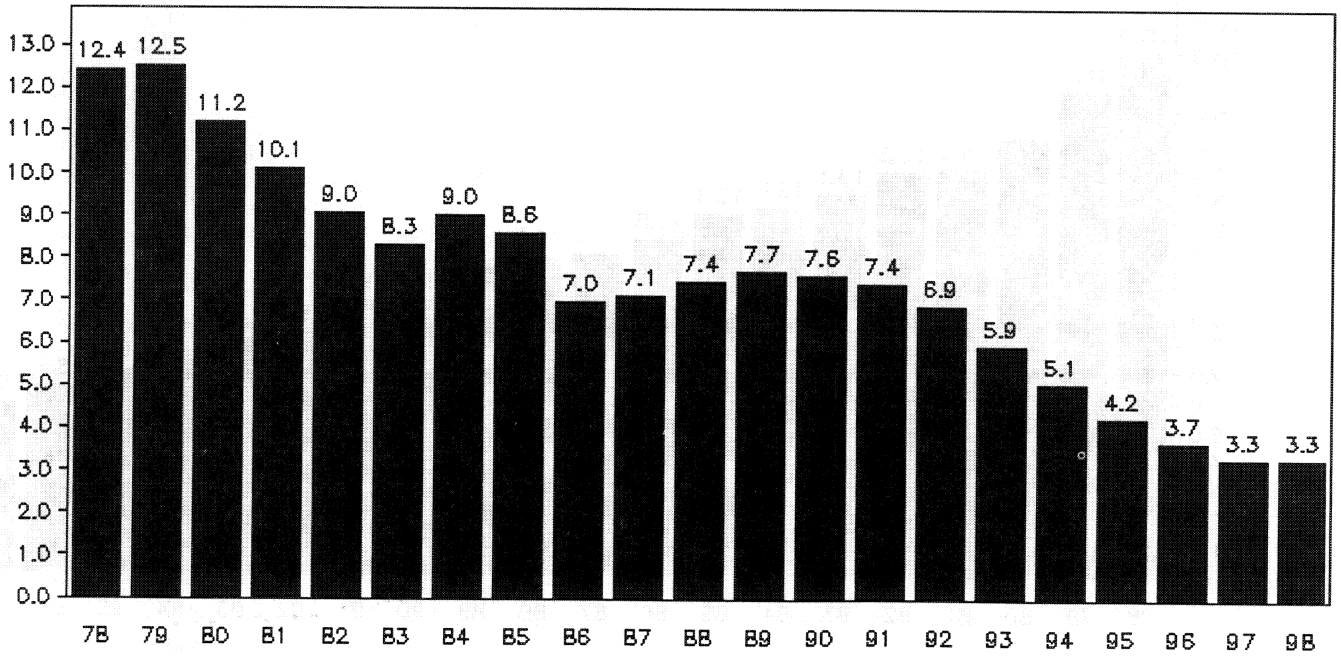


TABLE 1-1 ACCIDENT/INCIDENT SUMMARY

Category	1993	1994	1995	1996	1997	1998	% chg from 1997	% chg from 1993
1- Railroads reporting	668	688	679	704	688	671	-2.5	0.4
2-								
3- Total deaths	1,279	1,226	1,146	1,039	1,063	1,008	-5.2	-21.2
4- Employee on duty	47	31	34	33	37	27	-27.0	-42.6
5- Passengers on trains	58	5	0	12	6	4	-33.3	-93.1
6- Trespassers, all	675	682	660	620	646	644	-0.3	-4.6
7- Trespassers, not at HRC	523	529	494	471	533	536	0.6	2.5
8-								
9- Total nonfatal cases	19,121	16,812	14,440	12,558	11,767	11,459	-2.6	-40.1
10- Employee on duty	15,363	13,080	10,777	9,199	8,295	8,398	1.2	-45.3
11- Passengers on trains	559	497	573	513	601	535	-11.0	-4.3
12- Trespassers, all	733	764	700	750	728	677	-7.0	-7.6
13- Trespassers, not at HRC	509	452	461	474	516	513	-0.6	0.8
14-								
15- Railroad Employees								
16- Days absent from work	601,718	492,404	344,035	305,918	244,383	325,127	33.0	-46.0
17- Average days absent	39	38	32	33	29	39	34.5	0.0
18- Days restricted at work	64,354	57,343	44,343	45,634	52,099	63,986	22.8	-0.6
19-								
20- Train accidents(includes HRC)	2,785	2,669	2,619	2,584	2,560	2,745	7.2	-1.4
21- Reportable damage (000)	190,905	180,551	199,347	221,127	225,723	248,292	10.0	30.1
22- Number of hazmat releases	29	36	27	34	31	43	38.7	48.3
23-								
24- Train accidents without HRC	2,611	2,504	2,459	2,443	2,397	2,575	7.4	-1.4
25- Number that were fatal	10	7	11	10	13	4	-69.2	-60.0
26-								
27- Types Collisions	205	240	235	205	202	168	-16.8	-18.0
28- Derailments	1,930	1,825	1,742	1,816	1,741	1,757	0.9	-9.0
29- Other types	476	439	482	422	454	650	43.2	36.6
30- Causes Human factor	865	911	944	783	855	971	13.6	12.3
31- Equipment defects	360	293	279	318	271	307	13.3	-14.7
32- Track/signal defects	1,017	947	883	954	918	938	2.2	-7.8
33- Other causes	369	353	353	388	353	359	1.7	-2.7
34- Track Main	955	914	912	941	867	934	7.7	-2.2
35- Yard	1,383	1,339	1,279	1,249	1,223	1,306	6.8	-5.6
36-								
37- Total highway-rail incidents	4,892	4,979	4,633	4,257	3,865	3,508	-9.2	-28.3
38- Number that were fatal	526	512	456	413	376	363	-3.5	-31.0
39- Deaths	626	615	579	488	461	431	-6.5	-31.2
40- Nonfatal cases	1,837	1,961	1,894	1,610	1,540	1,303	-15.4	-29.1
41- HRC motor vehicle incidents	4,661	4,746	4,416	4,054	3,749	3,375	-10.0	-27.6
42- Deaths	554	542	508	415	419	369	-11.9	-33.4
43- Nonfatal cases	1,760	1,885	1,825	1,545	1,494	1,257	-15.9	-28.6
44-								
45- Other incidents	17,240	14,990	12,503	10,992	10,437	10,420	-0.2	-39.6
46- Number that were fatal	570	585	544	517	568	500	-12.0	-12.3
47-								
48- Hours worked by EOD (000)	519,673	518,634	510,260	504,599	503,918	514,870	2.2	-0.9
49- Train miles operated (000)	613,974	655,083	669,823	670,923	676,716	682,895	0.9	11.2
50- Revenue ton miles (billions)	1,109	1,201	1,306	1,356	1,349	1,377	2.1	24.1
51- Passengers transported (000)	371,610	393,600	385,825	397,394	408,619	439,958	7.7	18.4
52- Passenger miles (millions)	13,777	14,046	13,719	13,587	14,134	14,596	3.3	5.9
53- Public HRC crossings	168,116	166,035	163,917	162,426	160,395	158,560	-1.1	-5.7

TABLE 1-2 ACCIDENT/INCIDENT RATE SUMMARY

Category	1993	1994	1995	1996	1997	1998	% chg from 1996	% chg from 1998
1- Overall Accident/Incident Rate	21.83	19.15	16.60	15.05	14.14	13.78	-2.5	-36.9
2-								
3- Train Accidents, excludes HRC	4.25	3.82	3.67	3.64	3.54	3.77	6.5	-11.3
4- Yard Track Rate	15.87	14.91	14.23	14.22	14.41	15.60	8.3	-1.7
5- Other Track Rate	2.33	2.06	2.03	2.05	1.98	2.12	7.1	-9.0
6-								
7- Highway-Rail Incident Rate	7.97	7.60	6.92	6.34	5.71	5.14	-10.0	-35.5
8-								
9- All Other Incidents Rate	15.21	12.77	10.59	9.35	8.84	8.70	-1.6	-42.8
10-								
11- RR Employee on Duty Rate	5.93	5.06	4.24	3.66	3.31	3.27	-1.2	-44.9
12-								
13- Trespasser Rate	1.68	1.50	1.43	1.41	1.55	1.54	-0.6	-8.3
14-								
15- Passenger on Trains Rate	4.48	3.57	4.18	3.86	4.29	3.69	-14.0	-17.6
16-								
17- Passengers in Train Acc Rate	1.26	0.51	0.65	0.91	0.37	0.08	-78.4	-93.7

Overall accident/incident rate (line 1) is the total number of reportable incidents (train accidents, highway-rail, and other incidents) times one million divided by the sum of train miles operated and employee hours worked.

Train accident and highway-rail incident rates (lines 3 and 7) are the number of events per one million train miles operated.

The yard accident rate (line 4) is the number of accidents occurring on yard track per one million yard switching train miles operated.

The other track rate (line 5) is the number of accidents that did not occur on yard track per one million train miles, excluding yard switching train miles.

The employee on duty rate (line 11) is the total number of railroad employee casualties times 200,000 divided by the number of hours worked by employees.

Other incidents rate (line 9) is the number of other incidents times one million divided by the sum of train miles operated and employee hours worked.

The trespasser rate (line 13) is the total number of trespasser casualties, excluding those trespassers Fatal or injured in highway-rail incidents, per one million train miles operated.

The passenger on train rate (line 15) is the total number of passenger casualties in all accidents/incidents per 100,000,000 passenger miles. A passenger mile is the movement of one passenger for a distance of one mile.

The passenger in train accident rate (line 17) is the total number of passenger casualties in train accidents per 100,000,000 passenger miles.

TABLE 1-3 SUMMARY BY TYPE INCIDENT AND TYPE PERSON

Train Accidents Excluding Highway-Rail Crossing (HRC) Incidents

	Fatal						Nonfatal Conditions					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
A - Worker on duty(rr empl)	13	8	10	14	11	3	157	144	189	158	113	112
B - Employee not on duty	2	-	1	-	-	-	13	26	9	1	12	-
C - Passenger on train	49	2	-	9	1	-	124	70	89	115	51	11
D - Nontrespasser	-	2	-	-	-	-	11	18	6	1	-	-
E - Trespasser	3	-	3	2	4	1	3	-	-	-	-	4
F - Worker on duty(contractor)	-	-	-	-	-	-	-	4	1	6	2	2
J - Nontrespasser, off rr prop	-	-	-	-	1	-	-	-	-	-	5	-
--Total...	67	12	14	25	17	4	308	262	294	281	183	129

Highway-Rail Crossing (HRC) Incidents

	Fatal						Nonfatal Conditions					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
A - Worker on duty(rr empl)	3	1	2	1	-	4	143	125	123	79	111	122
B - Employee not on duty	-	-	-	-	-	-	1	1	4	2	3	3
C - Passenger on train	-	-	-	-	-	2	44	84	30	24	43	19
D - Nontrespasser	471	461	411	338	348	317	1,424	1,438	1,497	1,229	1,154	985
E - Trespasser	152	153	166	149	113	108	224	312	239	276	212	164
F - Worker on duty(contractor)	-	-	-	-	-	-	1	1	1	-	-	1
G - Contractor(other)	-	-	-	-	-	-	-	-	-	-	1	-
I - Volunteer(other)	-	-	-	-	-	-	-	-	-	-	-	1
J - Nontrespasser, off rr prop	-	-	-	-	-	-	-	-	-	-	16	8
--Total...	626	615	579	488	461	431	1,837	1,961	1,894	1,610	1,540	1,303

Other Incidents, Excluding HRC

	Fatal						Nonfatal Conditions					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
A - Worker on duty(rr empl)	31	22	22	18	26	20	15,063	12,811	10,465	8,962	8,071	8,164
B - Employee not on duty	2	-	1	-	-	2	334	279	239	225	248	216
C - Passenger on train	9	3	-	3	5	2	391	343	454	374	507	505
D - Nontrespasser	18	42	32	27	14	7	421	457	366	430	363	216
E - Trespasser	520	529	491	469	529	535	506	452	461	474	516	509
F - Worker on duty(contractor)	6	3	7	9	6	2	261	247	267	202	211	234
G - Contractor(other)	-	-	-	-	5	3	-	-	-	-	120	143
H - Worker on duty(volunteer)	-	-	-	-	-	-	-	-	-	-	3	11
I - Volunteer(other)	-	-	-	-	-	-	-	-	-	-	3	2
J - Nontrespasser, off rr prop	-	-	-	-	-	2	-	-	-	-	2	27
--Total...	586	599	553	526	585	573	16,976	14,589	12,252	10,667	10,044	10,027

TABLE 1-3 SUMMARY BY TYPE INCIDENT AND TYPE PERSON

GRAND TOTAL

	Fatal						Nonfatal Conditions					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
A - Worker on duty(rr empl)	47	31	34	33	37	27	15,363	13,080	10,777	9,199	8,295	8,398
B - Employee not on duty	4	-	2	-	-	2	348	306	252	228	263	219
C - Passenger on train	58	5	-	12	6	4	559	497	573	513	601	535
D - Nontrespasser	489	505	443	365	362	324	1,856	1,913	1,869	1,660	1,517	1,201
E - Trespasser	675	682	660	620	646	644	733	764	700	750	728	677
F - Worker on duty(contractor)	6	3	7	9	6	2	262	252	269	208	213	237
G - Contractor(other)	-	-	-	-	5	3	-	-	-	-	121	143
H - Worker on duty(volunteer)	-	-	-	-	-	-	-	-	-	-	3	11
I - Volunteer(other)	-	-	-	-	-	-	-	-	-	-	3	3
J - Nontrespasser, off rr prop	-	-	-	-	1	2	-	-	-	-	23	35
--Total...	1,279	1,226	1,146	1,039	1,063	1,008	19,121	16,812	14,440	12,558	11,767	11,459

TABLE 1-4 TOTAL CASUALTIES BY RAILROAD

	Fatal						Nonfatal					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Alton & Southern RR	-	-	-	-	-	-	12	18	19	14	17	17
Alaska RR Corp.	-	3	1	1	2	1	49	38	47	52	72	59
Amtrak (Natl RR Passenger Corp.)	214	127	124	101	117	120	1,802	1,644	1,516	1,209	1,328	1,180
Bangor & Aroostook RR	-	-	-	-	-	1	50	32	35	37	37	47
Bessemer & Lake Erie RR Co.	-	2	-	-	1	-	5	7	16	12	15	21
Burlington Northern Santa Fe	159	198	215	174	180	209	3,196	2,041	1,678	1,208	1,174	1,412
Belt Rwy Co. Of Chicago	-	-	-	1	1	2	24	56	15	13	16	15
Consolidated Rail Corp.	97	95	79	53	59	37	1,529	1,430	972	813	627	507
CSX Transportation	114	127	139	101	112	125	1,092	1,063	834	847	894	953
Delaware & Hudson Rwy Co.	7	7	4	1	5	-	40	44	47	46	39	30
Dakota, Minnesota & Eastern RR	-	-	1	1	1	-	51	27	34	29	23	25
Duluth, Missabe & Iron Range Rwy	2	2	-	-	-	-	86	45	47	66	53	43
Duluth, Winnipeg & Pacific Rwy	-	2	-	-	3	2	8	8	7	10	8	6
Elgin, Joliet & Eastern Rwy Co.	3	1	-	-	-	-	34	41	21	48	52	48
Florida East Coast Rwy Co.	20	13	18	23	19	10	52	84	65	73	68	62
Other Railroads	37	28	21	40	24	15	1,495	1,611	1,575	1,377	1,283	1,210
Guilford Rail System	2	1	2	-	4	2	52	30	29	21	19	26
Grand Trunk Western RR Inc.	16	16	6	11	10	4	491	278	254	183	164	162
Gateway Western Rwy	1	1	2	3	1	2	8	13	15	21	11	13
Illinois Central RR Co.	19	14	8	19	17	18	237	256	211	208	183	165
Indiana Harbor Belt RR Co.	-	2	3	1	2	-	68	80	85	36	64	57
I & M Rail Link, LLC	-	-	-	-	2	2	-	-	-	-	25	65
Kansas City Southern Rwy Co.	16	12	19	26	27	29	152	187	184	166	176	198
Long Island Rail Road	22	10	17	9	18	10	808	880	743	745	706	569
Massachusetts Bay Transit Auth.	-	-	-	6	11	2	-	-	-	119	74	94
Metro North Commuter RR Co.	7	12	15	3	7	4	626	630	575	599	481	389
Montana Rail Link	9	4	2	5	5	-	73	52	64	74	49	18
Northern IN Commuter Trans. Dist	9	2	1	1	2	3	101	60	57	36	37	34
Northeast IL Reg Commuter Rail	10	9	9	7	7	6	160	278	234	265	189	206
New Jersey Transit Rail	12	20	31	20	23	24	387	418	203	188	118	94
Norfolk Southern Corp.	166	151	123	108	108	112	947	824	721	657	534	563
Paducah & Louisville Rwy Co.	-	-	1	1	-	1	37	29	28	22	18	8
Port Authority Trans Hudson	2	-	3	-	-	1	312	216	218	188	188	164
Penisula Commuter(San Mateo Cnty	-	-	-	3	6	3	-	-	-	14	16	26
Port Terminal RR Association	1	1	1	-	-	1	23	15	13	10	9	8
Southern CA Regional Rail Auth.	6	4	6	5	8	6	3	-	10	4	29	16
Southeastern PA Trans. Authority	9	5	2	5	7	3	261	328	299	290	376	374
Soo Line RR Co.	17	11	9	11	7	6	545	497	480	411	258	200
Texas Mexican RR Co.	-	2	1	-	-	1	42	61	8	2	10	14
Terminal RR Assn Of St. Louis	-	1	-	-	-	-	10	4	11	19	10	2
Union Pacific RR Co.	294	331	272	294	258	240	4,002	3,228	2,806	2,207	2,101	2,192
Union RR Co. (Pittsburgh)	-	-	-	-	-	-	25	26	19	28	15	30
Wisconsin Central Ltd.	7	10	11	4	7	6	200	202	223	169	182	129
Wheeling & Lake Erie Rwy Co.	1	2	-	1	2	-	26	31	22	22	19	8
Total	1,279	1,226	1,146	1,039	1,063	1,008	19,121	16,812	14,440	12,558	11,767	11,459

TABLE 1-5 TOTAL CASUALTIES BY STATE

	Fatal						Nonfatal						6 Year Total	
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998	Ftl	Nonf
AL	81	17	24	25	30	25	339	231	203	191	176	156	202	1,296
AK	-	3	1	2	2	1	65	50	64	72	97	83	9	431
AZ	10	19	17	22	24	19	179	164	164	107	169	121	111	904
AR	30	26	22	26	11	36	379	358	307	233	243	261	151	1,781
CA	143	119	106	96	109	114	1,191	946	793	731	724	795	687	5,180
CO	12	21	13	12	9	12	345	245	229	184	159	134	79	1,296
CT	9	6	7	3	8	4	181	204	156	159	136	130	37	966
DE	3	2	-	1	3	1	83	74	89	62	70	42	10	420
DC	-	1	1	-	-	1	98	109	93	80	82	75	3	537
FL	50	50	48	41	37	30	336	337	327	248	282	276	256	1,806
GA	33	26	29	27	24	31	303	259	228	189	199	221	170	1,399
ID	8	15	10	7	7	9	174	100	154	113	105	83	56	729
IL	92	97	91	76	73	70	1,283	1,444	1,303	1,059	926	942	499	6,957
IN	55	40	42	40	36	31	510	536	420	361	378	334	244	2,539
IA	16	23	13	14	15	6	388	395	319	254	227	198	87	1,781
KS	9	22	17	19	22	16	451	288	246	205	182	220	105	1,592
KY	15	20	21	13	22	11	213	176	179	175	140	173	102	1,056
LA	42	30	36	37	35	33	321	325	291	248	288	267	213	1,740
ME	-	-	-	-	1	2	87	56	56	53	71	77	3	400
MD	8	8	9	18	5	4	158	140	129	176	72	94	52	769
MA	12	14	12	12	19	5	224	199	221	215	153	155	74	1,167
MI	25	34	17	28	24	16	667	471	398	377	392	317	144	2,622
MN	24	22	24	21	15	22	698	508	436	399	307	314	128	2,662
MS	15	31	32	17	22	28	145	170	121	132	136	127	145	831
MO	30	25	31	30	24	34	488	378	312	241	212	236	174	1,867
MT	16	6	9	8	8	7	215	139	127	145	113	79	54	818
NE	17	28	12	14	16	15	554	386	319	220	197	263	102	1,939
NV	3	3	9	4	3	6	73	49	115	32	30	34	28	333
NH	-	-	-	1	-	1	14	7	15	10	5	14	2	65
NJ	24	26	35	25	29	31	874	774	533	481	407	325	170	3,394
NM	7	13	15	14	17	12	128	98	90	84	67	105	78	572
NY	62	47	48	27	41	29	1,865	2,001	1,696	1,621	1,453	1,210	254	9,846
NC	37	47	30	27	26	40	179	206	122	180	146	145	207	978
ND	8	5	9	5	2	8	167	117	98	101	81	68	37	632
OH	64	54	49	34	45	30	662	596	435	383	365	368	276	2,809
OK	23	21	18	28	30	19	235	198	154	130	134	135	139	986
OR	12	10	20	7	18	22	314	248	194	185	136	157	89	1,234
PA	35	35	30	19	30	17	1,066	1,068	854	756	778	743	166	5,265
RI	1	-	-	1	4	2	15	35	16	14	12	11	8	103
SC	39	25	16	18	21	23	160	138	141	99	104	98	142	740
SD	1	1	5	2	1	-	67	56	50	41	37	43	10	294
TN	18	18	22	20	20	25	206	192	192	130	135	141	123	996
TX	109	117	114	124	99	97	1,298	1,073	895	731	768	795	660	5,560
UT	11	20	10	14	6	6	173	105	107	92	87	84	67	648
VT	1	-	1	1	-	1	32	28	18	26	11	25	4	140
VA	21	24	16	18	12	13	265	214	187	143	139	160	104	1,108
WA	24	19	25	19	25	21	477	314	277	231	210	211	133	1,720
WV	9	9	7	8	12	7	159	107	87	78	64	83	52	578
WI	13	19	20	9	19	11	435	396	388	300	283	237	91	2,039
WY	2	8	3	5	2	4	182	104	92	81	79	94	24	632
Tot	1,279	1,226	1,146	1,039	1,063	1,008	19,121	16,812	14,440	12,558	11,767	11,459	6,761	86,157

TABLE 1-6 TOTAL EMPLOYEE ON DUTY CASES BY RAILROAD

	1993		1994		1995		1996		1997		1998	
	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate
Alton & Southern RR	12	3.45	14	4.03	19	5.67	13	3.92	17	5.03	16	4.86
Alaska RR Corp.	43	7.50	37	7.24	36	7.58	45	8.66	63	11.45	54	9.28
Amtrak (Natl RR Passenger Corp.)	1,302	5.37	1,368	5.58	1,283	5.71	987	4.64	901	4.33	842	3.87
Bangor & Aroostook RR	48	14.76	30	9.04	33	10.02	36	11.16	36	11.90	48	14.56
Bessemer & Lake Erie RR Co.	5	1.57	8	2.48	16	4.95	12	3.70	8	2.14	16	3.54
Burlington Northern Santa Fe	2,815	6.59	1,626	3.69	1,185	2.68	879	2.01	789	1.74	1,014	2.20
Belt Rwy Co. Of Chicago	21	3.83	55	9.18	14	2.23	14	2.08	14	2.02	17	2.58
Consolidated Rail Corp.	1,306	5.39	1,239	5.13	836	3.74	671	3.13	518	2.58	419	2.05
CSX Transportation	792	2.74	706	2.42	503	1.73	582	2.05	608	2.15	718	2.45
Delaware & Hudson Rwy Co.	26	3.40	34	4.55	40	5.65	43	7.14	31	5.27	28	4.29
Dakota, Minnesota & Eastern RR	37	14.03	19	7.00	25	9.07	22	6.17	21	5.83	23	6.93
Duluth, Missabe & Iron Range Rwy	60	8.80	41	6.61	47	6.91	65	9.32	50	6.93	42	5.88
Duluth, Winnipeg & Pacific Rwy	7	3.82	8	4.58	5	2.25	8	3.73	8	3.73	5	2.36
Elgin, Joliet & Eastern Rwy Co.	31	3.91	36	4.82	18	2.36	45	6.04	47	5.97	45	5.83
Florida East Coast Rwy Co.	33	3.39	37	3.77	39	4.11	45	4.94	39	4.43	29	3.20
Other Railroads	1,272	10.74	1,376	11.36	1,213	10.12	1,127	9.23	1,049	8.45	1,003	8.04
Guilford Rail System	50	4.16	28	2.32	27	2.32	18	1.86	11	1.16	21	2.25
Grand Trunk Western RR Inc.	462	16.13	247	8.54	220	7.94	152	6.77	131	6.35	153	7.00
Gateway Western Rwy	7	3.42	11	4.60	16	5.69	17	6.11	5	2.01	12	4.92
Illinois Central RR Co.	163	4.21	171	4.42	139	3.45	136	3.53	111	2.91	105	2.80
Indiana Harbor Belt RR Co.	54	6.83	66	8.02	71	8.08	27	2.98	53	6.14	53	6.05
I & M Rail Link, LLC	-	-	-	-	-	-	-	-	17	3.15	40	5.40
Kansas City Southern Rwy Co.	68	2.52	100	3.71	84	3.01	89	3.33	79	3.01	95	3.49
Long Island Rail Road	686	11.29	693	11.27	584	10.12	508	8.90	451	7.72	408	6.88
Massachusetts Bay Transit Auth.	-	-	-	-	-	-	96	6.36	69	4.16	85	4.73
Metro North Commuter RR Co.	563	10.51	574	10.66	525	9.79	533	10.19	433	8.27	319	6.03
Montana Rail Link	69	6.89	48	5.17	58	5.71	67	5.97	40	3.46	12	1.15
Northern IN Commuter Trans. Dist	67	22.25	54	17.46	51	16.34	30	9.06	29	8.70	28	8.17
Northeast IL Reg Commuter Rail	95	4.19	116	4.91	123	5.14	134	5.59	110	4.59	127	5.12
New Jersey Transit Rail	220	5.99	239	6.51	86	2.35	88	2.29	89	2.44	85	2.33
Norfolk Southern Corp.	498	2.06	432	1.83	362	1.54	294	1.26	220	0.94	270	1.07
Paducah & Louisville Rwy Co.	33	10.24	26	8.22	25	8.37	20	7.11	11	4.07	6	2.07
Port Authority Trans Hudson	222	16.96	138	12.85	131	12.65	113	11.04	113	11.45	101	10.45
Penisula Commuter(San Mateo Cnty	-	-	-	-	-	-	14	3.96	15	4.33	18	5.01
Port Terminal RR Association	20	5.09	15	3.73	11	3.14	6	1.88	5	1.55	6	1.78
Southern CA Regional Rail Auth.	-	-	-	-	6	3.40	3	1.35	12	3.66	8	2.71
Southeastern PA Trans. Authority	207	12.37	243	14.67	231	13.21	198	11.30	193	11.68	181	10.27
Soo Line RR Co.	495	11.08	451	10.79	434	10.09	369	9.06	229	6.53	167	4.96
Texas Mexican RR Co.	40	16.45	59	25.63	8	4.67	1	0.58	5	2.10	4	1.35
Terminal RR Assn Of St. Louis	10	3.34	5	1.72	10	3.65	15	5.37	4	1.47	1	0.36
Union Pacific RR Co.	3,405	6.03	2,572	4.71	2,099	3.86	1,561	2.91	1,545	2.89	1,680	3.16
Union RR Co. (Pittsburgh)	24	6.67	26	7.10	19	5.25	28	7.67	15	4.25	28	7.79
Wisconsin Central Ltd.	132	7.72	153	8.40	168	8.53	110	5.31	122	5.50	86	3.81
Wheeling & Lake Erie Rwy Co.	10	2.93	10	2.77	11	2.81	11	2.94	16	4.45	7	1.63

TABLE 1-7 TRAIN ACCIDENTS BY RAILROAD, EXCLUDING HRC

	1993		1994		1995		1996		1997		1998	
	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate	Cnt	Rate
Alton & Southern RR	11	14.91	14	18.81	9	11.94	6	8.18	4	5.55	4	5.37
Alaska RR Corp.	7	6.82	2	2.33	4	4.94	5	5.80	7	6.47	5	4.58
Amtrak (Natl RR Passenger Corp.)	93	2.18	79	1.83	68	1.78	88	2.60	84	2.27	89	2.51
Bangor & Aroostook RR	6	15.09	2	4.79	2	4.34	3	3.51	-	-	3	2.48
Bessemer & Lake Erie RR Co.	-	-	1	5.07	1	5.66	1	4.09	1	4.18	2	6.71
Burlington Northern Santa Fe	607	4.53	515	3.64	580	3.98	454	3.11	439	2.84	435	2.67
Belt Rwy Co. Of Chicago	57	158.6	67	179.3	49	125.8	59	126.7	39	77.48	29	63.18
Consolidated Rail Corp.	179	3.92	169	3.54	146	3.24	175	3.83	187	4.12	236	5.07
CSX Transportation	161	2.29	133	1.65	134	1.61	163	1.95	257	3.07	310	3.71
Delaware & Hudson Rwy Co.	8	3.85	10	4.87	12	6.09	8	4.59	6	2.92	4	1.92
Dakota, Minnesota & Eastern RR	30	46.77	34	53.05	27	41.41	26	36.00	27	38.39	16	23.79
Duluth, Missabe & Iron Range Rwy	3	4.82	6	8.29	8	9.12	7	9.24	10	11.72	10	12.87
Duluth, Winnipeg & Pacific Rwy	1	1.74	-	-	5	7.53	4	6.12	1	1.38	4	5.77
Elgin, Joliet & Eastern Rwy Co.	4	7.78	10	17.53	12	20.29	15	24.41	11	18.34	14	20.84
Florida East Coast Rwy Co.	8	2.58	8	2.18	17	5.29	12	3.64	12	3.55	20	5.87
Other Railroads	241	12.94	259	13.22	230	11.24	228	10.63	268	10.70	295	11.81
Guilford Rail System	11	10.17	6	5.59	2	1.87	2	1.88	3	2.74	5	4.37
Grand Trunk Western RR Inc.	47	9.04	53	10.29	46	8.95	32	5.85	25	4.42	21	3.91
Gateway Western Rwy	6	10.65	10	11.37	7	6.78	6	5.98	4	4.41	11	13.13
Illinois Central RR Co.	82	10.78	88	9.20	74	7.79	82	9.14	58	6.37	73	7.82
Indiana Harbor Belt RR Co.	25	20.78	19	14.76	27	18.39	9	5.87	25	16.01	27	17.27
I & M Rail Link, LLC	-	-	-	-	-	-	-	-	19	13.91	34	16.26
Kansas City Southern Rwy Co.	58	8.12	92	13.17	109	13.54	75	9.23	71	8.59	66	7.62
Long Island Rail Road	22	2.69	35	4.30	30	3.66	39	4.77	22	2.70	19	2.33
Massachusetts Bay Transit Auth.	-	-	-	-	-	-	-	-	1	0.37	-	-
Metro North Commuter RR Co.	29	3.93	33	4.48	23	2.94	23	3.09	20	2.62	33	4.23
Montana Rail Link	35	9.11	22	6.24	30	7.20	34	9.05	39	9.59	12	3.12
Northern IN Commuter Trans. Dist	2	2.41	4	4.85	1	1.20	-	-	2	2.40	6	7.17
Northeast IL Reg Commuter Rail	-	-	2	0.62	6	1.67	6	1.77	6	1.72	1	0.29
New Jersey Transit Rail	31	4.17	14	1.88	6	0.80	12	1.54	16	1.99	12	1.47
Norfolk Southern Corp.	99	1.84	100	1.70	94	1.51	151	2.37	170	2.64	149	2.19
Paducah & Louisville Rwy Co.	3	4.49	-	-	3	4.59	7	11.68	7	11.60	4	6.48
Port Authority Trans Hudson	4	2.46	2	1.19	5	2.53	-	-	-	-	-	-
Penisula Commuter(San Mateo Cnty	-	-	-	-	-	-	-	-	-	-	-	-
Port Terminal RR Association	18	17.61	17	16.06	10	9.51	6	5.31	11	8.84	12	9.61
Southern CA Regional Rail Auth.	5	11.21	2	2.19	3	2.84	4	3.20	3	2.21	4	2.72
Southeastern PA Trans. Authority	10	2.25	4	0.81	4	0.79	9	1.78	16	3.12	16	3.08
Soo Line RR Co.	91	8.62	92	9.88	95	8.71	106	10.74	54	6.44	42	5.05
Texas Mexican RR Co.	4	14.87	2	8.88	1	4.96	2	7.03	3	5.13	5	4.44
Terminal RR Assn Of St. Louis	19	38.60	17	33.93	15	29.67	14	26.96	18	33.12	10	17.63
Union Pacific RR Co.	771	4.78	716	4.13	694	3.88	719	4.00	581	3.51	727	4.62
Union RR Co. (Pittsburgh)	3	19.79	3	19.49	4	26.95	9	58.90	1	6.71	1	6.01
Wisconsin Central Ltd.	44	12.15	60	14.60	67	13.79	50	9.92	36	7.13	23	4.38
Wheeling & Lake Erie Rwy Co.	8	11.42	4	6.80	8	14.55	1	1.79	7	14.93	-	-

TABLE 1-8 TRAIN ACCIDENTS BY STATE, EXCLUDING HRC

	1993		1994		1995		1996		1997		1998		6 Year Total	
	Cnt	%	Cnt	%	Cnt	%	Cnt	%	Cnt	%	Cnt	%	Cnt	%
AL	21	0.8	22	0.9	16	0.7	34	1.4	37	1.5	48	1.9	178	1.2
AK	7	0.3	2	0.1	4	0.2	5	0.2	7	0.3	5	0.2	30	0.2
AZ	24	0.9	22	0.9	37	1.5	22	0.9	21	0.9	18	0.7	144	1.0
AR	58	2.2	64	2.6	56	2.3	56	2.3	50	2.1	61	2.4	345	2.3
CA	125	4.8	129	5.2	112	4.6	127	5.2	105	4.4	135	5.2	733	4.9
CO	48	1.8	41	1.6	49	2.0	52	2.1	39	1.6	54	2.1	283	1.9
CT	22	0.8	33	1.3	16	0.7	13	0.5	12	0.5	24	0.9	120	0.8
DE	7	0.3	6	0.2	2	0.1	3	0.1	5	0.2	6	0.2	29	0.2
DC	6	0.2	9	0.4	4	0.2	8	0.3	5	0.2	7	0.3	39	0.3
FL	26	1.0	22	0.9	42	1.7	38	1.6	39	1.6	58	2.3	225	1.5
GA	33	1.3	35	1.4	28	1.1	43	1.8	64	2.7	64	2.5	267	1.8
ID	49	1.9	37	1.5	32	1.3	31	1.3	25	1.0	31	1.2	205	1.4
IL	287	11.0	266	10.6	248	10.1	258	10.6	251	10.5	189	7.3	1,499	10.0
IN	50	1.9	55	2.2	46	1.9	57	2.3	68	2.8	87	3.4	363	2.4
IA	66	2.5	68	2.7	83	3.4	79	3.2	89	3.7	94	3.7	479	3.2
KS	83	3.2	90	3.6	74	3.0	71	2.9	59	2.5	75	2.9	452	3.0
KY	27	1.0	27	1.1	22	0.9	39	1.6	56	2.3	58	2.3	229	1.5
LA	77	2.9	63	2.5	61	2.5	56	2.3	61	2.5	71	2.8	389	2.6
ME	12	0.5	5	0.2	4	0.2	6	0.2	4	0.2	10	0.4	41	0.3
MD	25	1.0	9	0.4	12	0.5	12	0.5	30	1.3	17	0.7	105	0.7
MA	16	0.6	11	0.4	12	0.5	10	0.4	11	0.5	12	0.5	72	0.5
MI	56	2.1	62	2.5	61	2.5	48	2.0	48	2.0	48	1.9	323	2.2
MN	101	3.9	97	3.9	92	3.7	92	3.8	65	2.7	60	2.3	507	3.4
MS	35	1.3	71	2.8	82	3.3	62	2.5	42	1.8	41	1.6	333	2.2
MO	80	3.1	79	3.2	79	3.2	77	3.2	46	1.9	57	2.2	418	2.8
MT	58	2.2	42	1.7	42	1.7	52	2.1	54	2.3	39	1.5	287	1.9
NE	88	3.4	88	3.5	96	3.9	79	3.2	77	3.2	82	3.2	510	3.4
NV	9	0.3	12	0.5	3	0.1	10	0.4	8	0.3	10	0.4	52	0.3
NH	2	0.1	3	0.1	2	0.1	-	-	-	-	2	0.1	9	0.1
NJ	41	1.6	31	1.2	20	0.8	18	0.7	28	1.2	27	1.0	165	1.1
NM	17	0.7	18	0.7	16	0.7	18	0.7	15	0.6	21	0.8	105	0.7
NY	103	3.9	92	3.7	105	4.3	113	4.6	96	4.0	102	4.0	611	4.1
NC	17	0.7	26	1.0	19	0.8	19	0.8	21	0.9	27	1.0	129	0.9
ND	34	1.3	38	1.5	34	1.4	33	1.4	28	1.2	28	1.1	195	1.3
OH	65	2.5	62	2.5	58	2.4	76	3.1	71	3.0	88	3.4	420	2.8
OK	60	2.3	44	1.8	50	2.0	37	1.5	32	1.3	52	2.0	275	1.8
OR	39	1.5	37	1.5	35	1.4	46	1.9	40	1.7	57	2.2	254	1.7
PA	85	3.3	108	4.3	86	3.5	88	3.6	102	4.3	115	4.5	584	3.9
RI	-	-	2	0.1	1	0.0	-	-	-	-	-	-	3	0.0
SC	19	0.7	8	0.3	18	0.7	17	0.7	22	0.9	24	0.9	108	0.7
SD	19	0.7	29	1.2	39	1.6	28	1.1	24	1.0	21	0.8	160	1.1
TN	57	2.2	50	2.0	44	1.8	42	1.7	63	2.6	56	2.2	312	2.1
TX	273	10.5	214	8.5	239	9.7	182	7.4	223	9.3	266	10.3	1,397	9.3
UT	42	1.6	34	1.4	19	0.8	35	1.4	21	0.9	38	1.5	189	1.3
VT	1	0.0	3	0.1	5	0.2	3	0.1	4	0.2	5	0.2	21	0.1
VA	30	1.1	29	1.2	31	1.3	54	2.2	46	1.9	44	1.7	234	1.6
WA	84	3.2	64	2.6	85	3.5	49	2.0	46	1.9	35	1.4	363	2.4
WV	13	0.5	16	0.6	19	0.8	28	1.1	23	1.0	25	1.0	124	0.8
WI	67	2.6	82	3.3	74	3.0	68	2.8	70	2.9	39	1.5	400	2.7
WY	47	1.8	47	1.9	45	1.8	49	2.0	44	1.8	42	1.6	274	1.8
Tot	2,611	100.0	2,504	100.0	2,459	100.0	2,443	100.0	2,397	100.0	2,575	100.0	14,989	100.0

TABLE 1-9 CONSISTS TRANSPORTING HAZMAT, BY RAILROAD

	1993			1994			1995			1996			1997			1998		
	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls
ALS	4	2	-	4	-	-	1	1	-	3	2	-	1	1	-	-	-	-
ARR	2	2	1	1	1	1	1	1	-	-	-	-	1	1	-	1	1	-
ATK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BAR	1	1	-	2	2	-	1	-	-	2	-	-	-	-	-	-	-	-
BLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BNSF	148	56	4	139	55	7	157	61	7	132	57	5	122	54	3	144	73	6
BRC	9	2	-	13	10	-	12	3	-	12	7	-	10	7	-	2	1	-
CR	31	19	2	21	19	2	29	27	4	25	25	1	32	26	3	37	33	5
CSX	47	23	6	29	19	2	31	21	3	47	28	5	62	33	4	99	43	9
DH	3	2	-	3	2	-	1	1	-	-	-	-	-	-	-	1	1	1
DME	1	1	-	1	1	-	-	-	-	1	-	-	-	-	-	1	1	-
DMIR	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-
DWP	-	-	-	-	-	-	3	3	-	2	1	-	1	1	-	-	-	-
EJE	1	-	-	1	1	-	2	2	-	4	3	-	2	-	-	3	-	-
FEC	1	1	-	2	-	-	1	-	-	2	-	-	4	1	-	1	-	-
GRP3	39	22	-	50	31	5	49	37	3	44	25	2	38	22	4	43	32	3
GRS	3	1	-	2	-	-	-	-	-	-	-	-	1	1	-	3	1	-
GTW	3	3	-	1	1	-	4	4	1	1	-	-	2	2	-	7	7	1
GWWR	1	1	-	2	2	1	1	1	-	5	4	-	1	1	1	4	1	-
IC	28	11	2	36	19	6	23	15	-	44	26	3	24	18	2	34	21	3
IHB	9	5	-	5	4	-	14	5	-	-	-	-	2	2	-	5	2	1
IMRL	-	-	-	-	-	-	-	-	-	-	-	-	8	3	-	11	2	1
KCS	12	7	1	12	11	1	9	2	-	2	1	1	12	4	2	9	3	1
LI	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
MBTA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MNCW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MRL	13	1	-	8	4	1	12	5	1	14	5	1	14	8	-	6	2	-
NICD	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
NIRC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NJTR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NS	21	13	2	17	8	2	18	6	1	27	17	4	39	23	4	29	7	2
PAL	1	1	-	-	-	-	1	1	-	5	4	-	4	3	1	3	3	-
PATH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCMZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PTRA	3	3	-	6	6	-	4	4	1	-	-	-	2	1	-	7	6	-
SCAX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SEPA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SOO	16	3	-	17	1	1	31	15	1	16	10	1	11	4	-	9	5	2
TM	1	-	-	-	-	-	-	-	-	2	-	-	2	1	1	2	2	-
TRRA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UP	175	84	11	168	66	7	161	82	5	154	67	10	135	59	6	163	70	8
URR	1	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-
WC	11	3	-	16	6	-	25	8	-	17	9	1	10	1	-	3	-	-
WE	1	1	-	-	-	-	4	2	-	-	-	-	-	-	-	-	-	-
Tot	586	268	29	558	271	36	596	308	27	562	292	34	540	277	31	628	317	43

Cnt = Number of Consists; Dmg = Damaged; Rls = Releases

TABLE 1-10 CONSISTS TRANSPORTING HAZMAT, BY STATE

	1993			1994			1995			1996			1997			1998		
	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls	Cnt	Dmg	Rls
AL	7	1	-	15	9	1	6	4	1	14	8	-	15	6	-	18	5	-
AK	2	2	1	1	1	1	1	1	-	-	-	-	1	1	-	1	1	-
AZ	8	3	-	9	5	2	16	13	1	14	9	2	10	6	2	10	8	-
AR	15	5	-	17	5	-	13	6	-	23	7	-	7	3	1	15	8	1
CA	32	13	-	46	22	4	30	18	1	35	19	4	24	10	-	35	18	1
CO	11	5	-	6	2	-	9	6	-	12	4	1	4	2	-	17	7	-
CT	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-
DE	2	2	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
DC	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FL	3	3	-	5	2	-	3	2	1	2	-	-	6	2	1	9	3	2
GA	9	7	2	7	4	1	10	3	-	8	4	1	12	5	-	11	3	-
ID	11	2	1	5	4	1	8	4	-	8	4	-	10	3	1	8	3	1
IL	76	30	2	45	25	2	72	24	2	69	35	2	52	31	3	46	28	5
IN	7	5	-	8	8	-	11	8	-	7	3	-	11	7	-	12	7	-
IA	8	3	-	6	3	1	21	9	-	14	9	2	23	11	1	15	5	1
KS	13	4	-	20	7	-	15	4	-	24	14	-	20	8	1	13	4	1
KY	8	6	1	7	4	-	3	1	-	16	10	1	18	13	1	15	8	-
LA	36	22	2	27	16	3	23	14	1	20	14	1	24	14	2	18	11	1
ME	4	2	-	3	3	-	1	-	-	3	-	-	2	2	-	3	2	-
MD	3	3	-	2	2	-	1	1	-	2	1	1	5	4	1	3	-	-
MA	3	2	-	3	-	-	2	2	-	-	-	-	3	1	1	2	-	-
MI	5	2	1	6	3	-	9	5	1	4	3	-	7	4	-	14	9	1
MN	17	3	-	20	5	1	16	11	-	11	6	1	11	3	-	17	7	-
MS	12	5	-	21	13	2	14	8	-	13	5	1	10	4	1	8	3	1
MO	15	4	1	13	6	1	21	9	3	13	6	-	12	9	-	13	5	1
MT	17	5	1	14	5	1	14	5	1	20	8	1	18	10	-	14	5	-
NE	17	7	1	16	8	1	25	14	1	12	3	1	8	1	-	21	10	1
NV	5	2	-	5	-	-	-	-	-	3	2	-	1	-	-	7	3	1
NH	1	1	-	1	-	-	2	1	-	1	-	-	-	-	-	1	1	-
NJ	-	-	-	6	5	-	3	3	-	1	1	-	5	2	-	6	6	2
NM	4	-	-	8	2	1	10	2	1	9	5	-	7	3	-	11	3	-
NY	5	4	-	7	6	-	7	5	2	7	7	1	5	5	2	7	6	1
NC	2	1	-	6	2	-	4	2	-	9	8	2	6	3	1	7	4	-
ND	5	3	-	5	2	1	6	3	1	7	2	-	2	1	-	6	3	1
OH	24	13	3	15	9	3	15	13	2	15	12	-	16	11	1	16	11	2
OK	13	4	-	14	5	-	20	9	2	10	5	-	4	2	1	12	7	-
OR	12	4	2	5	4	-	5	3	-	10	4	2	11	4	-	12	4	1
PA	15	7	-	12	8	2	12	12	1	10	8	-	14	11	-	20	14	3
RI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	4	3	1	1	1	-	3	2	-	6	5	1	4	1	-	9	6	2
SD	2	2	-	1	1	-	-	-	-	1	-	-	2	1	-	3	1	-
TN	13	7	2	15	7	2	13	6	-	18	11	2	23	13	2	32	9	3
TX	78	42	4	72	33	4	76	42	5	58	26	3	83	43	3	91	55	4
UT	10	4	2	12	5	-	6	1	-	5	2	-	6	5	1	10	6	-
VT	-	-	-	1	1	-	2	-	-	2	-	-	1	-	-	-	-	-
VA	5	2	-	-	-	-	3	1	-	6	5	1	5	3	1	7	3	1
WA	19	11	1	13	4	-	26	10	-	6	2	-	14	2	-	14	7	1
WV	3	2	-	-	-	-	7	6	-	3	1	-	2	1	1	4	2	2
WI	7	5	-	19	5	-	24	11	-	19	10	1	11	2	-	6	3	1
WY	17	5	1	18	9	1	8	4	-	12	4	2	3	2	1	9	3	1
Tot	586	268	29	558	271	36	596	308	27	562	292	34	540	277	31	628	317	43

Cnt = Number of Consists; Dmg = Damaged; Rls = Releases

TABLE 1-11 TOTAL HIGHWAY-RAIL CROSSING INCIDENTS BY RAILROAD

	At Public Crossing						At Private Crossing					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Alton & Southern RR	3	3	1	1	-	1	-	-	-	-	-	-
Alaska RR Corp.	9	3	3	5	4	3	1	-	-	1	1	1
Amtrak (Natl RR Passenger Corp.)	148	147	138	132	150	145	22	25	16	18	26	25
Bangor & Aroostook RR	1	2	1	1	2	1	3	3	2	2	1	1
Bessemer & Lake Erie RR Co.	1	1	-	2	5	1	-	-	1	-	-	-
Burlington Northern Santa Fe	594	625	667	528	537	462	90	94	105	104	74	79
Belt Rwy Co. Of Chicago	4	2	5	-	2	1	-	-	-	-	-	-
Consolidated Rail Corp.	308	283	212	218	173	156	34	25	24	24	14	12
CSX Transportation	464	494	553	446	432	378	27	46	43	35	37	43
Delaware & Hudson Rwy Co.	6	5	7	6	9	2	-	3	6	2	3	-
Dakota, Minnesota & Eastern RR	26	15	17	10	19	14	-	2	1	1	2	-
Duluth, Missabe & Iron Range Rwy	3	3	1	3	2	1	-	-	-	1	-	-
Duluth, Winnipeg & Pacific Rwy	2	1	1	2	4	2	-	-	-	-	-	-
Elgin, Joliet & Eastern Rwy Co.	10	3	9	7	3	6	3	2	6	2	2	2
Florida East Coast Rwy Co.	26	28	26	28	20	17	1	2	-	-	-	1
Guilford Rail System	8	7	5	9	13	5	2	1	3	-	2	-
Grand Trunk Western RR Inc.	64	57	47	43	38	13	6	3	3	-	2	1
Gateway Western Rwy	5	10	6	7	6	5	-	-	1	2	-	-
Illinois Central RR Co.	125	128	119	124	115	114	8	10	9	12	21	12
Indiana Harbor Belt RR Co.	9	17	17	12	10	10	2	-	1	2	4	-
I & M Rail Link, LLC	-	-	-	-	16	37	-	-	-	-	4	5
Kansas City Southern Rwy Co.	154	166	188	165	171	176	14	14	19	13	16	14
Long Island Rail Road	12	5	11	10	4	6	-	-	-	-	-	-
Massachusetts Bay Transit Auth.	-	-	-	1	4	3	-	-	-	-	1	-
Metro North Commuter RR Co.	4	3	4	7	2	5	1	3	-	2	1	1
Montana Rail Link	9	10	9	12	15	11	8	3	4	10	8	5
Northern IN Commuter Trans. Dist	16	9	7	10	13	9	-	1	1	-	-	3
Northeast IL Reg Commuter Rail	15	23	15	21	15	11	-	-	3	2	1	1
New Jersey Transit Rail	17	9	6	12	10	8	-	-	2	-	-	-
Norfolk Southern Corp.	744	667	608	500	446	432	83	82	83	68	62	61
Other Railroads	384	409	338	369	318	302	37	43	27	36	44	48
Paducah & Louisville Rwy Co.	5	4	4	4	9	11	-	-	1	-	2	1
Port Authority Trans Hudson	-	-	-	-	-	-	-	1	-	-	-	-
Penisula Commuter(San Mateo Cnty	-	-	-	-	-	2	-	-	-	-	-	-
Port Terminal RR Association	3	3	5	4	4	3	5	9	4	1	1	2
Southern CA Regional Rail Auth.	-	4	12	10	8	8	-	-	-	-	1	-
Southeastern PA Trans. Authority	4	4	4	1	1	1	-	1	-	-	-	-
Soo Line RR Co.	94	84	73	77	49	45	8	6	12	8	6	4
Texas Mexican RR Co.	6	6	2	4	12	12	1	2	-	-	-	1
Terminal RR Assn Of St. Louis	2	3	1	2	-	-	-	-	-	-	-	-
Union Pacific RR Co.	1,025	1,126	919	871	680	590	90	87	96	115	103	91
Union RR Co. (Pittsburgh)	-	-	-	-	1	-	-	-	-	2	-	-
Wisconsin Central Ltd.	100	104	93	105	81	68	9	8	5	5	11	6
Wheeling & Lake Erie Rwy Co.	27	30	19	19	11	9	-	-	2	1	1	2
Total	4,437	4,503	4,153	3,788	3,414	3,086	455	476	480	469	451	422

TABLE 1-12 TOTAL HIGHWAY-RAIL CROSSING INCIDENTS BY STATE

	At Public Crossing						At Private Crossing						At Public Crossing			At Private Crossing		
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
AL	167	172	168	142	121	134	15	16	10	15	14	11	904	99	375	81	2	16
AK	10	3	3	5	4	3	1	-	-	1	1	1	28	4	15	4	-	-
AZ	28	24	34	25	25	32	3	7	4	5	2	3	168	19	54	24	1	5
AR	141	139	150	131	100	104	11	6	11	14	18	12	765	110	310	72	9	14
CA	165	183	169	172	133	159	26	33	31	29	26	31	981	161	287	176	28	78
CO	57	43	53	25	24	25	7	9	6	8	4	7	227	36	89	41	8	8
CT	10	4	6	9	4	8	2	6	-	3	2	2	41	3	16	15	-	7
DE	10	5	3	4	4	4	1	-	2	-	-	1	30	2	17	4	-	1
DC	-	-	-	2	-	-	-	-	-	-	-	1	2	-	-	1	-	-
FL	110	114	88	93	79	68	3	10	7	9	10	7	552	90	262	46	6	20
GA	148	148	147	136	124	119	8	13	13	19	14	21	822	86	295	88	7	28
ID	43	39	33	43	27	25	5	6	1	6	3	2	210	38	74	23	-	4
IL	280	308	268	210	191	177	23	29	27	22	22	22	1,434	242	644	145	11	42
IN	286	273	255	211	210	176	13	9	16	13	17	18	1,411	165	563	86	5	26
IA	132	157	118	114	90	90	5	2	5	9	16	14	701	60	280	51	6	12
KS	100	94	92	101	99	62	6	3	9	12	10	9	548	71	201	49	3	11
KY	72	80	87	69	49	59	10	17	16	8	16	14	416	32	175	81	5	27
LA	206	202	205	213	179	192	18	23	18	18	24	22	1,197	145	593	123	13	51
ME	4	5	6	6	10	7	5	3	5	2	2	1	38	-	13	18	-	4
MD	12	12	11	9	16	11	2	1	1	1	2	4	71	-	30	11	-	2
MA	9	16	13	19	14	3	3	4	1	3	4	2	74	4	31	17	-	2
MI	153	158	126	136	144	96	18	5	7	6	8	8	813	84	433	52	4	26
MN	124	138	139	132	110	108	9	11	13	25	6	8	751	84	258	72	5	12
MS	121	163	146	120	133	124	9	13	13	12	15	9	807	121	350	71	7	30
MO	103	115	113	107	89	72	12	10	15	20	23	15	599	88	210	95	8	24
MT	22	18	13	23	18	19	14	12	6	11	11	8	113	19	48	62	3	9
NE	82	86	71	54	62	49	9	6	15	9	6	10	404	66	124	55	2	8
NV	1	7	5	6	-	1	3	1	3	1	1	3	20	6	9	12	5	3
NH	3	2	4	1	2	2	-	1	1	1	-	-	14	-	2	3	1	-
NJ	48	34	20	27	33	16	3	3	4	4	1	1	178	30	66	16	1	11
NM	24	17	15	23	17	14	1	3	3	3	3	3	110	31	69	16	1	3
NY	42	37	42	31	27	25	6	10	10	5	10	4	204	33	68	45	5	10
NC	155	145	122	112	103	93	13	14	13	11	11	16	730	62	260	78	7	30
ND	36	20	34	30	19	20	-	2	4	3	2	3	159	26	68	14	1	5
OH	259	229	220	174	172	142	18	11	19	12	6	12	1,196	167	405	78	7	13
OK	122	116	108	75	109	60	5	10	5	5	8	6	590	102	318	39	1	13
OR	40	38	29	28	25	30	12	6	6	15	10	14	190	21	37	63	10	5
PA	98	73	70	64	58	58	15	17	10	10	9	5	421	33	134	66	7	15
RI	-	-	1	-	1	1	-	2	-	-	-	-	3	-	1	2	-	1
SC	81	87	99	83	72	75	5	5	12	4	2	3	497	59	231	31	6	5
SD	30	29	41	20	22	14	2	2	-	-	1	1	156	7	68	6	-	-
TN	100	99	91	113	78	90	8	9	10	10	10	14	571	63	152	61	8	10
TX	464	502	423	391	368	288	42	55	51	43	53	34	2,436	302	1098	278	46	96
UT	26	26	30	31	25	23	5	2	3	4	2	1	161	49	44	17	1	4
VT	3	3	3	3	1	3	4	3	1	3	-	1	16	2	11	12	-	3
VA	71	56	57	50	37	36	23	26	19	20	19	15	307	20	77	122	7	37
WA	55	60	50	51	57	48	20	15	33	18	7	11	321	25	79	104	7	25
WV	29	41	33	17	19	21	12	16	7	5	6	2	160	10	35	48	5	12
WI	151	176	132	144	106	97	13	6	8	6	11	8	806	49	373	52	5	12
WY	4	7	7	3	4	3	7	3	6	6	3	2	28	7	10	27	3	3
Tot	4,437	4,503	4,153	3,788	3,414	3,086	455	476	480	469	451	422	23,381	2933	9362	2,753	267	783

TABLE 1-13 HIGHWAY-RAIL CROSSING INCIDENTS CASUALTIES BY RAILROAD

	Fatal						Nonfatal					
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998
Alton & Southern RR	-	-	-	-	-	-	-	3	-	1	-	1
Alaska RR Corp.	-	3	-	-	1	-	5	3	5	-	-	2
Amtrak (Natl RR Passenger Corp.)	63	44	63	41	53	50	110	44	70	66	123	125
Bangor & Aroostook RR	-	-	-	-	-	-	2	2	2	1	-	-
Bessemer & Lake Erie RR Co.	-	-	-	-	1	-	-	-	-	-	5	1
Burlington Northern Santa Fe	92	118	128	107	85	96	252	285	280	197	209	183
Belt Rwy Co. Of Chicago	-	-	-	-	1	-	2	1	1	-	2	-
Consolidated Rail Corp.	41	46	36	25	23	14	102	93	52	97	58	39
CSX Transportation	57	58	71	42	59	55	229	266	269	196	213	161
Delaware & Hudson Rwy Co.	-	1	2	-	2	-	3	6	4	2	6	-
Dakota, Minnesota & Eastern RR	-	-	1	1	-	-	14	8	11	6	1	2
Duluth, Missabe & Iron Range Rwy	2	2	-	-	-	-	1	2	-	1	1	1
Duluth, Winnipeg & Pacific Rwy	-	1	-	-	3	1	1	-	2	2	-	1
Elgin, Joliet & Eastern Rwy Co.	2	1	-	-	-	-	3	2	5	2	2	1
Florida East Coast Rwy Co.	7	3	6	5	5	1	6	16	7	10	9	8
Other Railroads	20	16	10	13	10	8	154	151	144	149	88	102
Guilford Rail System	-	-	1	-	1	-	1	3	-	3	2	2
Grand Trunk Western RR Inc.	10	13	3	9	7	4	26	30	28	20	33	9
Gateway Western Rwy	1	1	-	3	-	1	-	2	1	-	4	1
Illinois Central RR Co.	13	8	7	11	13	13	73	61	60	67	66	51
Indiana Harbor Belt RR Co.	-	-	-	-	-	-	7	7	8	7	6	2
I & M Rail Link, LLC	-	-	-	-	2	2	-	-	-	-	8	26
Kansas City Southern Rwy Co.	7	8	13	24	22	25	74	88	98	69	82	88
Long Island Rail Road	5	2	4	3	3	2	1	-	2	6	2	3
Massachusetts Bay Transit Auth.	-	-	-	-	1	1	-	-	-	22	1	-
Metro North Commuter RR Co.	-	-	-	1	-	-	2	4	5	3	-	-
Montana Rail Link	4	3	1	3	1	-	1	1	3	5	8	6
Northern IN Commuter Trans. Dist	1	-	-	1	-	3	2	2	-	1	2	2
Northeast IL Reg Commuter Rail	6	3	4	2	2	1	8	84	4	13	9	8
New Jersey Transit Rail	1	2	5	2	7	5	16	4	-	2	1	2
Norfolk Southern Corp.	104	81	72	49	46	44	234	219	227	192	187	140
Paducah & Louisville Rwy Co.	-	-	-	-	-	-	3	-	2	-	6	1
Penisula Commuter(San Mateo Cnty	-	-	-	-	-	-	-	-	-	-	-	1
Port Terminal RR Association	1	-	-	-	-	1	2	1	2	4	3	2
Southern CA Regional Rail Auth.	-	2	4	3	2	4	-	-	4	1	-	-
Southeastern PA Trans. Authority	1	-	-	-	1	-	5	1	1	1	3	-
Soo Line RR Co.	14	10	7	6	2	5	45	39	32	31	26	22
Texas Mexican RR Co.	-	1	-	-	-	1	-	2	-	-	4	9
Terminal RR Assn Of St. Louis	-	-	-	-	-	-	-	-	-	2	-	-
Union Pacific RR Co.	167	177	136	133	103	89	375	464	499	376	325	262
Wisconsin Central Ltd.	6	9	5	3	3	5	62	46	55	45	42	38
Wheeling & Lake Erie Rwy Co.	1	2	-	1	2	-	16	21	11	10	3	1
Total.....	626	615	579	488	461	431	1,837	1,961	1,894	1,610	1,540	1,303

TABLE 1-14 TOTAL HIGHWAY-RAIL CROSSING INCIDENTS CASUALTIES BY STATE

	Fatal						Nonfatal						6 Year Total	
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998	Ftl	Nonf
AL	25	12	16	18	19	11	53	78	86	70	58	46	101	391
AK	-	3	-	-	1	-	5	3	5	-	-	2	4	15
AZ	2	3	2	4	5	4	11	11	11	5	12	9	20	59
AR	22	21	22	20	10	24	56	66	73	39	44	45	119	323
CA	40	43	28	24	22	32	50	60	70	56	65	64	189	365
CO	9	13	11	5	2	4	21	12	32	13	6	13	44	97
CT	1	-	1	-	-	1	4	7	4	3	1	4	3	23
DE	-	1	-	-	1	-	6	4	1	2	2	3	2	18
FL	21	17	23	16	12	7	72	49	53	36	42	30	96	282
GA	19	13	17	19	12	13	62	57	68	44	57	35	93	323
ID	6	9	7	6	6	4	14	14	15	15	6	14	38	78
IL	55	54	48	39	27	30	118	189	139	88	85	67	253	686
IN	36	29	29	28	23	25	96	129	91	81	112	80	170	589
IA	15	19	9	8	12	3	46	56	67	38	55	30	66	292
KS	5	16	15	13	16	9	35	32	47	40	28	30	74	212
KY	7	10	7	3	5	5	42	42	48	24	26	20	37	202
LA	26	18	28	31	30	25	101	107	105	119	111	101	158	644
ME	-	-	-	-	-	-	3	4	3	2	2	3	-	17
MD	-	-	-	-	-	-	5	5	6	7	7	2	-	32
MA	-	-	1	-	2	1	1	3	1	27	1	-	4	33
MI	16	25	5	17	14	11	84	85	70	85	89	46	88	459
MN	17	18	19	14	7	14	46	65	32	48	32	47	89	270
MS	14	25	31	15	19	24	66	70	51	69	61	63	128	380
MO	13	13	22	19	15	14	38	46	56	36	33	25	96	234
MT	9	1	4	3	1	4	6	11	4	14	11	11	22	57
NE	11	20	8	9	9	11	28	23	28	21	13	19	68	132
NV	2	2	5	1	-	1	-	3	2	5	-	2	11	12
NH	-	-	-	1	-	-	-	-	2	-	-	-	1	2
NJ	4	6	5	2	9	5	31	10	3	15	14	4	31	77
NM	4	5	5	7	6	5	24	6	11	19	6	6	32	72
NY	10	6	9	4	7	2	16	14	14	14	14	6	38	78
NC	16	12	11	9	6	15	51	48	40	53	50	48	69	290
ND	7	2	7	4	1	6	16	12	18	13	7	7	27	73
OH	45	38	36	14	26	15	97	85	82	63	46	45	174	418
OK	13	17	15	22	24	12	64	70	64	38	56	39	103	331
OR	7	2	12	1	4	5	9	12	5	5	2	9	31	42
PA	11	8	12	3	5	1	41	23	13	25	26	21	40	149
RI	-	-	-	-	-	-	-	1	1	-	-	-	-	2
SC	23	10	6	6	14	6	38	37	63	39	27	32	65	236
SD	-	1	4	2	-	-	15	15	15	9	8	6	7	68
TN	9	14	13	9	12	14	26	28	32	26	24	26	71	162
TX	75	58	55	61	54	45	194	241	229	175	198	158	348	1,195
UT	7	17	7	11	3	5	6	6	15	7	8	6	50	48
VT	1	-	-	1	-	-	4	2	3	5	-	-	2	14
VA	6	7	6	4	2	2	22	16	22	22	15	17	27	114
WA	5	4	4	6	7	6	16	21	21	18	23	5	32	104
WV	2	4	1	2	4	2	13	9	10	6	4	5	15	47
WI	9	14	13	5	6	7	83	74	61	66	53	48	54	385
WY	1	5	-	2	1	1	2	-	2	5	-	4	10	13
Tot	626	615	579	488	461	431	1,837	1,961	1,894	1,610	1,540	1,303	3,200	10,145

TABLE 1-15 TRESPASSER CASUALTIES BY RAILROAD, NOT AT HRC

	Fatal						Nonfatal						6 Year Total	
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998	Ftl	Nonf
ALS	-	-	-	-	-	-	-	1	-	-	-	-	-	1
ARR	-	-	1	1	-	1	-	-	1	2	-	-	3	3
ATK	96	80	59	56	57	67	20	12	6	14	32	30	415	114
BLE	-	1	-	-	-	-	-	-	-	-	-	-	1	-
BNSF	55	72	81	60	85	104	55	68	85	77	68	70	457	423
CR	49	10	9	4	33	23	44	16	19	5	38	30	128	152
CSX	54	64	60	51	47	64	59	59	45	54	47	55	340	319
DH	7	6	2	1	2	-	11	4	3	1	2	2	18	23
DME	-	-	-	-	1	-	-	-	-	1	2	-	1	3
DWP	-	1	-	-	-	1	-	-	-	-	-	-	2	-
EJE	1	-	-	-	-	-	-	1	-	-	-	-	1	1
FEC	13	10	12	17	14	9	13	26	19	9	13	16	75	96
GRP3	14	12	9	10	10	5	13	16	26	14	11	24	60	104
GRS	2	1	1	-	3	2	1	-	2	-	6	3	9	12
GTW	5	3	3	2	2	-	6	3	4	4	1	-	15	18
GWWR	-	-	-	-	1	1	-	-	-	1	1	-	2	2
IC	3	5	1	6	4	2	5	12	13	5	7	4	21	46
IHB	-	2	3	1	2	-	7	2	5	2	2	1	8	19
IMRL	-	-	-	-	-	-	-	-	-	-	-	2	-	2
KCS	9	4	6	2	4	4	10	2	5	8	6	11	29	42
LI	11	7	13	6	14	6	10	9	9	16	37	10	57	91
MBTA	-	-	-	6	9	1	-	-	-	3	-	1	16	4
MNCW	6	11	14	2	6	4	5	2	5	4	3	2	43	21
MRL	4	1	1	2	3	-	2	3	3	1	1	-	11	10
NICD	-	2	1	-	1	-	-	-	-	-	1	-	4	1
NIRC	2	6	5	5	5	4	5	6	3	4	2	9	27	29
NJTR	11	17	25	14	15	18	11	5	9	3	5	2	100	35
NS	58	66	49	57	54	63	71	57	57	67	56	58	347	366
PAL	-	-	1	1	-	1	1	3	1	1	1	1	3	8
PATH	-	-	1	-	-	-	-	-	-	-	1	2	1	3
PCMZ	-	-	-	3	6	3	-	-	-	-	1	6	12	7
PTRA	-	-	1	-	-	-	1	-	-	-	1	-	1	2
SCAX	6	2	2	2	6	2	2	-	2	-	1	1	20	6
SEPA	4	5	1	5	4	3	2	4	4	2	6	12	22	30
SOO	1	1	2	4	3	1	5	7	8	6	1	6	12	33
TM	-	1	1	-	-	-	1	-	-	1	1	1	2	4
TRRA	-	-	-	-	-	-	-	-	-	1	-	-	-	1
UP	111	138	125	152	139	146	145	130	121	159	155	151	811	861
WC	1	1	5	1	3	1	4	4	6	7	7	3	12	31
WE	-	-	-	-	-	-	-	-	-	2	-	-	-	2
Tot	523	529	494	471	533	536	509	452	461	474	516	513	3,086	2,925

TABLE 1-16 TRESPASSER CASUALTIES BY STATE, NOT AT HRC

	Fatal						Nonfatal						6 Year Total	
	1993	1994	1995	1996	1997	1998	1993	1994	1995	1996	1997	1998	Ftl	Nonf
AL	8	5	7	7	9	13	8	8	5	12	11	5	49	49
AK	-	-	1	1	-	1	-	-	1	2	-	1	3	4
AZ	7	15	14	16	18	15	10	11	9	9	3	10	85	52
AR	7	3	-	5	1	12	8	8	4	6	8	7	28	41
CA	98	73	73	68	81	79	42	37	43	45	38	56	472	261
CO	3	7	2	5	7	8	2	9	7	4	11	10	32	43
CT	7	6	6	3	7	3	2	1	1	4	2	1	32	11
DE	2	1	-	1	-	1	1	-	-	1	-	1	5	3
DC	-	1	1	-	-	1	-	-	-	-	1	1	3	2
FL	27	31	25	23	24	23	24	32	29	14	22	35	153	156
GA	12	10	12	8	11	16	21	14	14	18	9	17	69	93
ID	2	5	3	1	-	4	5	2	2	1	4	4	15	18
IL	30	40	36	32	44	34	37	34	38	30	28	24	216	191
IN	10	7	7	7	11	5	4	7	8	6	4	10	47	39
IA	1	4	4	4	2	3	2	6	4	6	7	6	18	31
KS	4	6	2	5	2	7	3	7	2	5	4	9	26	30
KY	6	10	12	8	17	5	7	7	12	14	7	12	58	59
LA	16	11	8	6	5	7	20	13	18	9	16	11	53	87
ME	-	-	-	-	1	1	-	-	2	-	6	-	2	8
MD	6	8	9	7	4	4	5	6	6	2	2	7	38	28
MA	12	12	8	11	16	4	5	3	3	4	3	8	63	26
MI	8	8	6	10	7	5	10	10	6	7	14	7	44	54
MN	6	4	5	4	6	8	8	9	9	5	3	10	33	44
MS	1	5	1	2	3	3	6	5	5	3	1	6	15	26
MO	15	12	7	10	6	19	4	5	8	9	7	7	69	40
MT	5	4	5	5	6	3	2	4	6	3	2	-	28	17
NE	5	4	2	5	4	2	6	2	3	6	4	4	22	25
NV	1	1	3	2	2	5	-	5	1	1	4	4	14	15
NH	-	-	-	-	-	1	-	-	-	-	-	6	1	6
NJ	18	17	25	16	18	23	18	9	12	4	9	3	117	55
NM	2	7	9	5	11	7	7	3	4	12	7	8	41	41
NY	42	29	33	16	32	25	32	15	22	20	54	23	177	166
NC	20	34	18	16	19	24	15	19	9	19	22	14	131	98
ND	-	3	2	1	1	1	1	1	3	3	-	2	8	10
OH	17	10	7	12	15	12	17	13	10	10	14	21	73	85
OK	7	4	2	6	6	7	3	4	2	13	11	5	32	38
OR	4	7	8	5	12	15	13	7	6	14	8	10	51	58
PA	17	14	11	14	21	16	33	12	16	8	26	28	93	123
RI	1	-	-	1	4	2	-	-	-	-	-	1	8	1
SC	16	13	9	12	5	17	10	9	3	6	9	6	72	43
SD	1	-	1	-	1	-	1	1	-	1	2	-	3	5
TN	9	4	9	11	8	10	7	6	10	9	11	5	51	48
TX	28	48	54	60	38	50	61	62	67	89	78	78	278	435
UT	3	3	3	3	3	1	7	-	5	5	5	1	16	23
VT	-	-	1	-	-	1	1	-	-	-	-	2	2	3
VA	15	16	9	14	9	10	11	3	10	8	8	3	73	43
WA	13	15	21	13	17	13	13	17	22	10	16	7	92	85
WV	6	4	6	3	7	5	11	11	6	9	5	6	31	48
WI	4	5	6	4	11	4	4	14	8	8	10	9	34	53
WY	1	3	1	3	1	1	2	1	-	-	-	2	10	5
Tot	523	529	494	471	533	536	509	452	461	474	516	513	3,086	2,925

CHAPTER 2

CURRENT YEAR SUMMARY OF ACCIDENTS/INCIDENTS AND RATES

The Federal Railroad Administration's (FRA) regulations on reporting railroad accidents/ incidents are found primarily in Title 49 of the Code of Federal Regulations (CFR), Part 225 (49 CFR Part 225). The purpose of the regulations in Part 225 is to provide FRA with accurate information concerning the hazards and risks that exist on the Nation's railroads. FRA needs this information to effectively carry out its regulatory and enforcement responsibilities under the Federal railroad safety statutes. FRA also uses this information for determining comparative trends of railroad safety and to develop hazard elimination and risk reduction programs that focus on preventing railroad injuries and accidents. Issuance of these regulations preempts States from prescribing accident/incident reporting requirements. Any State may, however, require railroads to submit to it copies of reports filed with FRA under Part 225 for accidents/incidents that occur in that State.

These FRA accident/incident reporting requirements apply to all railroads except--

1. A railroad that operates freight trains only on track inside an installation which is not part of the general railroad system of transportation or that owns no track except for track that is inside an installation that is not part of the general railroad system of transportation and used for freight operations.

2. Rail mass transit operations in an urban area that are not connected with the general railroad system of transportation.

3. A railroad that exclusively hauls passengers inside an installation that is insular or that owns no track except for track used exclusively for the hauling of passengers inside an installation that is insular. An operation is not considered insular if one or more of the following exists on its line:

    a. A public highway-rail grade crossing that is in use;

    b. An at-grade rail crossing that is in use;

    c. A bridge over a public road or waters used for commercial navigation; or

    d. A common corridor with a railroad, i.e., its operations are within 30 feet of those of any railroad.

Part 225 covers any and all activities of a railroad related to the performance of its rail

transportation business. "Railroad transportation" means any form of non-highway ground transportation that run on rails or electro-magnetic guideways, including (1) commuter or other short-haul railroad passenger service in a metropolitan or suburban area, as well as any commuter railroad service that was operated by the Consolidated Rail Corporation as of January 1, 1979, and (2) high speed ground transportation systems that connect metropolitan areas, without regard to whether they use new technologies not associated with traditional railroads. Such term does not include rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

Approximately 700 railroads currently submit accident/incident reports. It is not possible to display the safety record of each railroad in this publication. Consequently, the listing of individual railroads has been limited to those defined by the Surface Transportation Board (STB) to be Class 1 railroads, and other railroads reporting annual employees worked in excess of 400,000.

Railroads have been assigned to 1 of 3 groups in this bulletin. Group 1 corresponds to the railroads that have defined as Class 1; Group 2 includes railroads that reported at least 400,000 hours worked; and, Group 3 contains all other railroads.

In order to conserve space, most tables display the reporting code assigned to a railroad. Please see Table 2-8 for a listing of the code and railroad name.

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CHAPTER 2

CURRENT YEAR SUMMARY OF ACCIDENTS/INCIDENTS AND RATES

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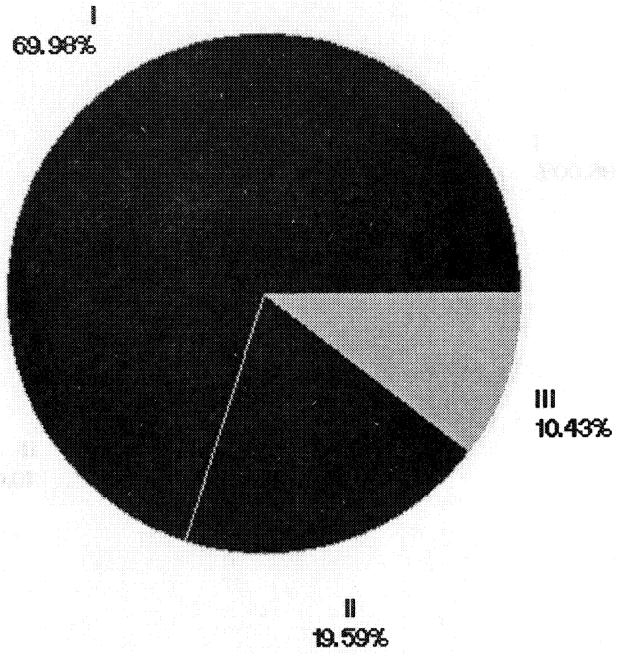
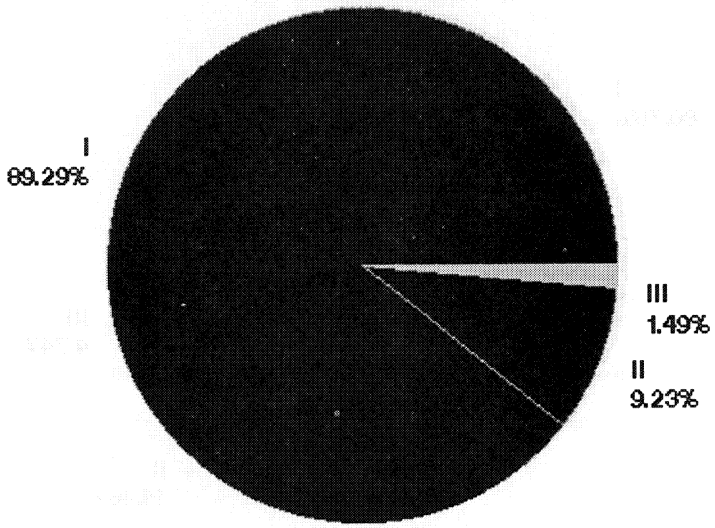
Tables

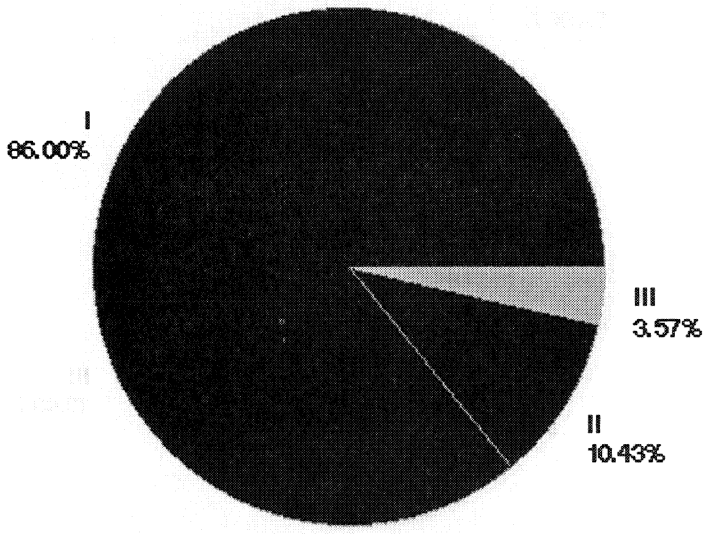
2–1 ACCIDENTS/INCIDENTS BY RAILROAD GROUPS



2–2 FATALITIES BY RAILROAD GROUPS



2—3 TRAIN MILES BY RAILROAD GROUPS



2—4 EMPLOYEE HOURS BY RAILROAD GROUPS

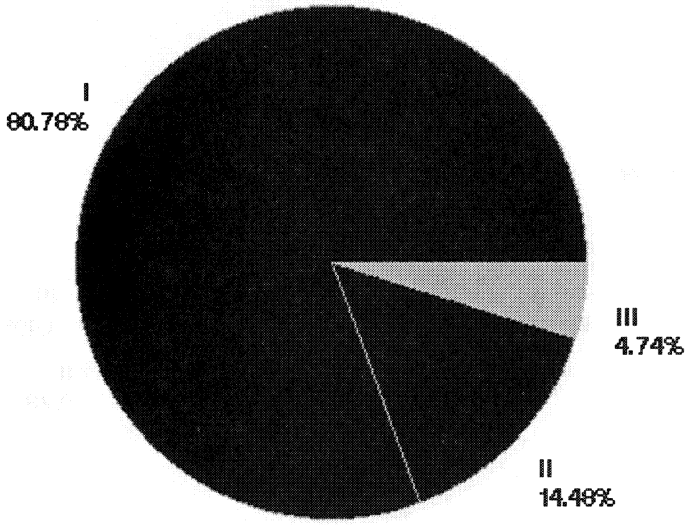


TABLE 2-1 ACCIDENTS/INCIDENTS, BY MONTH, 1998

	Total			Train Accidents			HRC Incidents			Other Incidents		
	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf
Jan	1,335	69	896	204	-	6	329	31	114	802	38	776
Feb	1,184	66	782	196	-	9	281	33	88	707	33	685
Mar	1,354	75	954	198	1	5	308	43	118	848	31	831
Apr	1,285	67	905	218	-	15	249	34	98	818	33	792
May	1,360	107	955	228	-	9	253	44	107	879	63	839
Jun	1,478	98	1,044	231	1	11	315	42	147	932	55	886
Jul	1,598	115	1,122	262	1	17	313	41	133	1,023	73	972
Aug	1,492	76	1,055	212	-	9	300	28	104	980	48	942
Sep	1,449	92	1,026	214	-	17	303	41	114	932	51	895
Oct	1,396	95	962	200	-	-	292	32	95	904	63	867
Nov	1,263	84	852	204	-	12	271	35	86	788	49	754
Dec	1,309	64	906	208	1	19	294	27	99	807	36	788
Total	16,503	1,008	11,459	2,575	4	129	3,508	431	1,303	10,420	573	10,027

Cnt = the count of accidents. Fatal = the number of fatalities. Nonf = the number of nonfatal injuries.

TABLE 2-2 ACCIDENT/INCIDENT RATES, BY MONTH, 1998

	Total Rate	Train Acc Rate	EOD Rate	HRC Rate	Other Events	Tres Rate	Psgr Rate	Psgr Train Rate	Yard Track Rate	Other Track Rate
Jan	13.38	3.59	2.93	5.79	8.04	1.23	4.21	1.41	14.92	1.99
Feb	12.79	3.71	2.86	5.32	7.63	1.21	2.90	0.49	16.58	1.90
Mar	13.21	3.43	3.13	5.34	8.27	1.02	3.77	0.93	14.36	1.88
Apr	12.87	3.87	3.16	4.42	8.19	1.12	3.91	0.78	16.02	2.15
May	13.51	3.96	3.24	4.39	8.73	1.86	4.07	0.61	17.72	2.05
Jun	14.69	4.10	3.42	5.58	9.26	1.65	4.56	0.46	15.41	2.44
Jul	15.81	4.64	3.57	5.55	10.12	2.20	4.49	1.17	16.12	3.05
Aug	14.61	3.64	3.54	5.15	9.59	1.92	3.27	0.76	14.34	2.17
Sep	14.45	3.75	3.52	5.31	9.29	1.79	3.03	1.54	15.27	2.15
Oct	13.31	3.31	3.28	4.83	8.62	1.64	2.90	0.89	15.86	1.56
Nov	12.97	3.60	3.20	4.79	8.09	1.38	3.76	1.38	15.77	1.96
Dec	13.64	3.70	3.37	5.22	8.41	1.39	3.32	1.50	15.01	2.14
Avg.	13.78	3.77	3.27	5.14	8.70	1.54	3.69	1.00	15.60	2.12

See following page for description of rates.

Total accident/incident rate (column 1) is the total number of reportable incidents (train accidents, highway-rail, and other incidents) times one million divided by the sum of train miles operated and employee hours worked.

Train accident and highway-rail incident rates (column 2 and 4) are the number of events per one million train miles operated.

The yard accident rate (column 9) is the number of accidents occurring on yard track per one million yard switching train miles operated.

The other track rate (line 5) is the number of accidents that did not occur on yard track per one million train miles, excluding yard switching train miles.

The employee on duty rate (column 3) is the total number of railroad employee casualties times 200,000 divided by the number of hours worked by employees.

Other events rate (column 5) is the number of other incidents times one million divided by the sum of train miles operated and employee hours worked.

The trespasser rate (column 6) is the total number of trespasser casualties, excluding those trespassers Fatal or injured in highway-rail incidents, per one million train miles operated.

The passenger on train rate (column 7) is the total number of passenger casualties per 100,000,000 passenger miles. A passenger mile is the movement of one passenger for a distance of one mile.

The passenger train accident rate (column 8) is the number of accidents involving passenger trains per one million passenger train miles operated.

TABLE 2-3 ACCIDENTS/INCIDENTS BY RAILROAD GROUPS, 1998

	Total			Train Accidents			HRC Incidents			Other Incidents		
	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf
I	11,549	900	7,532	2,002	4	117	2,853	395	1,080	6,694	501	6,335
II	3,233	93	2,717	306	-	7	305	28	121	2,622	65	2,589
III	1,721	15	1,210	267	-	5	350	8	102	1,104	7	1,103
ALL	16,503	1,008	11,459	2,575	4	129	3,508	431	1,303	10,420	573	10,027

TABLE 2-4 OPERATIONAL DATA BY RAILROAD GROUPS, 1998

	Train Miles	Freight Train Miles	Passenger Train Miles	Yard Switching Train Miles	Other Train Miles	Employee Hours	Passengers Carried
I	585,372,376	481,708,931	34,400,239	68,870,471	392,735	416,145,570	59,272,898
II	72,541,699	23,590,370	40,752,652	8,066,381	132,296	73,773,962	365,917,455
III	24,980,766	14,806,787	3,230,002	6,755,212	188,765	24,950,018	14,767,165
ALL	682,894,841	520,106,088	78,382,893	83,692,064	713,796	514,869,550	439,957,518

TABLE 2-5 ACCIDENT/INCIDENT RATES BY RAILROAD GROUPS, 1998

	Total Rate	Train Acc Rate	EOD Rate	HRC Rate	Other Events	Tres Rate	Psgr Rate	Psgr Train Rate	Yard Rate
I	11.53	3.42	2.63	4.87	6.68	1.52	3.63	1.02	15.71
II	22.10	4.22	5.31	4.20	17.92	1.81	3.94	1.01	18.72
III	34.47	10.69	8.04	14.01	22.11	1.16	2.33	0.62	10.81
Avg.	13.78	3.77	3.27	5.14	8.70	1.54	3.69	1.00	15.60

Railroads have been assigned to 1 of 3 groups in this bulletin. Group 1 corresponds to the railroads that have been defined as Class 1; Group 2 includes railroads that reported at least 400,000 hours worked; and, Group 3 contains all other railroads.

TABLE 2-6 ACCIDENTS/INCIDENTS BY RAILROAD, 1998

Grp-	RR	Total			Train Accidents			HRC Incidents			Other Incidents		
		Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf
1	ATK	1,341	120	1,180	89	-	28	170	50	125	1,082	70	1,027
	BNSF	2,253	209	1,412	435	1	22	541	96	183	1,277	112	1,207
	CR	876	37	507	236	-	18	168	14	39	472	23	450
	CSX	1,580	125	953	310	-	1	421	55	161	849	70	791
	GTW	188	4	162	21	-	-	14	4	9	153	-	153
	IC	314	18	165	73	1	2	126	13	51	115	4	112
	KCS	369	29	198	66	-	-	190	25	88	113	4	110
	NS	1,117	112	563	149	1	4	493	44	140	475	67	419
	SOO	268	6	200	42	-	1	49	5	22	177	1	177
	UP	3,389	240	2,192	727	1	41	681	89	262	1,981	150	1,889
2	ALS	21	-	17	4	-	-	1	-	1	16	-	16
	ARR	67	1	59	5	-	-	4	-	2	58	1	57
	BAR	53	1	47	3	-	-	2	-	-	48	1	47
	BLE	23	-	21	2	-	-	1	-	1	20	-	20
	BRC	47	2	15	29	-	-	1	-	-	17	2	15
	DH	36	-	30	4	-	-	2	-	-	30	-	30
	DME	53	-	25	16	-	-	14	-	2	23	-	23
	DMIR	53	-	43	10	-	-	1	-	1	42	-	42
	DWP	12	2	6	4	-	-	2	1	1	6	1	5
	EJE	68	-	48	14	-	-	8	-	1	46	-	47
	FEC	100	10	62	20	-	1	18	1	8	62	9	53
	GRS	36	2	26	5	-	-	5	-	2	26	2	24
	GWWR	29	2	13	11	-	-	5	1	1	13	1	12
	IHB	92	-	57	27	-	-	10	-	2	55	-	55
	IMRL	115	2	65	34	-	-	42	2	26	39	-	39
	LI	590	10	569	19	-	-	6	2	3	565	8	566
	MBTA	96	2	94	-	-	-	3	1	-	93	1	94
	MNCW	426	4	389	33	-	2	6	-	-	387	4	387
	MRL	40	-	18	12	-	-	16	-	6	12	-	12
	NICD	50	3	34	6	-	-	12	3	2	32	-	32
	NIRC	208	6	206	1	-	-	12	1	8	195	5	198
	NJTR	122	24	94	12	-	4	8	5	2	102	19	88
	PAL	24	1	8	4	-	-	12	-	1	8	1	7
	PATH	165	1	164	-	-	-	-	-	-	165	1	164
	PCMZ	29	3	26	-	-	-	2	-	1	27	3	25
	PTRA	21	1	8	12	-	-	5	1	2	4	-	6
	SCAX	30	6	16	4	-	-	8	4	-	18	2	16
	SEPA	394	3	374	16	-	-	1	-	-	377	3	374
	TM	23	1	14	5	-	-	13	1	9	5	-	5
	TRRA	12	-	2	10	-	-	-	-	-	2	-	2
	URR	31	-	30	1	-	-	-	-	-	30	-	30
	WC	189	6	129	23	-	-	74	5	38	92	1	91
	WE	18	-	8	-	-	-	11	-	1	7	-	7
3	GRP3	1,749	15	1,210	295	-	5	350	8	102	1,104	7	1,103

Highway-Rail Counts Are Excluded From Other Categories

TABLE 2-7 ACCIDENT/INCIDENT RATES BY RAILROAD, 1998

Grp-	RR	Total Rate	Train Acc Rate	EOD Rate	HRC Rate	Other Events	Tres Rate	Psgr Rate	Psgr Train Rate	Yard Rate
1	ATK	17.00	2.51	3.87	4.80	13.71	2.74	3.44	0.99	19.70
	BNSF	8.83	2.67	2.20	3.33	5.01	1.07	2.63	.	12.41
	CR	10.01	5.07	2.05	3.61	5.39	1.14	.	.	19.81
	CSX	11.13	3.71	2.45	5.05	5.98	1.43	.	.	13.54
	GTW	19.29	3.91	7.00	2.60	15.70	.	.	.	6.32
	IC	18.64	7.82	2.80	13.49	6.83	0.64	.	.	158.27
	KCS	26.16	7.62	3.49	21.94	8.01	1.73	.	.	30.09
	NS	9.41	2.19	1.07	7.23	4.00	1.77	.	.	6.92
	SOO	17.81	5.05	4.96	5.90	11.76	0.84	.	.	10.23
	UP	12.85	4.62	3.16	4.33	7.51	1.89	6.08	.	26.47
2	ALS	14.97	5.37	4.86	1.34	11.41	.	.	.	2.69
	ARR	29.70	4.58	9.28	3.66	25.71	0.92	16.23	.	.
	BAR	28.34	2.48	14.56	1.65	25.67	.	.	.	25.49
	BLE	19.14	6.71	3.54	3.36	16.64	.	.	.	131.54
	BRC	26.44	63.18	2.58	2.18	9.56	.	.	.	67.91
	DH	10.62	1.92	4.29	0.96	8.85	0.96	.	.	7.86
	DME	39.66	23.79	6.93	20.82	17.21	.	.	.	.
	DMIR	24.04	12.87	5.88	1.29	19.05	.	.	.	25.85
	DWP	10.74	5.77	2.36	2.88	5.37	1.44	.	.	224.67
	EJE	30.71	20.84	5.83	11.91	20.77	.	.	.	28.84
	FEC	19.15	5.87	3.20	5.28	11.87	7.34	.	.	19.61
	GRS	11.95	4.37	2.25	4.37	8.63	4.37	.	.	13.76
	GWWR	21.88	13.13	4.92	5.97	9.81	1.19	.	.	43.92
	IHB	27.75	17.27	6.05	6.40	16.59	0.64	.	.	.
	IMRL	32.19	16.26	5.40	20.08	10.92	0.96	.	.	94.61
	LI	29.49	2.33	6.88	0.74	28.24	1.96	2.64	1.23	.
	MBTA	13.76	.	4.73	0.89	13.33	0.59	0.55	.	.
	MNCW	23.17	4.23	6.03	0.77	21.05	0.77	0.56	1.79	.
	MRL	6.75	3.12	1.15	4.16	2.03	.	.	.	19.58
	NICD	32.86	7.17	8.17	14.34	21.03	.	2.81	2.77	.
	NIRC	24.81	0.29	5.12	3.51	23.26	3.80	6.56	0.30	.
	NJTR	7.90	1.47	2.33	0.98	6.60	2.45	0.37	0.65	11.15
	PAL	20.04	6.48	2.07	19.44	6.68	3.24	.	.	6.96
	PATH	42.18	.	10.45	.	42.18	1.01	5.33	.	.
	PCMZ	16.74	.	5.01	1.97	15.59	8.88	0.56	.	.
	PTRA	10.91	9.61	1.78	4.00	2.08	.	.	.	7.85
	SCAX	14.56	2.72	2.71	5.44	8.73	2.04	0.84	.	.
	SEPA	45.19	3.08	10.27	0.19	43.24	2.89	44.68	1.73	.
	TM	13.37	4.44	1.35	11.54	2.91	0.89	.	.	.
	TRRA	10.69	17.63	0.36	.	1.78	.	.	.	10.58
	URR	35.01	6.01	7.79	.	33.88	.	.	.	6.01
	WC	19.36	4.38	3.81	14.09	9.42	0.76	.	.	7.48
	WE	12.78	.	1.63	20.01	4.97	.	.	.	.
3	GRP3	35.03	11.81	8.04	14.01	22.11	1.16	2.33	0.62	13.18

Highway-Rail Counts Are Excluded From Other Categories

TABLE 2-8 RAILROAD RANKINGS, 1998

Group 1

RR	Train Miles	Hours	Total Rate	Train Acc Rate	EOD Rate	HRC Rate	Other Events	Tres Rate
ATK - Amtrak (Natl RR Passenger Corp.)	6	5	6	2	8	5	9	10
BNSF - Burlington Northern Santa Fe	1	2	1	3	3	2	2	4
CR - Consolidated Rail Corp.	5	6	3	8	2	3	3	5
CSX - CSX Transportation	3	3	4	4	4	6	4	6
GTW - Grand Trunk Western RR Inc.	10	10	9	5	10	1	10	1
IC - Illinois Central RR Co.	7	7	8	10	5	9	5	2
KCS - Kansas City Southern Rwy Co.	8	9	10	9	7	10	7	7
NS - Norfolk Southern Corp.	4	4	2	1	1	8	1	8
SOO - Soo Line RR Co.	9	8	7	7	9	7	8	3
UP - Union Pacific RR Co.	2	1	5	6	6	4	6	9

Group 2

RR	Train Miles	Hours	Total Rate	Train Acc Rate	EOD Rate	HRC Rate	Other Events	Tres Rate
ALS - Alton & Southern RR	24	27	12	18	17	11	16	1
ARR - Alaska RR Corp.	19	18	26	17	30	18	29	19
BAR - Bangor & Aroostook RR	16	26	24	9	33	12	28	1
BLE - Bessemer & Lake Erie RR Co.	32	19	14	23	13	16	21	1
BRC - Belt Rwy Co. Of Chicago	31	16	22	33	10	14	13	1
DH - Delaware & Hudson Rwy Co.	11	17	3	7	15	8	11	21
DME - Dakota, Minnesota & Eastern RR	26	25	31	32	27	33	22	1
DMIR - Duluth, Missabe & Iron Range Rwy	23	15	20	26	23	10	23	1
DWP - Duluth, Winnipeg & Pacific Rwy	25	33	5	19	9	15	6	24
EJE - Elgin, Joliet & Eastern Rwy Co.	27	13	27	31	22	27	24	1
FEC - Florida East Coast Rwy Co.	8	11	15	20	12	22	17	32
GRS - Guilford Rail System	17	10	7	14	7	21	9	31
GWWR - Gateway Western Rwy	21	32	18	27	18	24	14	23
IHB - Indiana Harbor Belt RR Co.	13	12	23	29	25	25	20	15
IMRL - I & M Rail Link, LLC	10	14	28	28	21	32	15	20
LI - Long Island Rail Road	2	1	25	8	26	5	30	25
MBTA - Massachusetts Bay Transit Auth.	9	6	10	1	16	7	18	14
MNCW - Metro North Commuter RR Co.	3	2	19	13	24	6	26	17
MRL - Montana Rail Link	6	8	1	12	2	20	2	1
NICD - Northern IN Commuter Trans. Dist	22	23	29	24	29	29	25	1
NIRC - Northeast IL Reg Commuter Rail	7	4	21	5	20	17	27	30
NJTR - New Jersey Transit Rail	1	3	2	6	8	9	7	27
PAL - Paducah & Louisville Rwy Co.	28	30	17	22	6	30	8	29
PATH - Port Authority Trans Hudson	12	9	32	1	32	1	32	22
PCMZ - Penisula Commuter(San Mateo Cnty	20	22	13	1	19	13	19	33
PTRA - Port Terminal RR Association	15	24	6	25	5	19	3	1
SCAX - Southern CA Regional Rail Auth.	14	29	11	10	11	23	10	26
SEPA - Southeastern PA Trans. Authority	5	7	33	11	31	4	33	28
TM - Texas Mexican RR Co.	18	28	9	16	3	26	4	18
TRRA - Terminal RR Assn Of St. Louis	29	31	4	30	1	1	1	1
URR - Union RR Co. (Pittsburgh)	33	21	30	21	28	1	31	1
WC - Wisconsin Central Ltd.	4	5	16	15	14	28	12	16
WE - Wheeling & Lake Erie Rwy Co.	30	20	8	1	4	31	5	1

Rates are ranked from lowest to highest, train miles and employee hours are ranked most to least.

TABLE 2-9 OPERATIONAL DATA, BY RAILROAD, 1998

RR	Total Train Miles		Employee Hours Worked		Freight Train Miles	Passenger Train Miles	Yard Switching Miles	Other Train Miles	Psgrs Carried	Psgr Miles Millions
	Cnt	%	Cnt	%						
ALS	744,608	0.11	657,763	0.13	-	-	744,608	-	-	0
ARR	1,092,477	0.16	1,163,334	0.23	573,853	183,212	334,984	428	577,703	18
ATK	35,414,704	5.19	43,480,510	8.44	-	33,334,000	2,080,704	-	21,246,203	5,324
BAR	1,210,675	0.18	659,301	0.13	1,128,153	4,052	78,470	-	9,759	1
BLE	297,911	0.04	903,774	0.18	282,706	-	15,205	-	-	0
BNSF	162,701,393	23.83	92,323,286	17.93	145,851,927	900,971	15,948,495	-	13,903,269	304
BRC	459,002	0.07	1,318,942	0.26	76,152	-	382,850	-	-	0
CR	46,565,355	6.82	40,950,141	7.95	38,354,686	-	7,823,916	386,753	-	0
CSX	83,447,524	12.22	58,530,312	11.37	69,915,010	165,268	13,367,246	-	-	0
DH	2,084,534	0.31	1,306,386	0.25	1,830,198	-	254,336	-	-	0
DME	672,567	0.10	663,703	0.13	672,567	-	-	-	-	0
DMIR	776,788	0.11	1,427,559	0.28	660,713	-	116,075	-	-	0
DWP	693,531	0.10	423,512	0.08	680,178	-	13,353	-	-	0
EJE	671,733	0.10	1,542,595	0.30	394,315	-	277,418	-	-	0
FEC	3,408,300	0.50	1,813,728	0.35	2,847,477	-	560,823	-	-	0
GRP3	24,980,766	3.66	24,950,018	4.85	14,806,787	3,230,002	6,755,212	188,765	14,767,165	1,074
GRS	1,145,311	0.17	1,866,364	0.36	927,297	-	218,014	-	-	0
GTW	5,376,050	0.79	4,372,190	0.85	3,951,014	-	1,425,036	-	-	0
GWWR	837,678	0.12	487,868	0.09	587,232	-	250,446	-	-	0
IC	9,337,411	1.37	7,510,001	1.46	9,129,245	-	202,184	5,982	-	0
IHB	1,563,131	0.23	1,752,163	0.34	1,563,131	-	-	-	-	0
IMRL	2,091,460	0.31	1,480,992	0.29	1,958,623	5,998	126,839	-	-	0
KCS	8,658,390	1.27	5,446,930	1.06	7,462,026	-	1,196,364	-	-	0
LI	8,153,200	1.19	11,852,840	2.30	-	8,153,200	-	-	77,414,699	2,194
MBTA	3,382,347	0.50	3,596,061	0.70	-	3,382,347	-	-	19,060,416	362
MNCW	7,808,654	1.14	10,577,364	2.05	-	7,808,654	-	-	65,303,454	1,791
MRL	3,843,684	0.56	2,079,250	0.40	3,308,419	75,609	459,656	-	5,780	1
NICD	836,688	0.12	685,143	0.13	113,743	722,945	-	-	3,682,046	107
NIRC	3,422,387	0.50	4,962,048	0.96	-	3,340,692	81,695	-	35,350,679	747
NJTR	8,157,509	1.19	7,294,441	1.42	-	7,679,652	358,894	118,963	53,143,256	1,095
NS	68,179,879	9.98	50,532,897	9.81	57,776,881	-	10,402,998	-	-	0
PAL	617,126	0.09	580,283	0.11	473,353	-	143,773	-	-	0
PATH	1,979,505	0.29	1,932,505	0.38	-	1,721,310	258,195	-	64,992,026	300
PCMZ	1,013,753	0.15	718,629	0.14	79,020	900,233	34,500	-	8,738,696	180
PTRA	1,249,272	0.18	675,717	0.13	-	102,816	1,146,456	-	-	0
SCAX	1,470,109	0.22	590,842	0.11	-	1,470,109	-	-	12,062,651	238
SEPA	5,196,019	0.76	3,523,230	0.68	-	5,196,019	-	-	25,574,374	318
SOO	8,309,227	1.22	6,737,619	1.31	6,354,289	-	1,954,938	-	-	0
TM	1,126,208	0.16	593,705	0.12	937,534	-	188,674	-	-	0
TRRA	567,354	0.08	555,276	0.11	-	-	567,354	-	-	0
UP	157,382,443	23.05	106,261,684	20.64	142,913,853	-	14,468,590	-	24,123,426	543
URR	166,352	0.02	719,139	0.14	-	-	166,352	-	-	0
WC	5,251,967	0.77	4,510,668	0.88	4,030,816	5,804	1,202,442	12,905	1,916	0
WE	549,859	0.08	858,837	0.17	464,890	-	84,969	-	-	0
Tot	682,894,841	100.0	514,869,550	100.0	520,106,088	78,382,893	83,692,064	713,796	439,957,518	14,596

A passenger mile is the movement of a passenger for a distance of one mile.

TABLE 2-10 OPERATIONAL DATA, BY MONTH, 1998

Mon	Total Train Miles		Employee Hours Worked		Freight Train Miles	Passenger Train Miles	Yard Switching Miles	Other Train Miles	Psgrs Carried	Psgr Miles Millions
	Cnt	%	Cnt	%						
Jan	56,796,647	8.32	42,985,020	8.35	43,355,660	6,378,706	7,036,607	25,674	34,015,712	1,094
Feb	52,807,470	7.73	39,798,257	7.73	40,158,312	6,069,847	6,514,404	64,907	32,022,744	999
Mar	57,721,544	8.45	44,775,384	8.70	44,022,263	6,433,155	7,174,926	91,200	35,978,607	1,194
Apr	56,398,437	8.26	43,472,154	8.44	42,907,632	6,438,778	6,991,655	60,372	36,823,376	1,202
May	57,646,225	8.44	43,029,483	8.36	44,029,363	6,557,219	6,999,567	60,076	35,576,815	1,204
Jun	56,406,000	8.26	44,234,809	8.59	42,617,585	6,538,941	7,202,158	47,316	37,904,569	1,251
Jul	56,429,136	8.26	44,618,893	8.67	42,622,449	6,865,084	6,887,476	54,127	38,011,603	1,426
Aug	58,248,113	8.53	43,901,054	8.53	44,536,074	6,620,196	7,045,378	46,465	36,627,548	1,408
Sep	57,073,998	8.36	43,203,818	8.39	43,531,720	6,482,500	6,943,661	116,117	36,307,402	1,223
Oct	60,452,459	8.85	44,438,108	8.63	46,240,062	6,772,432	7,377,446	62,519	43,315,245	1,276
Nov	56,630,174	8.29	40,715,191	7.91	43,318,177	6,541,206	6,723,369	47,422	36,273,346	1,117
Dec	56,284,638	8.24	39,697,379	7.71	42,766,791	6,684,829	6,795,417	37,601	37,100,551	1,204
Tot	682,894,841	100.0	514,869,550	100.0	520,106,088	78,382,893	83,692,064	713,796	439,957,518	14,596

TABLE 2-11 SUMMARY OF ACCIDENTS/INCIDENTS BY STATE, 1998

	Total			Train Accidents			HRC Incidents			Other Incidents		
	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf	Cnt	Fatal	Nonf
AL	319	25	156	51	-	1	145	11	46	123	14	109
AK	91	1	83	5	-	-	4	-	2	82	1	81
AZ	178	19	121	19	-	-	35	4	9	124	15	112
AR	399	36	261	62	-	3	116	24	45	221	12	213
CA	1,133	114	795	155	-	14	190	32	64	788	82	717
CO	223	12	134	63	-	-	32	4	13	128	8	121
CT	164	4	130	27	-	-	10	1	4	127	3	126
DE	50	1	42	6	-	1	5	-	3	39	1	38
DC	82	1	75	7	-	-	1	-	-	74	1	75
FL	399	30	276	61	-	3	75	7	30	263	23	243
GA	406	31	221	65	-	2	140	13	35	201	18	184
ID	131	9	83	32	-	1	27	4	14	72	5	68
IL	1,314	70	942	222	-	5	199	30	67	893	40	870
IN	537	31	334	94	1	7	194	25	80	249	5	247
IA	367	6	198	102	-	2	104	3	30	161	3	166
KS	343	16	220	77	-	1	71	9	30	195	7	189
KY	290	11	173	60	-	-	73	5	20	157	6	153
LA	457	33	267	73	-	-	214	25	101	170	8	166
ME	94	2	77	10	-	-	8	-	3	76	2	74
MD	129	4	94	19	-	-	15	-	2	95	4	92
MA	173	5	155	12	-	1	5	1	-	156	4	154
MI	425	16	317	51	-	4	104	11	46	270	5	267
MN	456	22	314	68	-	-	116	14	47	272	8	267
MS	242	28	127	42	1	-	133	24	63	67	3	64
MO	375	34	236	65	-	2	87	14	25	223	20	209
MT	139	7	79	41	-	-	27	4	11	71	3	68
NE	379	15	263	83	-	2	59	11	19	237	4	242
NV	49	6	34	10	-	1	4	1	2	35	5	31
NH	19	1	14	2	-	-	2	-	-	15	1	14
NJ	384	31	325	30	-	4	17	5	4	337	26	317
NM	136	12	105	22	-	5	17	5	6	97	7	94
NY	1,351	29	1,210	113	-	7	29	2	6	1,209	27	1,197
NC	257	40	145	27	-	-	109	15	48	121	25	97
ND	116	8	68	30	-	-	23	6	7	63	2	61
OH	575	30	368	92	-	5	154	15	45	329	15	318
OK	218	19	135	55	-	2	66	12	39	97	7	94
OR	267	22	157	62	-	3	44	5	9	161	17	145
PA	911	17	743	124	-	11	63	1	21	724	16	711
RI	13	2	11	0	-	-	1	-	-	12	2	11
SC	186	23	98	26	-	-	78	6	32	82	17	66
SD	72	-	43	21	-	1	15	-	6	36	0	36
TN	292	25	141	65	-	1	104	14	26	123	11	114
TX	1,241	97	795	288	2	29	322	45	158	631	50	608
UT	140	6	84	41	-	3	24	5	6	75	1	75
VT	36	1	25	6	-	-	4	-	-	26	1	25
VA	247	13	160	46	-	-	51	2	17	150	11	143
WA	309	21	211	41	-	-	59	6	5	209	15	206
WV	129	7	83	25	-	1	23	2	5	81	5	77
WI	342	11	237	47	-	-	105	7	48	190	4	189
WY	132	4	94	44	-	7	5	1	4	83	3	83
ALL	16,717	1,008	11,459	2,789	4	129	3,508	431	1,303	10,420	573	10,027

Highway-Rail counts are excluded from other categories

CHAPTER 3

CASUALTY REPORTING

Any event connected with the operation of a railroad that results in one or more of the following consequences must be reported on Form FRA F 6180.55a:

1. Death of a person within 365 calendar days of the accident/ incident;

2. Injury to a person, other than a railroad employee, that requires medical treatment;

3. Injury to a railroad employee that requires medical treatment or results in restriction of work for one or more work days, the loss of one or more work days, termination of employment, transfer to another job, or loss of consciousness; or

4. Any occupational illness of a railroad employee.

A railroad need not report the following:

1. Casualties at highway-rail crossing sites that do not involve the presence or operation of on-track rail equipment, or the presence of railroad employees engaged in the operation of a railroad;

2. Casualties in or about living quarters that are not on the railroad premises and that do not arise from the operation of a railroad;

3. Suicides, as determined by a coroner or other public authority;

4. Attempted suicides.

The distinction between medical treatment and first aid depends not only on the treatment provided, but also on the severity of the injury being treated. First aid is:

1. Limited to one-time treatment and subsequent observation; and

2. Involves treatment of only minor injuries, not emergency treatment of serious injuries. An injury is not minor if:

a. It must be treated only by a physician or licensed medical personnel;

b. It impairs bodily function (i.e., normal use of senses, limbs, etc.);

c. It results in damage to the physical structure of a nonsuperficial nature (e.g. fractures); or

d. It involves complications requiring follow-up medical treatment.

One-time treatment of an injury should not be used as the sole basis for classifying a treatment or procedure as first aid. Medical treatment can, and often is, given on a one-time basis, e.g., the suturing of a wound. The procedures used and the skills required to treat an injury, as well as the seriousness of the injury, are all factors that must be considered when determining the type of treatment rendered.

Likewise, medical treatment cannot be determined solely on the basis of who treats a case. First aid treatment can be given by a physician, and medical treatment, by someone other than a physician.

The following are examples of typical medical treatment that are reportable:

Closure of a wound with suture (stitch), staple, Steristrip, butterfly, or the like.

The application of a cast or other professional means of immobilizing an injured part of the body, regardless of how long the cast, sling, splint, or the like, is actually worn.

Injection. Any application of medication through the use of a syringe, except a tetanus shot.

Bruise. The treatment of a bruise by drainage of blood.

Debridement. Surgical debridement, that is, the removal of dead or damaged skin.

Treatment of a burn. The treatment of a second-or third-degree burn is almost always medical treatment if the size of the affected area cannot be covered with a quarter.

Prescription medication. Any prescription medication prescribed or provided for a condition that is intended for subsequent use. A single dose taken orally or applied

externally on the initial visit is considered to be first aid and is not reportable. (See definition of prescription medication.)

Eye Injury. Removal of any object embedded in the eye, or the application of a patch or a bandage.

X-Ray. An X-Ray that is positive.

Whirlpool treatment. Any injury that requires more than one whirlpool treatment.

Multiple treatments. Any injury that results in additional treatment by a physician or other medical professional on a second or subsequent visit. This does not include a routine examination of the progress of an injury or instances where bandages or other dressings are replaced.

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CHAPTER 3

CASUALTY REPORTING

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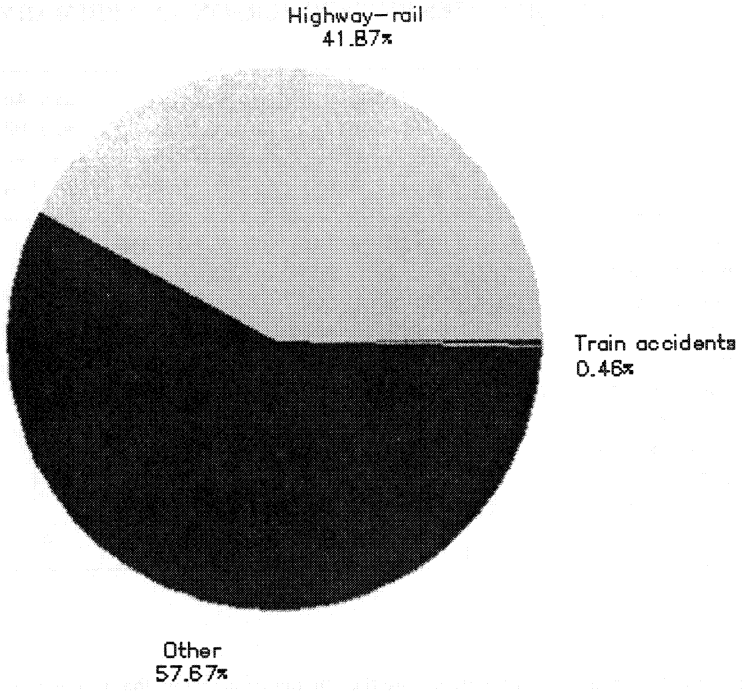
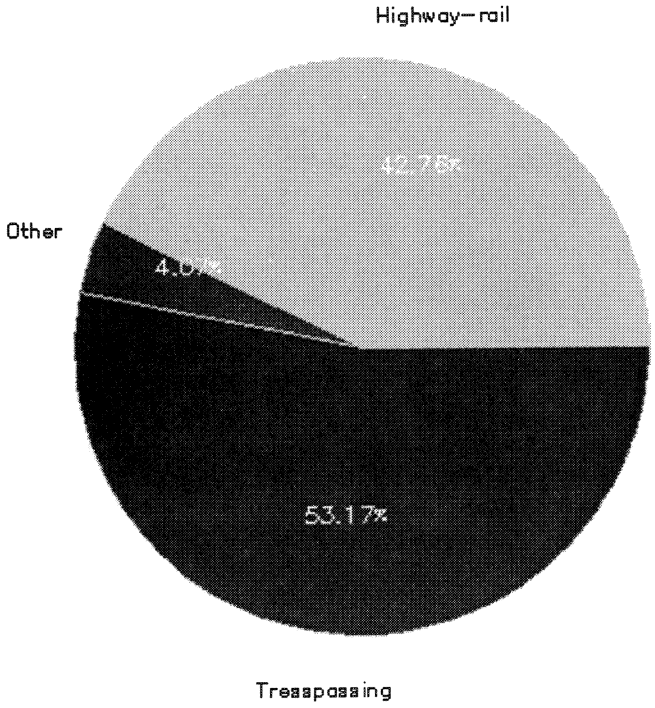
Tables

3–1 FATAL ACCIDENTS/INCIDENTS, 1998



3–2 WHERE FATALITIES OCCURRED, 1998



3-1 CASUALTIES BY TYPE PERSON AND PRIMARY EVENT, 1998

	Total Incidents		Casualties		Train Accs w/o HRC		HRC Incs		Other Events	
	Fatal	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf
A - Worker on duty(rr employee)	26	8,145	27	8,398	3	112	4	122	20	8,164
B - Employee not on duty	2	200	2	219	.	.	.	3	2	216
C - Passenger on train	2	503	4	535	.	11	2	19	2	505
D - Nontrespasser	269	925	324	1,201	.	.	317	985	7	216
E - Trespasser	620	619	644	677	1	4	108	164	535	509
F - Worker on duty(contractor)	2	232	2	237	.	2	.	1	2	234
G - Contractor(other)	3	141	3	143	.	.	.	.	3	143
H - Worker on duty(volunteer)	.	9	.	11	.	.	.	.	.	11
I - Volunteer(other)	.	2	.	3	.	.	.	1	.	2
J - Nontrespasser, off rr property	2	26	2	35	.	.	.	8	2	27
-- Total..	926	10,802	1,008	11,459	4	129	431	1,303	573	10,027

The counts under colum titled 'Total Incidents' are the number of incidents that resulted in a fatality or a nonfatal condition.

HRC = highway-rail crossing. Ftl = fatality. Nonf = nofatal injury or occupational illness of a railroad employee. W/O = without. Incs = incidents.

TABLE 3-2 FATALITIES BY TYPE PERSON AND RAILROAD, 1998

	Total	%	A	B	C	D	E	F	G	J
ARR	1	0.1	-	-	-	-	1	-	-	-
ATK	120	11.9	2	-	1	30	87	-	-	-
BAR	1	0.1	1	-	-	-	-	-	-	-
BNSF	209	20.7	3	1	-	75	127	1	1	1
BRC	2	0.2	2	-	-	-	-	-	-	-
CR	37	3.7	-	-	-	10	27	-	-	-
CSX	125	12.4	5	-	-	40	78	1	1	-
DWP	2	0.2	-	-	-	1	1	-	-	-
FEC	10	1.0	-	-	-	-	10	-	-	-
GRP3	15	1.5	2	-	-	7	6	-	-	-
GRS	2	0.2	-	-	-	-	2	-	-	-
GTW	4	0.4	-	-	-	4	-	-	-	-
GWWR	2	0.2	-	-	-	-	2	-	-	-
IC	18	1.8	3	-	-	12	3	-	-	-
IMRL	2	0.2	-	-	-	2	-	-	-	-
KCS	29	2.9	-	-	-	25	4	-	-	-
LI	10	1.0	-	1	1	-	8	-	-	-
MBTA	2	0.2	-	-	-	-	2	-	-	-
MNCW	4	0.4	-	-	-	-	4	-	-	-
NICD	3	0.3	1	-	2	-	-	-	-	-
NIRC	6	0.6	-	-	-	-	5	-	-	1
NJTR	24	2.4	1	-	-	-	23	-	-	-
NS	112	11.1	3	-	-	35	73	-	1	-
PAL	1	0.1	-	-	-	-	1	-	-	-
PATH	1	0.1	-	-	-	1	-	-	-	-
PCMZ	3	0.3	-	-	-	-	3	-	-	-
PTRA	1	0.1	-	-	-	-	1	-	-	-
SCAX	6	0.6	-	-	-	-	6	-	-	-
SEPA	3	0.3	-	-	-	-	3	-	-	-
SOO	6	0.6	-	-	-	4	2	-	-	-
TM	1	0.1	-	-	-	1	-	-	-	-
UP	240	23.8	4	-	-	72	164	-	-	-
WC	6	0.6	-	-	-	5	1	-	-	-
ALL	1,008	100	27	2	4	324	644	2	3	2

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

TABLE 3-3 FATALITIES BY TYPE PERSON AND STATE, 1998

	Total	A	B	C	D	E	F	G	J
AK = Alaska	1	-	-	-	-	1	-	-	-
AL = Alabama	25	1	-	-	9	15	-	-	-
AR = Arkansas	36	-	-	-	22	14	-	-	-
AZ = Arizona	19	-	-	-	2	17	-	-	-
CA = California	114	1	1	1	7	104	-	-	-
CO = Colorado	12	-	-	-	3	9	-	-	-
CT = Connecticut	4	-	-	-	1	3	-	-	-
DC = Dist Of Columbia	1	-	-	-	-	1	-	-	-
DE = Delaware	1	-	-	-	-	1	-	-	-
FL = Florida	30	-	-	-	2	28	-	-	-
GA = Georgia	31	3	-	-	5	23	-	-	-
IA = Iowa	6	-	-	-	3	3	-	-	-
ID = Idaho	9	-	-	-	5	4	-	-	-
IL = Illinois	70	5	-	-	21	43	-	-	1
IN = Indiana	31	2	-	2	17	10	-	-	-
KS = Kansas	16	-	-	-	7	9	-	-	-
KY = Kentucky	11	1	-	-	4	6	-	-	-
LA = Louisiana	33	1	-	-	24	8	-	-	-
MA = Massachusetts	5	-	-	-	-	5	-	-	-
MD = Maryland	4	-	-	-	-	4	-	-	-
ME = Maine	2	1	-	-	-	1	-	-	-
MI = Michigan	16	-	-	-	11	5	-	-	-
MN = Minnesota	22	-	-	-	10	12	-	-	-
MO = Missouri	34	-	-	-	13	20	-	1	-
MS = Mississippi	28	1	-	-	20	7	-	-	-
MT = Montana	7	-	-	-	4	3	-	-	-
NC = North Carolina	40	1	-	-	10	29	-	-	-
ND = North Dakota	8	-	-	-	7	1	-	-	-
NE = Nebraska	15	2	-	-	7	6	-	-	-
NH = New Hampshire	1	-	-	-	-	1	-	-	-
NJ = New Jersey	31	2	-	-	1	28	-	-	-
NM = New Mexico	12	-	-	-	4	8	-	-	-
NV = Nevada	6	-	-	-	1	5	-	-	-
NY = New York	29	-	1	1	-	27	-	-	-
OH = Ohio	30	1	-	-	12	16	-	1	-
OK = Oklahoma	19	-	-	-	10	9	-	-	-
OR = Oregon	22	1	-	-	5	16	-	-	-
PA = Pennsylvania	17	-	-	-	1	16	-	-	-
RI = Rhode Island	2	-	-	-	-	2	-	-	-
SC = South Carolina	23	-	-	-	5	18	-	-	-
TN = Tennessee	25	-	-	-	13	11	-	1	-
TX = Texas	97	3	-	-	39	55	-	-	-
UT = Utah	6	-	-	-	4	2	-	-	-
VA = Virginia	13	-	-	-	2	10	1	-	-
VT = Vermont	1	-	-	-	-	1	-	-	-
WA = Washington	21	-	-	-	5	15	-	-	1
WI = Wisconsin	11	-	-	-	6	5	-	-	-
WV = West Virginia	7	-	-	-	2	5	-	-	-
WY = Wyoming	4	1	-	-	-	2	1	-	-
ALL	1,008	27	2	4	324	644	2	3	2

TABLE 3-4 NONFATAL CONDITIONS BY TYPE PERSON AND RAILROAD, 1998

	Total	%	A	B	C	D	E	F	G	H	I	J
ALS	17	0.1	16	-	-	1	-	-	-	-	-	-
ARR	59	0.5	54	-	3	-	2	-	-	-	-	-
ATK	1,180	10.3	840	33	182	64	55	1	2	-	-	3
BAR	47	0.4	47	-	-	-	-	-	-	-	-	-
BLE	21	0.2	16	-	-	-	1	4	-	-	-	-
BNSF	1,412	12.3	1,011	48	8	166	88	15	75	1	-	-
BRC	15	0.1	15	-	-	-	-	-	-	-	-	-
CR	507	4.4	419	12	-	31	36	5	1	-	-	3
CSX	953	8.3	713	21	-	123	77	18	1	-	-	-
DH	30	0.3	28	-	-	-	2	-	-	-	-	-
DME	25	0.2	23	-	-	-	2	-	-	-	-	-
DMIR	43	0.4	42	-	-	-	1	-	-	-	-	-
DWP	6	0.1	5	-	-	1	-	-	-	-	-	-
EJE	48	0.4	45	2	-	1	-	-	-	-	-	-
FEC	62	0.5	29	-	-	5	22	-	6	-	-	-
GRP3	1,210	10.6	1,001	5	25	82	32	43	4	10	2	6
GRS	26	0.2	21	-	-	-	5	-	-	-	-	-
GTW	162	1.4	153	-	-	9	-	-	-	-	-	-
GWWR	13	0.1	12	-	-	-	1	-	-	-	-	-
IC	165	1.4	102	-	-	50	6	-	7	-	-	-
IHB	57	0.5	53	1	-	-	3	-	-	-	-	-
IMRL	65	0.6	40	-	-	23	2	-	-	-	-	-
KCS	198	1.7	95	-	-	84	12	-	7	-	-	-
LI	569	5.0	408	10	57	54	13	10	3	-	-	14
MBTA	94	0.8	85	5	2	-	1	1	-	-	-	-
MNCW	389	3.4	319	6	10	10	2	42	-	-	-	-
MRL	18	0.2	12	1	-	5	-	-	-	-	-	-
NICD	34	0.3	27	-	1	5	-	-	-	-	1	-
NIRC	206	1.8	127	3	49	6	15	1	1	-	-	4
NJTR	94	0.8	84	2	4	-	4	-	-	-	-	-
NS	563	4.9	267	19	-	113	83	61	20	-	-	-
PAL	8	0.1	6	-	-	-	2	-	-	-	-	-
PATH	164	1.4	101	-	16	37	2	1	7	-	-	-
PCMZ	26	0.2	18	-	1	-	7	-	-	-	-	-
PTRA	8	0.1	6	-	-	2	-	-	-	-	-	-
SCAX	16	0.1	8	-	2	-	1	4	1	-	-	-
SEPA	374	3.3	181	-	142	35	12	-	-	-	-	4
SOO	200	1.7	167	5	-	20	8	-	-	-	-	-
TM	14	0.1	4	-	-	9	1	-	-	-	-	-
TRRA	2	0.0	1	-	-	-	-	-	1	-	-	-
UP	2,192	19.1	1,676	43	33	229	174	30	7	-	-	-
URR	30	0.3	28	2	-	-	-	-	-	-	-	-
WC	129	1.1	86	1	-	36	4	1	-	-	-	1
WE	8	0.1	7	-	-	-	1	-	-	-	-	-
ALL	11459	100	8,398	219	535	1,201	677	237	143	11	3	35

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

TABLE 3-5 NONFATAL CONDITIONS BY TYPE PERSON AND STATE, 1998

	Total	A	B	C	D	E	F	G	H	I	J
AK = Alaska	83	72	-	7	-	3	1	-	-	-	-
AL = Alabama	156	97	4	2	41	8	2	2	-	-	-
AR = Arkansas	261	206	3	-	43	7	1	1	-	-	-
AZ = Arizona	121	90	4	3	5	14	2	3	-	-	-
CA = California	795	607	10	38	38	75	7	19	-	-	1
CO = Colorado	134	103	2	5	8	13	-	3	-	-	-
CT = Connecticut	130	119	1	5	2	2	1	-	-	-	-
DC = Dist Of Columbia	75	69	3	-	-	1	-	2	-	-	-
DE = Delaware	42	32	2	3	4	1	-	-	-	-	-
FL = Florida	276	170	7	19	16	48	10	6	-	-	-
GA = Georgia	221	141	3	9	22	26	13	7	-	-	-
IA = Iowa	198	151	8	1	26	6	2	2	1	-	1
ID = Idaho	83	62	1	-	12	5	1	2	-	-	-
IL = Illinois	942	674	13	116	63	37	15	19	1	-	4
IN = Indiana	334	220	3	5	61	27	17	-	-	1	-
KS = Kansas	220	155	8	3	28	10	10	5	-	-	1
KY = Kentucky	173	131	6	-	15	15	2	3	-	1	-
LA = Louisiana	267	144	2	6	90	12	12	1	-	-	-
MA = Massachusetts	155	138	6	1	-	8	1	-	-	-	1
MD = Maryland	94	82	1	2	2	7	-	-	-	-	-
ME = Maine	77	73	-	-	-	3	1	-	-	-	-
MI = Michigan	317	252	2	2	40	10	11	-	-	-	-
MN = Minnesota	314	244	10	2	45	11	-	1	1	-	-
MO = Missouri	236	181	5	8	25	8	3	6	-	-	-
MS = Mississippi	127	59	-	3	52	8	1	4	-	-	-
MT = Montana	79	58	3	2	12	-	1	3	-	-	-
NC = North Carolina	145	74	3	11	26	24	1	4	-	-	2
ND = North Dakota	68	56	-	-	8	4	-	-	-	-	-
NE = Nebraska	263	222	15	1	9	11	3	2	-	-	-
NH = New Hampshire	14	6	-	-	-	6	2	-	-	-	-
NJ = New Jersey	325	259	4	22	26	5	2	5	-	-	2
NM = New Mexico	105	77	4	4	4	10	5	1	-	-	-
NV = Nevada	34	29	-	-	1	4	-	-	-	-	-
NY = New York	1,210	931	30	72	77	26	55	5	-	-	14
OH = Ohio	368	285	8	1	34	26	8	3	-	-	3
OK = Oklahoma	135	80	7	-	36	7	3	2	-	-	-
OR = Oregon	157	129	4	3	8	10	2	1	-	-	-
PA = Pennsylvania	743	485	10	151	55	29	8	1	-	-	4
RI = Rhode Island	11	10	-	-	-	1	-	-	-	-	-
SC = South Carolina	98	48	1	6	29	11	3	-	-	-	-
SD = South Dakota	43	36	-	-	4	2	-	1	-	-	-
TN = Tennessee	141	98	3	1	25	7	3	4	-	-	-
TX = Texas	795	533	12	4	130	89	13	13	-	-	1
UT = Utah	84	75	-	-	6	2	-	1	-	-	-
VA = Virginia	160	114	3	13	10	9	9	2	-	-	-
VT = Vermont	25	23	-	-	-	2	-	-	-	-	-
WA = Washington	211	182	2	3	9	7	-	8	-	-	-
WI = Wisconsin	237	167	2	1	44	12	1	-	8	1	1
WV = West Virginia	83	67	1	-	5	6	4	-	-	-	-
WY = Wyoming	94	82	3	-	5	2	1	1	-	-	-
ALL	11459	8,398	219	535	1,201	677	237	143	11	3	35

TABLE 3-6 REPORTABLE CONDITIONS, ALL TYPE PERSONS, 1998

Condition	Cnt	%	Type of Person *									
			A	B	C	D	E	F	G	H	I	J
Bruise/contusion	1,902	15.3	1,243	39	174	267	108	48	13	2	-	8
Occ. Illness	179	1.4	171	3	-	2	-	1	2	-	-	-
Sprain/Str., other	82	0.7	42	2	11	17	8	1	-	-	-	1
Sprain/Str.,arm/hand	423	3.4	390	4	12	4	1	8	4	-	-	-
Sprain/Str.,leg/foot	1,226	9.8	1,062	33	58	42	3	12	14	1	-	1
Sprain/Str.,head/face	344	2.8	265	17	24	20	7	4	3	-	-	4
Sprain/Str.,torso	2,364	19.0	2,186	37	41	34	5	32	22	3	-	4
Cut/abrasion	1,541	12.4	1,019	20	90	210	110	54	29	4	1	4
Puncture wound	187	1.5	168	7	1	1	1	5	4	-	-	-
Electric shock/burn	54	0.4	43	-	-	1	8	1	1	-	-	-
Other burn	91	0.7	78	-	3	1	-	6	3	-	-	-
Dislocation	99	0.8	83	2	1	7	2	3	1	-	-	-
Fracture,other	6	0.0	-	-	-	4	2	-	-	-	-	-
Fracture,arm/hand	464	3.7	339	8	25	38	27	14	13	-	-	-
Fracture,leg/foot	364	2.9	190	15	25	50	56	12	15	-	-	1
Fracture,head/face	70	0.6	25	-	4	20	17	3	1	-	-	-
Fracture,torso	189	1.5	81	3	18	51	28	4	2	-	1	1
Fracture,multiple	22	0.2	3	-	1	13	5	-	-	-	-	-
Dental related	33	0.3	25	-	1	3	1	2	1	-	-	-
Amputation,arm/hand	62	0.5	35	-	-	-	20	3	4	-	-	-
Amputation,leg/foot	119	1.0	17	-	-	3	97	1	-	-	-	1
Amputation,head/face	1	0.0	-	-	-	1	-	-	-	-	-	-
Amputation,other	3	0.0	-	-	-	-	3	-	-	-	-	-
Fatality	1,008	8.1	27	2	4	324	644	2	3	-	-	2
Object in eye	259	2.1	244	8	-	1	-	5	-	1	-	-
Hernia	84	0.7	84	-	-	-	-	-	-	-	-	-
Concussion	88	0.7	40	2	-	25	18	2	1	-	-	-
Nervous shock	3	0.0	1	-	-	1	1	-	-	-	-	-
Internal injury	70	0.6	12	-	-	37	17	2	2	-	-	-
Loss of eye	2	0.0	1	-	-	1	-	-	-	-	-	-
Skin reaction-chemical	37	0.3	32	-	1	-	-	3	1	-	-	-
One-time exp. to noise	19	0.2	19	-	-	-	-	-	-	-	-	-
All other injuries	957	7.7	390	18	45	347	132	11	7	-	1	6
One-time exp.-fumes	115	0.9	110	1	-	-	-	-	-	-	-	4
ALL	12,467	100	8,425	221	539	1,525	1,321	239	146	11	3	37

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

TABLE 3-7 TOTAL CASUALTIES BY AGE OF INDIVIDUAL, 1998 AND TYPE OF PERSON

Age		Total		Type of Person *									
		Cnt	%	A	B	C	D	E	F	G	H	I	J
Ftl	?????	122	1.0	-	-	1	25	96	-	-	-	-	-
	1-5	11	0.1	-	-	-	7	4	-	-	-	-	-
	6-10	16	0.1	-	-	-	10	6	-	-	-	-	-
	11-15	26	0.2	-	-	-	6	20	-	-	-	-	-
	16-20	106	0.9	1	-	-	41	64	-	-	-	-	-
	21-25	117	0.9	1	-	-	27	89	-	-	-	-	-
	26-30	105	0.8	2	1	-	32	69	-	1	-	-	-
	31-35	77	0.6	1	-	-	24	52	-	-	-	-	-
	36-40	110	0.9	1	-	-	31	77	-	1	-	-	-
	41-45	76	0.6	8	1	-	19	47	1	-	-	-	-
	46-50	56	0.4	3	-	1	16	36	-	-	-	-	-
	51-55	37	0.3	5	-	1	12	19	-	-	-	-	-
	56-60	37	0.3	5	-	1	12	18	1	-	-	-	-
	61-65	25	0.2	-	-	-	14	9	-	1	-	-	1
	66-70	22	0.2	-	-	-	13	8	-	-	-	-	1
	Other	65	0.5	-	-	-	35	30	-	-	-	-	-
	Total	1,008	8.1	27	2	4	324	644	2	3	-	-	2
Nonf	?????	363	2.9	4	-	108	112	96	26	6	-	-	11
	1-5	51	0.4	-	-	9	35	6	-	-	-	-	1
	6-10	51	0.4	-	-	7	31	11	-	-	-	-	2
	11-15	71	0.6	-	-	5	27	38	-	-	-	-	1
	16-20	348	2.8	91	5	10	139	73	19	7	1	-	3
	21-25	750	6.0	444	10	11	147	83	33	21	1	-	-
	26-30	1,129	9.1	820	15	35	120	78	28	27	2	-	4
	31-35	1,108	8.9	808	25	44	107	58	32	27	4	-	3
	36-40	1,381	11.1	1,073	24	39	99	81	46	19	-	-	-
	41-45	1,804	14.5	1,558	41	24	84	46	24	23	1	1	2
	46-50	1,812	14.5	1,603	44	43	62	34	15	6	1	-	4
	51-55	1,266	10.2	1,096	32	43	62	20	8	3	-	1	1
	56-60	800	6.4	676	15	34	48	19	3	4	-	-	1
	61-65	291	2.3	210	7	25	43	5	1	-	-	-	-
	66-70	93	0.7	13	-	26	40	12	2	-	-	-	-
	Other	141	1.1	2	1	72	45	17	-	-	1	1	2
	Total	11,459	91.9	8,398	219	535	1,201	677	237	143	11	3	35
Total		12,467	100.0	8,425	221	539	1,525	1,321	239	146	11	3	37

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

TABLE 3-8 TOTAL CASUALTIES BY MONTH AND TYPE PERSON, 1998

Condition		Total	Type of Person *									
		Cnt	A	B	C	D	E	F	G	H	I	J
Ftl	Jan	69	1	-	-	25	43	-	-	-	-	-
	Feb	66	4	-	-	18	44	-	-	-	-	-
	Mar	75	2	1	1	36	35	-	-	-	-	-
	Apr	67	-	-	-	21	45	1	-	-	-	-
	May	107	3	-	-	30	72	1	-	-	-	1
	Jun	98	3	-	2	31	62	-	-	-	-	-
	Jul	115	1	1	-	35	77	-	-	-	-	1
	Aug	76	1	-	-	26	49	-	-	-	-	-
	Sep	92	-	-	1	33	58	-	-	-	-	-
	Oct	95	7	-	-	22	65	-	1	-	-	-
	Nov	84	3	-	-	25	54	-	2	-	-	-
	Dec	64	2	-	-	22	40	-	-	-	-	-
	Total	1,008	27	2	4	324	644	2	3	-	-	2
Nonf	Jan	896	629	22	46	125	50	14	9	-	-	1
	Feb	782	565	22	29	81	48	21	16	-	-	-
	Mar	954	699	24	44	108	47	21	11	-	-	-
	Apr	905	686	8	47	91	44	19	10	-	-	-
	May	955	695	18	49	97	58	17	14	-	-	7
	Jun	1,044	754	16	55	124	53	23	12	1	-	6
	Jul	1,122	796	26	64	115	67	34	15	1	-	4
	Aug	1,055	775	18	46	101	72	21	12	3	1	6
	Sep	1,026	761	18	36	110	67	24	8	-	1	1
	Oct	962	722	26	37	79	63	17	9	3	-	6
	Nov	852	649	11	42	83	43	9	10	3	1	1
	Dec	906	667	10	40	87	65	17	17	-	-	3
	Total	11,459	8,398	219	535	1,201	677	237	143	11	3	35
Total		12,467	8,425	221	539	1,525	1,321	239	146	11	3	37

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

TABLE 3-9 TOTAL CASUALTIES BY TIME OF DAY, 1998 AND TYPE OF PERSON

Time		Total		Type of Person *									
		Cnt	%	A	B	C	D	E	F	G	H	I	J
AM	1	328	2.6	229	3	2	18	72	2	2	-	-	-
	2	326	2.6	212	1	1	36	72	1	3	-	-	-
	3	295	2.4	191	2	6	29	65	1	1	-	-	-
	4	292	2.3	201	13	5	17	44	7	4	-	1	-
	5	237	1.9	160	13	2	19	35	4	3	-	-	1
	6	311	2.5	188	26	20	37	27	4	5	1	-	3
	7	545	4.4	332	28	62	62	48	9	4	-	-	-
	8	786	6.3	524	6	58	107	65	15	8	2	-	1
	9	873	7.0	637	6	44	94	50	23	14	4	-	1
	10	1,006	8.1	795	9	23	81	55	27	12	1	-	3
	11	872	7.0	640	8	27	106	52	23	9	1	1	5
	12	349	2.8	226	1	7	33	74	4	4	-	-	-
	Total	6,220	49.9	4,335	116	257	639	659	120	69	9	2	14
PM	1	756	6.1	545	5	23	101	49	21	7	1	1	3
	2	724	5.8	537	9	16	85	39	19	14	1	-	4
	3	640	5.1	438	14	25	83	47	13	17	-	-	3
	4	606	4.9	364	14	44	113	45	18	6	-	-	2
	5	584	4.7	353	5	45	87	72	11	11	-	-	-
	6	476	3.8	265	6	27	103	61	6	3	-	-	5
	7	447	3.6	280	6	27	63	61	6	4	-	-	-
	8	377	3.0	256	10	19	36	50	5	1	-	-	-
	9	349	2.8	239	4	13	31	57	3	2	-	-	-
	10	313	2.5	176	15	12	41	63	2	4	-	-	-
	11	310	2.5	181	5	8	39	72	4	1	-	-	-
	12	665	5.3	456	12	23	104	46	11	7	-	-	6
	Total	6,247	50.1	4,090	105	282	886	662	119	77	2	1	23
Total		12,467	100	8,425	221	539	1,525	1,321	239	146	11	3	37

A - Worker on duty(rr employee)
B - Employee not on duty
C - Passenger on train
D - Nontrespasser
E - Trespasser
F - Worker on duty(contractor)
G - Contractor(other)
H - Worker on duty(volunteer)
I - Volunteer(other)
J - Nontrespasser, off rr property

CHAPTER 4

EMPLOYEE ON DUTY CASUALTIES

The work environment is the physical location, equipment, materials processed or used, and activities of a railroad employee associated with his or her work, whether on or off the railroad's property. There are no stated exclusions of place or circumstance. All activities of a Worker on Duty--Employee (Class A) while in the work environment are presumed to be work-related for accident/incident reporting purposes.

An employee is in the work environment:

1. While engaged in work activity or apprenticeship/vocational training required by the employer.

2. While on break, in the rest room, or in storage areas when located on the employer's premises.

3. While performing work for pay or compensation at home, pursuant to the employer's instructions, if the injury or illness is directly related to the performance of work rather than the general home environment or setting.

4. While traveling on business, including to and from customer contacts. Employees in travel status (i.e., traveling on company business) should be considered engaged in work-related activities during all of their time spent in the "interest of their company". This includes, but is not limited to, travel to and from customer contacts, conducting job tasks, and entertaining or being entertained for the purpose of transacting, discussing, or promoting business.

5. While employee is engaged in work activity where a vehicle is considered the work environment (e.g., truck, taxi).

6. While at conferences where attendance is expected or required by the employer.

7. Some workplaces provide living quarters for employees on their premises. In these workplaces, injuries or illnesses are presumed to be work-related if the employee is on-duty or engaged in a work activity. The injury or illness is also considered work-related if the employee was harmed as a result of a serious workplace accident such as a chemical release, fire, explosion, derailment, collision, or building collapse. All other injuries and illnesses occurring during off-duty hours while in living quarters are considered non-work-related. The worker should be classified as an

"employee not on duty" in these cases if a reportable condition occurs.

Employees present in the work environment, but for reasons unconnected with their employment, generally are not reportable as Worker on Duty--Employee (Class A) should they be injured. These individuals are more appropriately classified as employees not on duty, nontrespassers on railroad property, passengers on train, etc., and if hurt should be identified as such. The following are examples:

1. Injuries or illnesses that occur to employees present at their employer's establishment as a member of the general public rather than as a worker.

2. Injuries or illnesses that are solely the result of employees doing personal tasks (unrelated to their employment) at the establishment outside of normal working hours.

3. Injuries or illnesses occurring on company parking lots and access roads while employees are arriving at or leaving work.

4. An injury or illness solely associated with participation in voluntary community or civic projects, e.g., Operation Lifesaver presentations; unless the employee was under pay status.

Injury/Illness Distinction. The distinction between occupational illnesses and injuries is based primarily on the event or exposure that precipitated the employee's condition. Injuries are generally the result of instantaneous events; for example, an employee is struck by an object and sustains a cut or a bruise. Illnesses, on the other hand, are usually the result of an exposure that occurs over time; such as hearing impairment caused by working in a noisy environment. Exceptions to this general rule are muscular sprains, strains, or soreness, occurring after work activity for which no single movement or event can be isolated as the primary causal factor. Physical conditions of this type are to be recorded as injuries when the condition is attributable to activity of limited duration--typically no more than a single work shift.

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CHAPTER 4

EMPLOYEE ON DUTY CASUALTIES

Figures **Page**

Tables

4—1 EMPLOYEE ON DUTY CASES

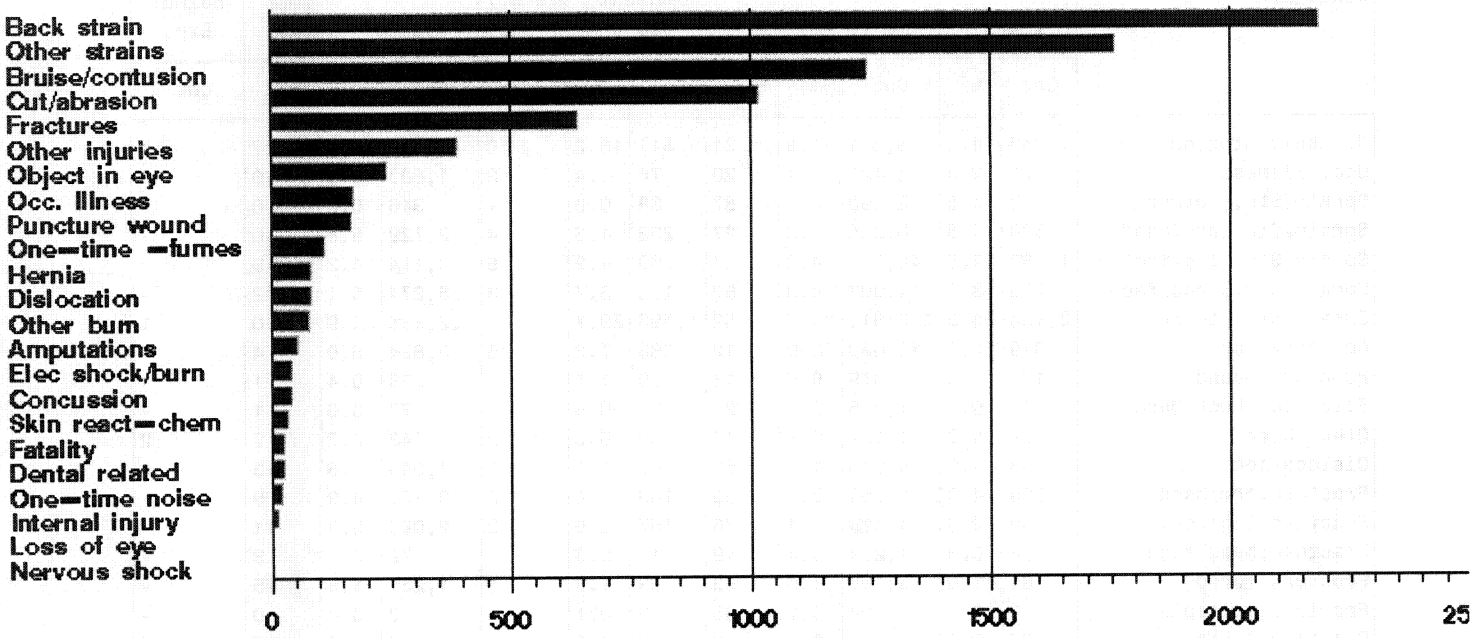

TABLE 4-1 REPORTABLE CONDITIONS TO RR EMPLOYEES ON DUTY, 1998

Condition	Total		Days Absent			Absent Cases		Term./ Trans.	Days Restricted			Hazmat Exp.
	Cnt	%	Cnt	%	Avg.	Cnt	%	Cnt	Cnt	%	Avg.	Cnt
Bruise/contusion	1,243	14.8	38,351	11.8	31	817	15.2	10	8,472	13.2	7	1
Occ. Illness	171	2.0	3,421	1.1	20	74	1.4	2	1,603	2.5	9	2
Sprain/Str., other	42	0.5	2,393	0.7	57	33	0.6	-	346	0.5	8	-
Sprain/Str.,arm/hand	390	4.6	10,685	3.3	27	232	4.3	4	3,729	5.8	10	-
Sprain/Str.,leg/foot	1,062	12.6	46,324	14.2	44	763	14.2	6	9,114	14.2	9	-
Sprain/Str.,head/face	265	3.1	14,067	4.3	53	196	3.7	3	3,274	5.1	12	-
Sprain/Str.,torso	2,186	25.9	112,911	34.7	52	1,593	29.7	18	22,355	34.9	10	1
Cut/abrasion	1,019	12.1	12,680	3.9	12	388	7.2	5	3,824	6.0	4	-
Puncture wound	168	2.0	1,879	0.6	11	59	1.1	-	238	0.4	1	1
Electric shock/burn	43	0.5	1,175	0.4	27	33	0.6	-	27	0.0	1	-
Other burn	78	0.9	1,197	0.4	15	33	0.6	2	143	0.2	2	2
Dislocation	83	1.0	5,678	1.7	68	60	1.1	1	1,044	1.6	13	-
Fracture,arm/hand	339	4.0	11,855	3.6	35	183	3.4	2	3,122	4.9	9	-
Fracture,leg/foot	190	2.3	14,429	4.4	76	157	2.9	2	2,095	3.3	11	-
Fracture,head/face	25	0.3	1,234	0.4	49	17	0.3	-	72	0.1	3	-
Fracture,torso	81	1.0	5,130	1.6	63	69	1.3	1	1,230	1.9	15	-
Fracture,multiple	3	0.0	554	0.2	185	3	0.1	-	0	0.0	0	-
Dental related	25	0.3	79	0.0	3	6	0.1	-	4	0.0	0	-
Amputation,arm/hand	35	0.4	2,218	0.7	63	29	0.5	1	411	0.6	12	-
Amputation,leg/foot	17	0.2	3,876	1.2	228	17	0.3	5	271	0.4	16	-
Fatality	27	0.3	0	0.0	0	-	-	3	0	0.0	0	-
Object in eye	244	2.9	658	0.2	3	95	1.8	-	60	0.1	0	2
Hernia	84	1.0	3,396	1.0	40	73	1.4	-	436	0.7	5	-
Concussion	40	0.5	2,415	0.7	60	34	0.6	-	431	0.7	11	-
Nervous shock	1	0.0	0	0.0	0	-	-	-	17	0.0	17	-
Internal injury	12	0.1	937	0.3	78	11	0.2	1	44	0.1	4	-
Loss of eye	1	0.0	83	0.0	83	1	0.0	1	0	0.0	0	-
Skin reaction-chemical	32	0.4	781	0.2	24	16	0.3	-	30	0.0	1	5
One-time exp. to noise	19	0.2	228	0.1	12	13	0.2	-	59	0.1	3	-
All other injuries	390	4.6	23,430	7.2	60	265	4.9	1	1,228	1.9	3	2
One-time exp.-fumes	110	1.3	3,063	0.9	28	89	1.7	-	307	0.5	3	16
ALL	8,425	100	325,127	100	39	5,359	100	68	63,986	100	8	32

Cnt = count. % = percent of column total. Avg. = average. Term. = terminated. Trans. = transferred. Hazmat Exp. = condition was result of hazardous material exposure.

A day absent from work is any day (consecutive or not) following the date of injury or diagnosis of occupational illness that a railroad employee does not report to work for reasons connected with a reportable conditions.

A restricted work day is the inability of a railroad employee to perform all normally assigned duties of his or her regular job following a reportable condition. It includes temporary assignment to another job, being placed on restricted duties, or when the employee works less than full time at a regular job.

The count of "Absent cases" is the number of cases that resulted in an employee being absent from work.

TABLE 4-2 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY, BY RAILROAD, 1998

RR	Total		Fatal		Nonfatal		Days Absent			Absent Cases		Term./ Trans.	Days Restricted			Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	%	Avg.	Cnt	%	Cnt	Cnt	%	Avg.	Cnt
ALS	16	0.2	-	-	16	0.2	388	0.1	24	13	0.2	3	35	0.1	2	-
ARR	54	0.6	-	-	54	0.6	734	0.2	14	30	0.6	-	265	0.4	5	-
ATK	842	10.0	2	7.4	840	10.0	15,571	4.8	18	596	11.1	-	91	0.1	0	-
BAR	48	0.6	1	3.7	47	0.6	1,233	0.4	26	34	0.6	6	72	0.1	2	3
BLE	16	0.2	-	-	16	0.2	435	0.1	27	5	0.1	-	131	0.2	8	-
BNSF	1,014	12.0	3	11.1	1,011	12.0	27,060	8.3	27	448	8.4	22	30,073	47.0	30	8
BRC	17	0.2	2	7.4	15	0.2	307	0.1	18	11	0.2	1	10	0.0	1	-
CR	419	5.0	-	-	419	5.0	35,467	10.9	85	316	5.9	-	2,640	4.1	6	-
CSX	718	8.5	5	18.5	713	8.5	65,705	20.2	92	581	10.8	-	250	0.4	0	3
DH	28	0.3	-	-	28	0.3	320	0.1	11	19	0.4	-	55	0.1	2	-
DME	23	0.3	-	-	23	0.3	395	0.1	17	11	0.2	-	40	0.1	2	-
DMIR	42	0.5	-	-	42	0.5	184	0.1	4	12	0.2	-	179	0.3	4	-
DWP	5	0.1	-	-	5	0.1	314	0.1	63	4	0.1	-	118	0.2	24	-
EJE	45	0.5	-	-	45	0.5	1,351	0.4	30	19	0.4	4	504	0.8	11	-
FEC	29	0.3	-	-	29	0.3	1,314	0.4	45	22	0.4	1	209	0.3	7	-
GRP3	1,003	11.9	2	7.4	1,001	11.9	8,644	2.7	9	501	9.3	15	4,613	7.2	5	8
GRS	21	0.2	-	-	21	0.3	171	0.1	8	13	0.2	2	59	0.1	3	-
GTW	153	1.8	-	-	153	1.8	2,467	0.8	16	49	0.9	-	4,044	6.3	26	-
GWWR	12	0.1	-	-	12	0.1	82	0.0	7	7	0.1	-	125	0.2	10	-
IC	105	1.2	3	11.1	102	1.2	2,630	0.8	25	63	1.2	5	247	0.4	2	-
IHB	53	0.6	-	-	53	0.6	3,692	1.1	70	47	0.9	-	72	0.1	1	-
IMRL	40	0.5	-	-	40	0.5	1,463	0.4	37	26	0.5	-	477	0.7	12	-
KCS	95	1.1	-	-	95	1.1	1,349	0.4	14	40	0.7	1	667	1.0	7	-
LI	408	4.8	-	-	408	4.9	8,916	2.7	22	383	7.1	2	844	1.3	2	-
MBTA	85	1.0	-	-	85	1.0	431	0.1	5	66	1.2	-	0	0.0	0	-
MNCW	319	3.8	-	-	319	3.8	6,400	2.0	20	147	2.7	-	5,124	8.0	16	-
MRL	12	0.1	-	-	12	0.1	159	0.0	13	10	0.2	-	56	0.1	5	-
NICD	28	0.3	1	3.7	27	0.3	239	0.1	9	13	0.2	-	194	0.3	7	-
NIRC	127	1.5	-	-	127	1.5	2,493	0.8	20	69	1.3	-	253	0.4	2	-
NJTR	85	1.0	1	3.7	84	1.0	1,370	0.4	16	54	1.0	1	30	0.0	0	-
NS	270	3.2	3	11.1	267	3.2	17,539	5.4	65	181	3.4	1	854	1.3	3	1
PAL	6	0.1	-	-	6	0.1	207	0.1	35	4	0.1	-	19	0.0	3	-
PATH	101	1.2	-	-	101	1.2	2,229	0.7	22	78	1.5	-	427	0.7	4	-
PCMZ	18	0.2	-	-	18	0.2	549	0.2	31	12	0.2	-	10	0.0	1	-
PTRA	6	0.1	-	-	6	0.1	798	0.2	133	6	0.1	3	36	0.1	6	-
SCAX	8	0.1	-	-	8	0.1	12	0.0	2	2	0.0	-	5	0.0	1	-
SEPA	181	2.1	-	-	181	2.2	1,690	0.5	9	140	2.6	-	107	0.2	1	2
SOO	167	2.0	-	-	167	2.0	5,792	1.8	35	127	2.4	-	389	0.6	2	-
TM	4	0.0	-	-	4	0.0	320	0.1	80	3	0.1	1	236	0.4	59	-
TRRA	1	0.0	-	-	1	0.0	193	0.1	193	1	0.0	-	0	0.0	0	-
UP	1,680	19.9	4	14.8	1,676	20.0	102,521	31.5	61	1,130	21.1	-	9,571	15.0	6	7
URR	28	0.3	-	-	28	0.3	739	0.2	26	18	0.3	-	121	0.2	4	-
WC	86	1.0	-	-	86	1.0	1,236	0.4	14	46	0.9	-	680	1.1	8	-
WE	7	0.1	-	-	7	0.1	18	0.0	3	2	0.0	-	54	0.1	8	-
ALL	8,425	100	27	100	8,398	100	325,127	100	39	5,359	100	68	63,986	100	8	32

Cnt = count. % = percent of column total. Avg = average. Term = terminated. Trans. = transferred. Hazmat Exp. = condition was a result of hazardous material exposure.

TABLE 4-3 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY, BY STATE, 1998

	Total		Fatal		Nonfatal		Days Absent			Absent Cases		Term./ Trans.	Days Restricted			Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	%	Avg.	Cnt	%	Cnt	Cnt	%	Avg.	Cnt
AL	98	1.2	1	3.7	97	1.2	4,487	1.4	46	62	1.2	4	191	0.3	2	-
AK	72	0.9	-	-	72	0.9	823	0.3	11	40	0.7	1	331	0.5	5	3
AZ	90	1.1	-	-	90	1.1	4,208	1.3	47	57	1.1	1	1,040	1.6	12	1
AR	206	2.4	-	-	206	2.5	12,210	3.8	59	130	2.4	1	2,223	3.5	11	1
CA	608	7.2	1	3.7	607	7.2	27,294	8.4	45	385	7.2	1	6,658	10.4	11	-
CO	103	1.2	-	-	103	1.2	3,067	0.9	30	58	1.1	1	1,341	2.1	13	1
CT	119	1.4	-	-	119	1.4	1,444	0.4	12	55	1.0	1	1,395	2.2	12	-
DE	32	0.4	-	-	32	0.4	251	0.1	8	12	0.2	-	73	0.1	2	-
DC	69	0.8	-	-	69	0.8	2,200	0.7	32	55	1.0	-	8	0.0	0	-
FL	170	2.0	-	-	170	2.0	10,251	3.2	60	126	2.4	1	507	0.8	3	1
GA	144	1.7	3	11.1	141	1.7	11,522	3.5	80	101	1.9	-	371	0.6	3	2
ID	62	0.7	-	-	62	0.7	2,657	0.8	43	40	0.7	-	441	0.7	7	-
IL	679	8.1	5	18.5	674	8.0	26,199	8.1	39	436	8.1	9	4,623	7.2	7	-
IN	222	2.6	2	7.4	220	2.6	12,642	3.9	57	145	2.7	3	747	1.2	3	-
IA	151	1.8	-	-	151	1.8	3,390	1.0	22	79	1.5	2	1,214	1.9	8	1
KS	155	1.8	-	-	155	1.8	3,871	1.2	25	74	1.4	-	1,919	3.0	12	-
KY	132	1.6	1	3.7	131	1.6	10,833	3.3	82	110	2.1	1	81	0.1	1	-
LA	145	1.7	1	3.7	144	1.7	5,511	1.7	38	96	1.8	3	1,099	1.7	8	-
ME	74	0.9	1	3.7	73	0.9	1,440	0.4	19	53	1.0	7	186	0.3	3	3
MD	82	1.0	-	-	82	1.0	5,374	1.7	66	64	1.2	-	33	0.1	0	-
MA	138	1.6	-	-	138	1.6	1,988	0.6	14	101	1.9	1	167	0.3	1	-
MI	252	3.0	-	-	252	3.0	8,023	2.5	32	111	2.1	-	3,476	5.4	14	-
MN	244	2.9	-	-	244	2.9	3,603	1.1	15	108	2.0	1	2,482	3.9	10	1
MS	60	0.7	1	3.7	59	0.7	1,124	0.3	19	28	0.5	-	227	0.4	4	-
MO	181	2.1	-	-	181	2.2	7,208	2.2	40	87	1.6	2	3,013	4.7	17	1
MT	58	0.7	-	-	58	0.7	991	0.3	17	29	0.5	1	1,604	2.5	28	-
NE	224	2.7	2	7.4	222	2.6	6,326	1.9	28	117	2.2	3	2,435	3.8	11	-
NV	29	0.3	-	-	29	0.3	1,590	0.5	55	17	0.3	-	122	0.2	4	-
NH	6	0.1	-	-	6	0.1	58	0.0	10	1	0.0	-	2	0.0	0	-
NJ	261	3.1	2	7.4	259	3.1	7,175	2.2	27	183	3.4	1	580	0.9	2	-
NM	77	0.9	-	-	77	0.9	2,934	0.9	38	53	1.0	1	2,127	3.3	28	1
NY	931	11.1	-	-	931	11.1	22,280	6.9	24	705	13.2	3	5,460	8.5	6	-
NC	75	0.9	1	3.7	74	0.9	5,479	1.7	73	56	1.0	-	81	0.1	1	-
ND	56	0.7	-	-	56	0.7	927	0.3	17	34	0.6	-	438	0.7	8	1
OH	286	3.4	1	3.7	285	3.4	14,398	4.4	50	182	3.4	1	1,558	2.4	5	-
OK	80	0.9	-	-	80	1.0	2,441	0.8	31	32	0.6	-	1,116	1.7	14	2
OR	130	1.5	1	3.7	129	1.5	4,018	1.2	31	78	1.5	1	1,238	1.9	10	-
PA	485	5.8	-	-	485	5.8	16,900	5.2	35	333	6.2	-	1,054	1.6	2	3
RI	10	0.1	-	-	10	0.1	77	0.0	8	7	0.1	-	26	0.0	3	-
SC	48	0.6	-	-	48	0.6	4,406	1.4	92	36	0.7	1	40	0.1	1	1
SD	36	0.4	-	-	36	0.4	490	0.2	14	15	0.3	-	736	1.2	20	-
TN	98	1.2	-	-	98	1.2	4,757	1.5	49	64	1.2	1	923	1.4	9	-
TX	536	6.4	3	11.1	533	6.3	30,850	9.5	58	363	6.8	11	3,792	5.9	7	9
UT	75	0.9	-	-	75	0.9	3,025	0.9	40	54	1.0	-	475	0.7	6	-
VT	23	0.3	-	-	23	0.3	66	0.0	3	11	0.2	-	51	0.1	2	-
VA	114	1.4	-	-	114	1.4	6,287	1.9	55	80	1.5	-	184	0.3	2	-
WA	182	2.2	-	-	182	2.2	4,594	1.4	25	114	2.1	3	3,949	6.2	22	-
WV	67	0.8	-	-	67	0.8	3,836	1.2	57	45	0.8	-	83	0.1	1	-
WI	167	2.0	-	-	167	2.0	4,339	1.3	26	87	1.6	-	1,113	1.7	7	-
WY	83	1.0	1	3.7	82	1.0	5,263	1.6	63	50	0.9	1	953	1.5	11	-
ALL	8,425	100	27	100	8,398	100	325,127	100	39	5,359	100	68	63,986	100	8	32

TABLE 4-4 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY EVENT, 1998

Event	Total		Days Absent		Absent Cases		Term./ Trans.	Days Restricted		Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	Cnt	%	Cnt
Aggravated pre-existing condition	132	1.6	5,472	1.7	77	1.4	1	1,628	2.5	-
Apprehending/removing from property	4	0.0	58	0.0	3	0.1	-	112	0.2	-
Assaulted by other	65	0.8	1,798	0.6	53	1.0	-	451	0.7	-
Assaulted by coworker	24	0.3	490	0.2	8	0.1	1	7	0.0	-
Bitten/stung by bee, spider, other insect	88	1.0	600	0.2	29	0.5	-	54	0.1	-
Bitten by animal	6	0.1	2	0.0	1	0.0	-	0	0.0	-
Bodily function/sudden movement, e.g.,sneez	256	3.0	12046	3.7	178	3.3	1	3,276	5.1	1
Caught in/compressed by hand tools	65	0.8	549	0.2	29	0.5	1	313	0.5	-
Caught in/compressed by other machinery	96	1.1	3,202	1.0	51	1.0	-	707	1.1	-
Caught in/crushed by materials	154	1.8	2,995	0.9	67	1.3	1	1,171	1.8	-
Caught in/compressed by powered hand tools	23	0.3	220	0.1	9	0.2	-	152	0.2	-
Cave in, slide, etc.	4	0.0	47	0.0	2	0.0	-	3	0.0	-
Climatic conditions, other (e.g., high wind	50	0.6	489	0.2	24	0.4	-	191	0.3	-
Climatic condition, exposure to environment	40	0.5	925	0.3	25	0.5	1	238	0.4	-
Collision - between on track equipment	109	1.3	8,840	2.7	89	1.7	2	938	1.5	-
Collision/impact - auto, truck, bus, van, e	242	2.9	12221	3.8	162	3.0	-	1,927	3.0	-
Defective/malfunctioning equipment	178	2.1	10463	3.2	123	2.3	3	2,243	3.5	-
Derailment	85	1.0	5,981	1.8	65	1.2	1	802	1.3	1
Electrical shock while operating welding e	1	0.0	113	0.0	1	0.0	-	0	0.0	-
Electrical shock due to contact with 3rd ra	16	0.2	444	0.1	13	0.2	-	7	0.0	-
Electrical shock, other (explain in narrati	12	0.1	424	0.1	10	0.2	-	13	0.0	-
Electrical shock from hand tool	5	0.1	170	0.1	5	0.1	-	0	0.0	-
Exposure to fumes - inhalation	133	1.6	4,648	1.4	106	2.0	-	320	0.5	18
Exposure to chemicals - external	41	0.5	97	0.0	20	0.4	-	10	0.0	6
Exposure to poisonous plants	11	0.1	16	0.0	5	0.1	-	0	0.0	-
Exposure to noise over time	4	0.0	35	0.0	2	0.0	-	0	0.0	-
Exposure to noise - single incident	21	0.2	479	0.1	15	0.3	-	17	0.0	-
Exposure to welding light	12	0.1	78	0.0	7	0.1	-	8	0.0	-
Highway-rail collision/impact	124	1.5	7,837	2.4	98	1.8	-	547	0.9	-
Horseplay, practical joke, etc.	7	0.1	32	0.0	5	0.1	-	109	0.2	-
Lost balance	408	4.8	19354	6.0	286	5.3	2	4,672	7.3	-
Missed handhold, grabiron, step, etc.	98	1.2	4,681	1.4	73	1.4	1	1,071	1.7	-
Needle puncture/prick/stick	19	0.2	422	0.1	4	0.1	-	74	0.1	-
Other impacts - on track equipment	53	0.6	3,116	1.0	42	0.8	-	346	0.5	1
Overexertion	1,116	13.2	46704	14.4	776	14.5	7	10,437	16.3	-
Pushed/shoved into/against	52	0.6	2,921	0.9	31	0.6	-	186	0.3	-
Pushed/shoved onto	15	0.2	590	0.2	8	0.1	1	48	0.1	-
Pushed/shoved from	20	0.2	1,145	0.4	15	0.3	-	169	0.3	-
Ran into on-track equipment	9	0.1	477	0.1	5	0.1	-	150	0.2	-
Ran into object/equipment	44	0.5	1,096	0.3	27	0.5	-	425	0.7	-
Repetitive motion - work processes	168	2.0	7,624	2.3	99	1.8	-	1,301	2.0	-
Repetitive motion - typing, keyboard, etc.	6	0.1	7	0.0	2	0.0	-	11	0.0	-
Repetitive motion - tools	51	0.6	1,879	0.6	29	0.5	2	854	1.3	-
Repetitive motion - other (describe in narr	26	0.3	226	0.1	14	0.3	1	94	0.1	-
Rubbed, abraded, etc.	54	0.6	145	0.0	15	0.3	-	195	0.3	-
Shot	3	0.0	25	0.0	2	0.0	-	12	0.0	-
Slack action, draft, compressive buff/coupl	55	0.7	3,232	1.0	50	0.9	3	520	0.8	-
Slipped,fell,stumbled,etc. due to irregular	426	5.1	19312	5.9	284	5.3	2	4,578	7.2	-
Slipped, fell, stumbled, etc. due to climat	228	2.7	10742	3.3	166	3.1	4	2,155	3.4	-
Slipped,fell,stumbled,etc. on oil, grease,e	191	2.3	11750	3.6	145	2.7	1	1,130	1.8	-
Slipped,fell,stumbled,etc. due to object,ba	600	7.1	32842	10.1	460	8.6	2	5,214	8.1	-
Stabbing, knifing, etc.	14	0.2	200	0.1	6	0.1	-	59	0.1	-
Stepped on object	120	1.4	3,678	1.1	77	1.4	1	1,023	1.6	-

TABLE 4-4 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY EVENT, 1998

(CONTINUED)

Event	Total		Days Absent		Absent Cases		Term./ Trans.	Days Restricted		Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	Cnt	%	Cnt
Struck by thrown or propelled object	200	2.4	2,612	0.8	90	1.7	2	708	1.1	1
Struck by object	536	6.4	11165	3.4	267	5.0	1	2,158	3.4	-
Struck by on-track equipment	69	0.8	6,621	2.0	46	0.9	3	235	0.4	-
Struck by falling object	206	2.4	4,577	1.4	122	2.3	-	843	1.3	-
Struck against object	349	4.1	7,868	2.4	168	3.1	2	1,504	2.4	1
Sudden release of air	26	0.3	418	0.1	14	0.3	-	55	0.1	-
Sudden/unexpected movement of material	187	2.2	4,081	1.3	90	1.7	-	1,234	1.9	-
Sudden/unexpected movement of on-track equ	162	1.9	10349	3.2	127	2.4	6	2,237	3.5	-
Sudden/unexpected movement of vehicle	60	0.7	3,513	1.1	41	0.8	1	1,056	1.7	-
Sustained viewing	3	0.0	2	0.0	1	0.0	-	0	0.0	-
Thrill seeking	1	0.0	0	0.0	-	-	-	1	0.0	-
Caught, crushed, pinched, other	112	1.3	2,111	0.6	59	1.1	3	918	1.4	-
On track equipment, other incidents	21	0.2	1,174	0.4	13	0.2	1	716	1.1	2
Slipped, fell, stumbled, other	139	1.6	7,528	2.3	108	2.0	1	384	0.6	-
Sudden, unexpected movement, other	86	1.0	1,995	0.6	57	1.1	2	404	0.6	-
Other (describe in narrative)	484	5.7	8,174	2.5	258	4.8	7	1,565	2.4	1
ALL	8,425	100	325E3	100	5,359	100	68	63,986	100	32

TABLE 4-5 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY LOCATION, 1998

Location	Total		Days Absent		Absent Cases		Term./ Trans.	Days Restricted		Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	Cnt	%	Cnt
Main/branch	2,599	30.8	102,227	31.4	1,691	31.6	17	18,494	28.9	11
Yard	2,671	31.7	130,965	40.3	1,811	33.8	31	22,273	34.8	11
Siding	232	2.8	9,917	3.1	142	2.6	-	2,342	3.7	3
Industry	398	4.7	17,983	5.5	241	4.5	7	3,306	5.2	3
Repair	219	2.6	4,248	1.3	105	2.0	2	3,221	5.0	1
Break/lunch room	41	0.5	1,396	0.4	25	0.5	1	458	0.7	-
Freight terminal	22	0.3	674	0.2	13	0.2	1	140	0.2	-
Highway/roadway	242	2.9	11,852	3.6	156	2.9	1	2,110	3.3	-
Loading dock	34	0.4	909	0.3	19	0.4	-	155	0.2	-
Lodging facility	6	0.1	29	0.0	3	0.1	-	392	0.6	-
Office environment	229	2.7	4,041	1.2	128	2.4	-	1,338	2.1	-
Parking lot	82	1.0	3,443	1.1	48	0.9	1	271	0.4	-
Passenger terminal	368	4.4	6,380	2.0	269	5.0	2	754	1.2	-
Repair shop	977	11.6	23,775	7.3	530	9.9	4	7,090	11.1	3
Storage facility	96	1.1	2,382	0.7	59	1.1	-	697	1.1	-
Sidewalk/walkway	31	0.4	780	0.2	20	0.4	-	86	0.1	-
Other, (off site location	73	0.9	2,485	0.8	42	0.8	-	346	0.5	-
Other (explain in narrati	40	0.5	973	0.3	21	0.4	1	231	0.4	-
Other location (describe	65	0.8	668	0.2	36	0.7	-	282	0.4	-
ALL	8,425	100	325,127	100	5,359	100	68	63,986	100	32

TABLE 4-6 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY ACTIVITY, 1998

Activity	Total		Days Absent		Absent Cases		Term./ Trans.	Days Restricted		Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	Cnt	%	Cnt
Adjusting coupler	43	0.5	1,967	0.6	31	0.6	3	284	0.4	-
Adjusting drawbar	33	0.4	2,487	0.8	26	0.5	1	153	0.2	-
Adjusting, other	75	0.9	2,255	0.7	38	0.7	-	938	1.5	1
Applying rail anchors	23	0.3	498	0.2	8	0.1	1	177	0.3	-
Bending, stooping	150	1.8	4,311	1.3	91	1.7	-	774	1.2	-
Carrying	63	0.7	2,584	0.8	39	0.7	-	729	1.1	-
Chaining/cabling car/loco	5	0.1	24	0.0	3	0.1	-	104	0.2	-
Cleaning	122	1.4	2,231	0.7	69	1.3	1	343	0.5	1
Climbing over/on	104	1.2	4,477	1.4	69	1.3	-	898	1.4	-
Closing	116	1.4	3,609	1.1	71	1.3	-	324	0.5	-
Coupling electric cables	11	0.1	342	0.1	7	0.1	-	0	0.0	-
Coupling steam hose	1	0.0	4	0.0	1	0.0	-	0	0.0	-
Coupling air hose	68	0.8	2,802	0.9	38	0.7	-	840	1.3	-
Crossing over	20	0.2	1,452	0.4	15	0.3	-	125	0.2	-
Crossing/crawling under	4	0.0	387	0.1	2	0.0	-	1	0.0	-
Crossing between	5	0.1	311	0.1	4	0.1	-	40	0.1	-
Cutting rail	17	0.2	167	0.1	8	0.1	-	127	0.2	-
Cutting vegetation	36	0.4	701	0.2	15	0.3	-	255	0.4	-
Cutting, other	78	0.9	614	0.2	20	0.4	-	164	0.3	-
Digging, excavating	31	0.4	949	0.3	17	0.3	-	404	0.6	-
Driving motor vehicle	189	2.2	6,094	1.9	106	2.0	-	1,535	2.4	-
Flagging	8	0.1	305	0.1	6	0.1	-	0	0.0	-
Fueling	9	0.1	425	0.1	5	0.1	1	388	0.6	1
Getting on	96	1.1	5,232	1.6	71	1.3	-	703	1.1	-
Getting off	325	3.9	12,893	4.0	221	4.1	2	3,010	4.7	1
Grinding	54	0.6	694	0.2	16	0.3	-	223	0.3	-
Handling baggage	20	0.2	595	0.2	15	0.3	-	5	0.0	-
Handling car parts	51	0.6	2,031	0.6	27	0.5	-	831	1.3	-
Handling material, general	234	2.8	4,771	1.5	117	2.2	1	1,681	2.6	-
Handling loco parts	33	0.4	625	0.2	15	0.3	1	383	0.6	-
Handling wheels/trucks	7	0.1	209	0.1	6	0.1	-	0	0.0	-
Handling other trk material	53	0.6	1,030	0.3	18	0.3	-	575	0.9	-
Handling poles	5	0.1	8	0.0	3	0.1	-	24	0.0	-
Handling rail,ties,etc.	147	1.7	2,409	0.7	69	1.3	1	1,117	1.7	3
Inspecting	85	1.0	1,602	0.5	50	0.9	-	822	1.3	3
Installing	145	1.7	3,508	1.1	69	1.3	2	1,274	2.0	-
Jumping from	50	0.6	5,166	1.6	40	0.7	-	581	0.9	-
Jumping onto	8	0.1	452	0.1	6	0.1	-	29	0.0	-
Laying	4	0.0	240	0.1	3	0.1	-	141	0.2	-
Lifting other material	259	3.1	5,969	1.8	174	3.2	1	1,708	2.7	-
Lifting tools/parts,etc.)	174	2.1	7,740	2.4	117	2.2	-	1,459	2.3	-
Lining switches	302	3.6	18,636	5.7	211	3.9	6	2,671	4.2	-
Lining, other	31	0.4	1,107	0.3	19	0.4	-	315	0.5	1
Loading/unloading	113	1.3	3,403	1.0	70	1.3	-	456	0.7	-
Maintaining	43	0.5	1,123	0.3	19	0.4	-	191	0.3	-
Opening	173	2.1	5,611	1.7	121	2.3	2	1,490	2.3	1
Opening/closing angle cock	31	0.4	417	0.1	15	0.3	-	233	0.4	-
Operating	344	4.1	16,591	5.1	247	4.6	2	1,870	2.9	2
Pulling pin lifter/uncoupling	83	1.0	4,354	1.3	58	1.1	1	1,026	1.6	-
Pulling	250	3.0	9,298	2.9	162	3.0	1	2,042	3.2	1
Pushing	88	1.0	3,649	1.1	50	0.9	-	916	1.4	2

TABLE 4-6 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY ACTIVITY, 1998

(CONTINUED)

Activity	Total		Days Absent		Absent Cases		Term./ Trans.	Days Restricted		Hazmat Exp.
	Cnt	%	Cnt	%	Cnt	%	Cnt	Cnt	%	Cnt
Reaching	92	1.1	2,215	0.7	53	1.0	1	700	1.1	1
Removing rail anchors, etc	29	0.3	855	0.3	16	0.3	1	54	0.1	-
Repairing	165	2.0	3,848	1.2	91	1.7	1	1,041	1.6	1
Riding	502	6.0	32,323	9.9	387	7.2	10	3,721	5.8	4
Running	21	0.2	752	0.2	16	0.3	-	242	0.4	-
Sitting	267	3.2	12,482	3.8	190	3.5	4	2,540	4.0	1
Spiking (install/remove)	121	1.4	5,585	1.7	60	1.1	2	405	0.6	-
Standing	373	4.4	13,629	4.2	250	4.7	4	1,723	2.7	1
Stepping up	112	1.3	5,449	1.7	80	1.5	-	632	1.0	-
Stepping down	362	4.3	14,677	4.5	266	5.0	2	3,031	4.7	-
Stepping over	67	0.8	2,639	0.8	43	0.8	1	782	1.2	-
Uncoupling air hose	21	0.2	1,489	0.5	16	0.3	-	17	0.0	-
Uncoupling electric cables	7	0.1	202	0.1	6	0.1	-	120	0.2	-
Using hand signals	3	0.0	17	0.0	2	0.0	-	0	0.0	-
Using hand tool	263	3.1	2,967	0.9	112	2.1	-	1,639	2.6	-
Using, other	51	0.6	1,850	0.6	27	0.5	-	369	0.6	1
Walking	1,174	13.9	54,335	16.7	838	15.6	7	9,689	15.1	4
Welding/field welding	63	0.7	1,343	0.4	24	0.4	1	298	0.5	-
Handbrakes, applying	55	0.7	2,662	0.8	37	0.7	2	1,055	1.6	-
Handbrakes, releasing	43	0.5	3,603	1.1	34	0.6	-	742	1.2	-
Handbrakes, other	6	0.1	127	0.0	3	0.1	-	46	0.1	-
Derail, applying	8	0.1	332	0.1	4	0.1	-	104	0.2	-
Derail, removing	5	0.1	43	0.0	4	0.1	-	133	0.2	-
Other activities	196	2.3	3,344	1.0	102	1.9	5	524	0.8	2
ALL	8,425	100	325,127	100	5,359	100	68	63,986	100	32

TABLE 4-7 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY, 1998

Executives, Officials, and Staff Assistants

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Executives, officials, and staff assistants (miscellaneous)	-	1	70	0
Executives and general officers	-	4	82	0
Corporate staff managers	-	5	3	16
Regional/division officers, assistants and staff assistants	-	7	262	7
Transportation officers/managers	-	11	226	51
--Total	-	28	643	74

TABLE 4-7 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY JOB, 1998

Professional and Administrative

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Professional and administrative (miscellaneous)	-	5	13	0
Professional	-	11	2	0
Subprofessionals	-	8	26	81
Auditors, traveling auditors or accountants	-	1	0	0
General and administrative supervisors	-	13	308	0
Sales and traffic representatives and agents	-	22	136	36
Freight and other claim agents and investigators	-	7	394	5
Lieutenants and sergeants of police	-	18	506	606
Police officers,watchmen,guards (except crossing & bridge)	-	40	915	206
Inspectors, (except MOW & MOE), other investigators, etc	-	2	66	0
Buyers, and sales agents	-	2	0	0
Clerical technicians and clerical specialists	-	16	83	38
Office machine and data equipment operators	-	12	410	217
Secretaries, stenographers, and typists	-	7	116	121
General/other clerks (except yd clerk and crew dispatcher)	-	113	4,729	967
Building and office attendants	-	31	672	247
Messengers and office persons	-	3	7	0
Motor vehicle operators	-	29	925	300
--Total	-	340	9,308	2,824

Maintenance of Way and Structures

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Maintenance of way and structures (miscellaneous)	-	40	421	150
Supervisors, MOW, structures, communication & signls	-	39	1,290	212
MOW, structures, comm. & signals, & scale inspectors	1	38	1,505	95
Bridge and building gang foreman	-	56	1,570	785
Bridge and building carpenters	2	90	3,078	906
Bridge and building ironworkers	-	29	756	160
Bridge and building painters	-	8	282	33
Masons, bricklayers, plasterers, and plumbers	-	134	5,073	713
Bridge and building helpers and apprentices	1	40	232	380
Bridge/building gang and bridge/building dept laborers	-	79	874	744
Track gang foremen (extra gang work train laborers)	1	68	2,504	616
Gang or section foreman	1	124	5,400	469
Extra gang laborers	-	209	3,839	1,633
Section laborers	1	509	12,362	3,043
Machine operators	-	327	12,580	1,216
Gang foremen, communications and signals	-	29	1,199	257
Signalmen and signal maintainers	-	217	4,762	2,462
Linemen and groundmen and communications craftsman	-	81	1,694	872
Assistant signalmen and assistant signal maintainers	-	50	869	230
Signal helpers and signal maintainer helpers	1	7	72	136
Camp car cooks	-	7	57	43
--Total	8	2,181	60,419	15,155

TABLE 4-7 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY JOB, 1998

Maintenance of Equipment and Stores

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Maintenance of equipment and stores (miscellaneous)	-	26	230	114
Supervisors and general foremen, maintenance of equipment	-	28	445	47
Supervisors and general foremen, materials and stores	-	5	138	46
Equipment, shop, electrical inspectors	-	5	35	7
Materials and supplies inspectors	-	2	12	2
Storekeeper	-	13	166	12
Gang foremen, maintenance of equipment	-	41	2,077	334
Blacksmiths	-	9	494	25
Boilermakers	-	17	52	159
Carmen (freight)	2	413	14,015	4,012
Carmen (other)	1	228	5,604	1,917
Electrical workers (A)	-	236	5,517	2,068
Electrical workers (B)	-	7	127	0
Electrical workers (C)	-	3	5	0
Machinists	-	332	8,711	3,556
Sheet metal workers	-	71	2,186	750
Skilled trades, helpers, maintenance of equipment and stores	-	55	559	247
Apprentices, maintenance of equipment and stores	-	18	470	407
Coach cleaners	-	135	3,608	590
Laborers: shops, enginehouses and power plants	-	156	5,189	1,201
Gang foremen, materials and stores	-	2	47	4
Equipment operators/general laborers, materials and stores	-	35	882	386
Stationary engineers	-	3	133	0
Stationary firemen	-	2	275	7
--Total	3	1,842	50,977	15,891

TABLE 4-7 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY BY JOB, 1998

Transportation, Other Than Train and Engine

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Transportation, other than train and engine (miscellaneous)	-	2	274	0
Transportation supervisor and chief train dispatcher	-	1	12	0
Train dispatchers	-	6	315	0
Station, freight and passenger agents	-	33	538	13
Clerk operators, towerman, train directors	-	9	105	0
Station masters & assts, super bag. agents, bag. agents, etc	-	5	17	2
Baggage, parcel room and station attendents	-	47	505	8
Gen/asst gnrl foremen,stations,warehouses,grain elev., docks	-	1	0	0
509	-	1	1	5
Grain elevator, and dock laborers	-	9	117	0
Station, and warehouse laborers	-	38	988	39
Truckers (station, warehouse and platforms)	-	6	46	37
Food and lodging manager, supervisors	-	5	176	0
Transportation and dining-service inspectors	-	1	0	14
Waiters and kitchen helpers (restaurant and dining car)	-	10	22	0
Chefs and cooks (restaurant and dining car)	-	28	280	132
Marine officers and workers and shore workers	-	2	104	68
Train attendants	-	131	2,462	101
Bridge operators and helpers	-	3	0	15
Bridge and crossing flagmen and gatemen	-	1	30	4
Yards clerks	-	16	625	42
Crew dispatchers	-	11	303	69
Yardmasters and assistant yardmasters	-	15	326	1
--Total	-	381	7,246	550

TABLE 4-7 REPORTABLE CONDITIONS TO EMPLOYEE ON DUTY, 1998

Transportation, Train and Engine

	---Total...		---- Days ----	
	Ftl	Nonf	Absent From Work	Restricted At Work
Transportation, train and engine (miscellaneous)	-	18	124	44
Switchtenders	-	21	698	150
Car retarder operators and ground service employees	-	3	117	0
Outside hostlers	-	15	280	185
Outside hostler helpers	-	4	346	0
Inside hostler	-	7	14	214
Road passenger conductors	-	283	5,675	999
Assistant road passenger conductors and ticket collectors	2	92	1,613	97
Road freight conductors (through freight)	3	664	41,433	8,181
Road freight conductors (local and way freight)	1	301	13,538	1,944
Road passenger baggageperson	-	1	12	0
Road Passenger brakemen and flagmen	-	40	793	47
Road freight brakemen and flagmen (through freight)	-	126	9,867	1,001
Road freight brakemen and flagmen (local and way freight)	2	234	19,399	2,589
Yard conductors and yard foremen	4	413	22,120	4,182
Yard brakemen and yard helpers	1	485	25,531	3,411
Road passenger engineers and motormen	-	150	3,261	492
Road freight engineers (through freight)	3	432	31,392	3,835
Road freight engineers (local and way freight)	-	161	9,469	1,053
Yard engineers	-	160	10,188	973
Road passenger firemen and helpers	-	2	2	0
Road freight firemen and helpers (through freight)	-	13	650	74
Road freight firemen and helpers (local and way freight)	-	1	12	21
--Total	16	3,626	196,534	29,492

TABLE 4-8 OCCUPATONAL ILLNESSES OF EMPLOYEE ON DUTY, 1998

Illness	Total		Ftl	Nonf	Days Absent	Absent Cases	Term./ Trans.	Days Restri- cted	Hazmat Exp.
	Cnt	%							
Dermatitis	7	4.1	-	7	5	1	-	0	-
Rashes	15	8.8	-	15	29	7	-	29	-
Misc. skin diseases/disorders	1	0.6	-	1	0	-	-	0	-
Pneumoconioses, other	1	0.6	-	1	8	1	-	0	-
Pneumonitis	1	0.6	-	1	0	-	-	0	-
Acute congestion, dust/gas/etc.	6	3.5	-	6	2	2	-	13	-
Misc. respiratory conditions	3	1.8	-	3	24	3	-	0	2
Poisoning, gases	1	0.6	-	1	0	-	-	0	-
Poisoning, miscellaneous	1	0.6	-	1	2	1	-	0	-
Heat/sun stroke	3	1.8	-	3	9	1	-	0	-
Heat exhaustion	25	14.6	-	25	357	12	-	229	-
Misc. disorders,physical agents	1	0.6	-	1	0	-	-	0	-
Noise induced hearing loss	3	1.8	-	3	60	2	-	0	-
Synovitis	5	2.9	-	5	265	4	-	310	-
Tenosynovitis	16	9.4	-	16	192	6	-	83	-
Bursitis	2	1.2	-	2	2	1	-	24	-
Raynaud's phenomena	1	0.6	-	1	82	1	-	0	-
Carpal tunnel syndrome	18	10.5	-	18	645	9	-	105	-
Misc. repeated trauma condition	28	16.4	-	28	977	9	2	779	-
Stress related syndromes	14	8.2	-	14	60	2	-	22	-
Histoplasmosis/coccidiomycosis	2	1.2	-	2	107	2	-	9	-
Misc. illnesses, unclassified	4	2.3	-	4	4	2	-	0	-
Emotional trauma/nervous shock	13	7.6	-	13	591	8	-	0	-
Total....	171	100	-	171	3,421	74	2	1,603	2

TABLE 4-9 OCCUPATIONAL ILLNESSES OF EMPLOYEE ON DUTY, BY RAILROAD, 1998

RR	Total		Ftl	Nonf	Days Absent			Absent Cases		Term./ Trans.	Days Restricted			Hazmat Exp.
	Cnt	%			Cnt	%	Avg.	Cnt	%	Cnt	Cnt	%	Avg.	Cnt
ARR	4	2.3	-	4	99	2.9	25	1	1.4	-	0	0.0	0	-
ATK	9	5.3	-	9	235	6.9	26	5	6.8	-	0	0.0	0	-
BAR	2	1.2	-	2	9	0.3	5	1	1.4	1	30	1.9	15	1
BNSF	35	20.5	-	35	1,236	36.1	35	15	20.3	1	1,349	84.2	39	-
CR	1	0.6	-	1	353	10.3	353	1	1.4	-	0	0.0	0	-
CSX	7	4.1	-	7	9	0.3	1	2	2.7	-	0	0.0	0	-
DME	1	0.6	-	1	0	0.0	0	-	-	-	0	0.0	0	-
GRP3	25	14.6	-	25	140	4.1	6	13	17.6	-	51	3.2	2	1
GTW	4	2.3	-	4	13	0.4	3	2	2.7	-	11	0.7	3	-
IC	1	0.6	-	1	0	0.0	0	-	-	-	0	0.0	0	-
KCS	2	1.2	-	2	10	0.3	5	1	1.4	-	0	0.0	0	-
LI	6	3.5	-	6	14	0.4	2	5	6.8	-	0	0.0	0	-
MNCW	15	8.8	-	15	10	0.3	1	3	4.1	-	64	4.0	4	-
NIRC	3	1.8	-	3	0	0.0	0	-	-	-	5	0.3	2	-
NJTR	1	0.6	-	1	0	0.0	0	-	-	-	0	0.0	0	-
NS	1	0.6	-	1	0	0.0	0	-	-	-	0	0.0	0	-
PATH	8	4.7	-	8	0	0.0	0	-	-	-	0	0.0	0	-
SEPA	3	1.8	-	3	13	0.4	4	3	4.1	-	0	0.0	0	-
SOO	1	0.6	-	1	0	0.0	0	-	-	-	0	0.0	0	-
UP	35	20.5	-	35	1,216	35.5	35	19	25.7	-	83	5.2	2	-
WC	7	4.1	-	7	64	1.9	9	3	4.1	-	10	0.6	1	-
Tot.	171	100	-	171	3,421	100	20	74	100	2	1,603	100	9	2

CHAPTER 5

TRAIN ACCIDENTS

Collisions, derailments, fires, explosions, acts of God, or other events involving the operation of railroad on-track equipment (standing or moving) and causing reportable damages greater than the reporting threshold for the year in which the accident/incident occurred must be reported using Form FRA F 6180.54. The reporting threshold for calendar years 1992-1996 was $6,300. The reporting threshold for calendar year 1997 was $6,500, and in 1998 it was $6,600.

Reportable damage includes labor costs and all other costs to repair or replace in kind damaged on-track equipment, signals, track, track structures, or roadbed. Reportable damage does not include the cost of clearing a wreck; however, additional damage to the above listed items caused while clearing the wreck is to be included in your damage estimate.

> Examples of other costs included in reportable damage are: (1) rental and/or operation of machinery such as cranes, bulldozers, including the services of contractors, to replace or repair the track right-of-way and associated structures; and (2) costs associated with the repair or replacement of roller bearings on units that were derailed or submerged in water. (Replacement costs include the labor costs resulting from a wheel set change out.)

If the property of more than one railroad is involved in an accident/incident, the reporting threshold is calculated by including the damages suffered by all of the railroads involved. When total reportable damage to all railroads directly involved in an accident/incident exceeds the reporting threshold, a report is required even though an individual railroad's damages were below the threshold.

The tables displaying train accidents counts by railroad, are the number of events that a railroad was involved in, regardless of whether or not that railroad's operations were the primary reason the accident occurred. This is done because all railroads are required to report the extent of their involvement in the accident, regardless of whether or not their is agreement on the cause of the accident.

A form must be completed for each consist involved in an accident. The railroad responsible for the on-track equipment at the time of the accident, and only that railroad, will report the consist.

In joint operations, if the railroad having track maintenance responsibility did not also have on-track rail equipment involved, a report containing the track information must be forwarded.

Track information for accidents occurring on industry track of a non-reporting company is to be reported by the railroad operating the on-track equipment. Damages to industry track and on-track equipment are included in reportable damage.

A railroad need not report the following:

1. Cars derailed on industry tracks by non-railroad employees or non-railroad employee vandalism, providing there is no involvement of railroad employees;

2. Damage to out-of-service cars resulting from high water or flooding, e.g., empties placed on storage or repair track. This exclusion does not apply if such cars are placed into a moving consist and as a result of this damage, a reportable rail equipment accident results.

An equipment consist is a train, locomotive(s), cut of cars, or a single car not coupled to another car or locomotive.

A car is:

(1) any unit of on-track equipment designed to be hauled by locomotives, or

(2) any unit of on-track work equipment such as a track motorcar, highway-rail vehicle, push car, crane, or ballast tamping machine.

Locomotive. A locomotive is a piece of on-track equipment, other than hi-rail or specialized maintenance equipment,

(1) With one or more propelling motors designed for moving other equipment;

(2) With one or more propelling motors designed to carry freight or passenger traffic, or both; or

(3) Without propelling motors but with one or more control stands.

Motorcar. A self-propelled unit of equipment, designed to carry freight or passenger traffic. (Does not include track motor cars or similar work equipment.)

Train. For purposes of accident/incident reporting, a train is a locomotive or locomotives coupled with or without cars, and with or without markers displayed. This definition includes trains consisting entirely of self-propelled units designed to carry passengers, freight traffic, or both.

Yard switching trains. Those trains operated primarily within yards for the

purpose of switching other equipment. Examples include the making up or breaking up of trains, service industrial tracks within yard limits, storing or classifying cars, and other similar operations.

Note: Switching performed by a road crew that is incidental to the road operation is not included.

Work trains are non-revenue trains used for the administration and upkeep service of the railroad. Examples are: official trains; inspection trains; special trains running with company fire apparatus to save the railroad's property from destruction; trains that transport the railroad's employees to and from work when no transportation charge is made; construction and upkeep trains run in connection with maintenance and improvement work; and material and supply trains run in connection with operations.

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CHAPTER 5

TRAIN ACCIDENTS

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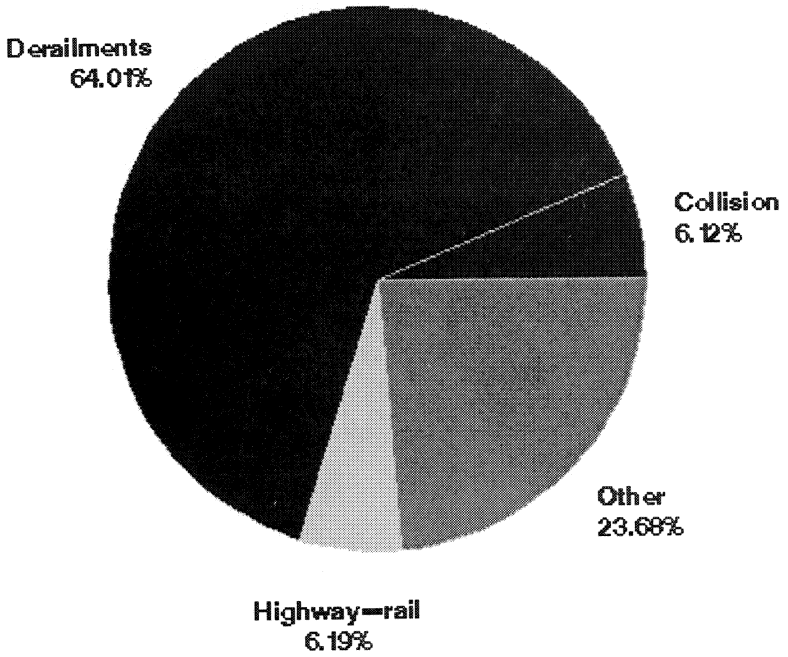

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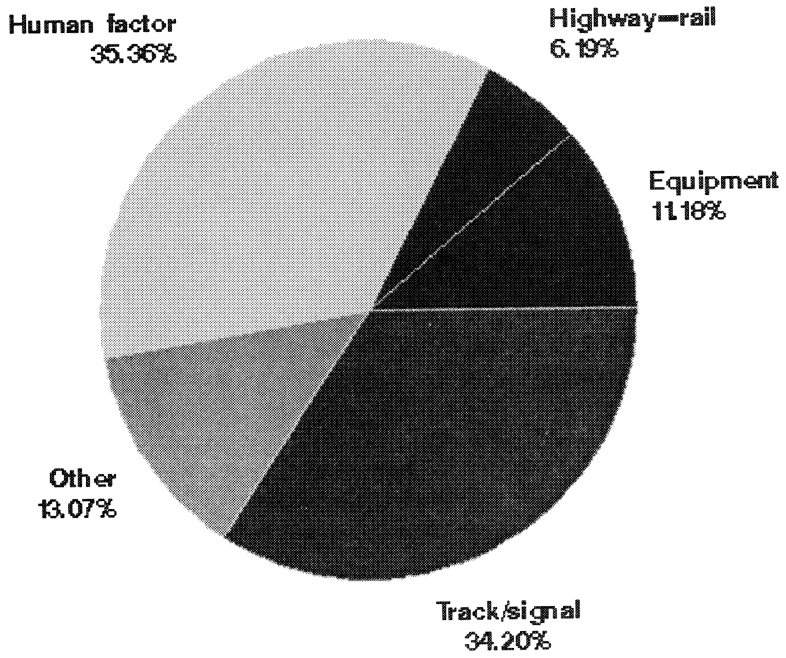

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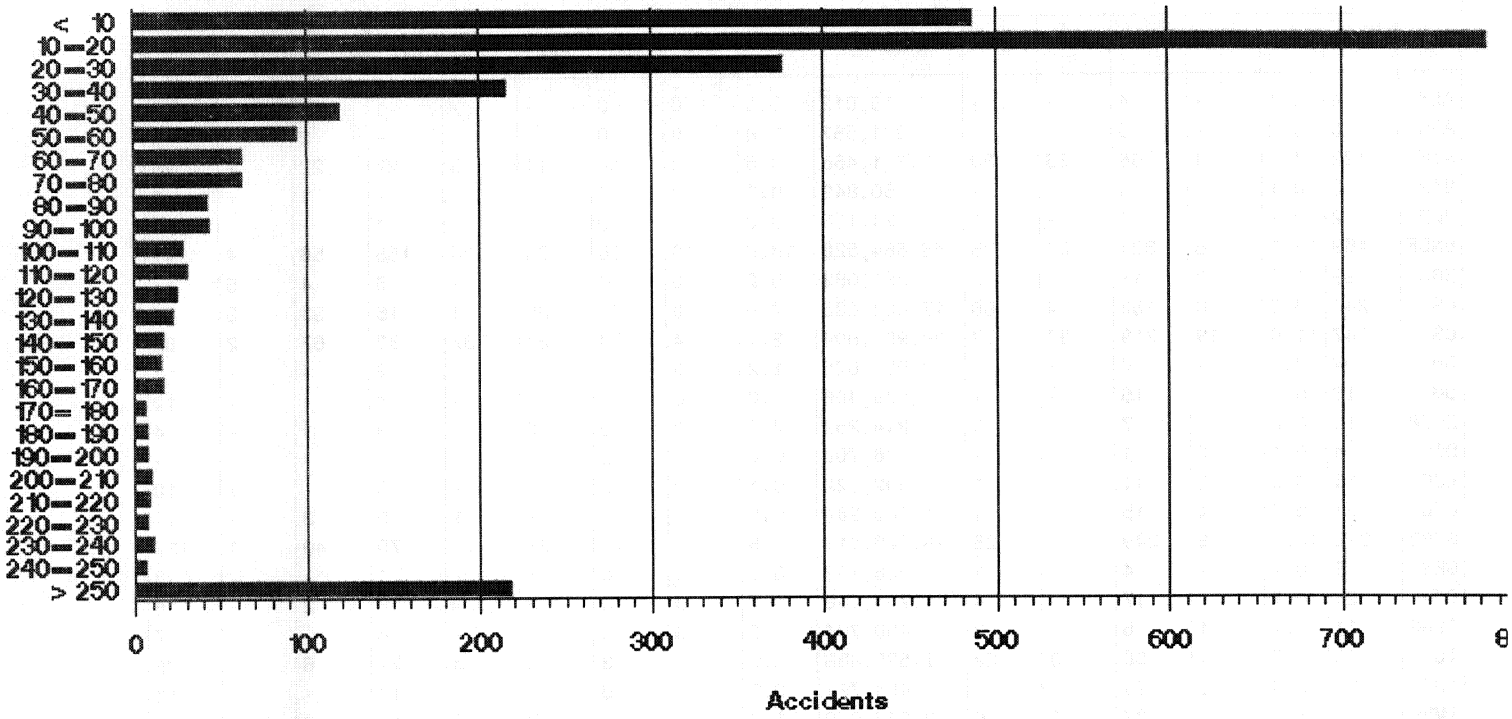

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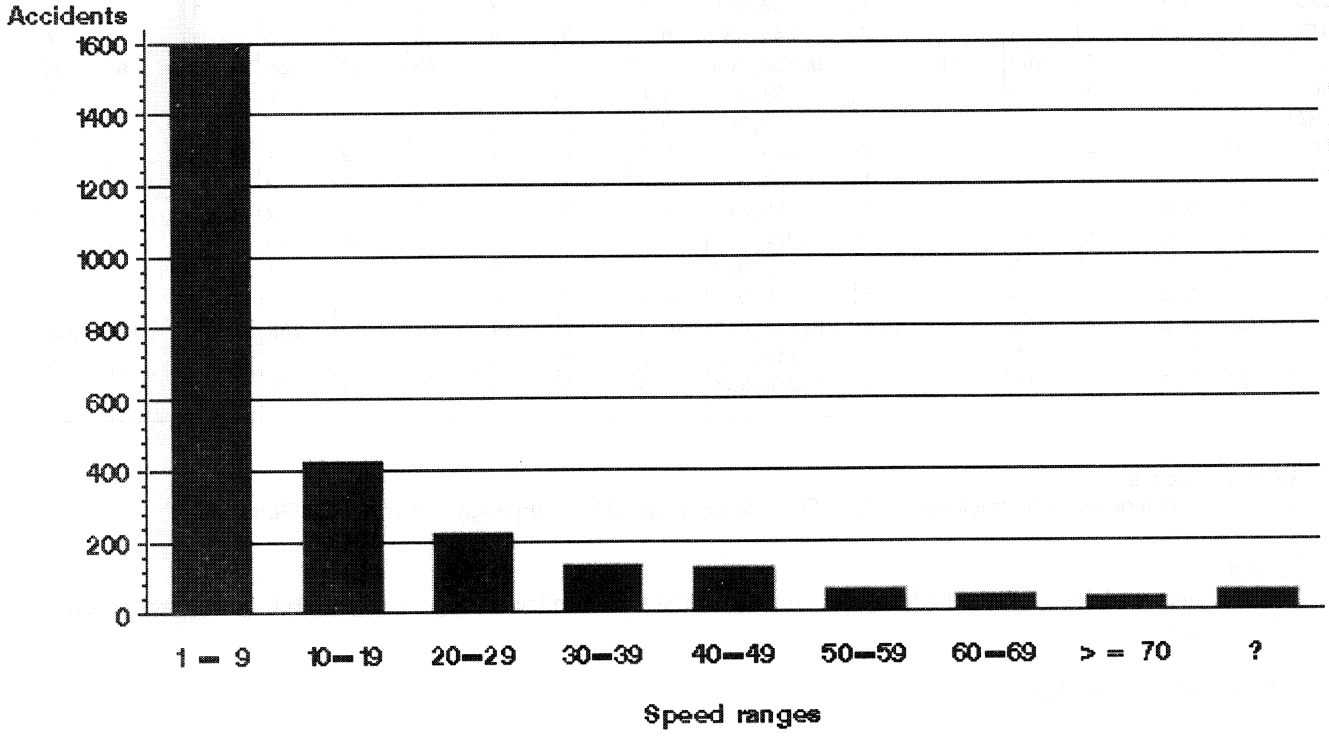

TABLE 5-1 TRAIN ACCIDENTS BY RR, TYPE AND MAJOR CAUSE, 1998

RR	Total		Type of Accident				Reportable Damage		Casualty		Causes					
	Cnt	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
ALS	4	0.1	-	4	-	-	15,012	0.0	0	0	-	-	1	-	-	3
ARR	5	0.2	-	5	-	-	921,587	0.4	0	0	-	-	-	2	-	3
ATK	122	4.1	4	55	33	30	8,771,465	3.5	12	86	11	33	27	22	-	29
BAR	3	0.1	-	3	-	-	50,849	0.0	0	0	-	-	-	1	-	2
BLE	2	0.1	-	1	-	1	24,158	0.0	0	0	-	-	1	-	-	1
BNSF	459	15.3	16	321	24	98	46,664,528	18.8	10	28	79	24	155	56	4	141
BRC	29	1.0	3	11	-	15	581,082	0.2	0	0	-	-	6	4	5	14
CR	240	8.0	8	162	4	66	17,423,635	7.0	0	21	30	4	115	33	3	55
CSX	347	11.6	19	219	37	72	29,962,804	12.1	4	20	21	37	132	67	2	88
DH	4	0.1	-	4	-	-	2,923,875	1.2	0	0	1	-	2	-	-	1
DME	16	0.5	-	15	-	1	1,879,466	0.8	0	0	-	-	4	-	-	12
DMIR	10	0.3	-	7	-	3	244,252	0.1	0	0	2	-	3	1	-	4
DWP	4	0.1	2	1	-	1	86,700	0.0	0	0	-	-	4	-	-	-
EJE	15	0.5	2	11	1	1	202,522	0.1	0	0	-	1	3	-	1	10
FEC	21	0.7	4	15	1	1	1,189,984	0.5	0	1	1	1	5	3	-	11
GRP3	312	10.4	18	249	17	28	18,556,017	7.5	0	19	27	17	70	40	1	157
GRS	5	0.2	-	4	-	1	283,142	0.1	0	0	1	-	1	-	-	3
GTW	21	0.7	-	17	-	4	1,703,758	0.7	0	0	3	-	8	2	-	8
GWWR	11	0.4	1	8	-	2	450,704	0.2	0	0	-	-	4	-	-	7
IC	76	2.5	1	50	3	22	7,535,838	3.0	1	3	5	3	27	6	-	35
IHB	27	0.9	2	25	-	-	404,771	0.2	0	0	-	-	13	-	-	14
IMRL	36	1.2	1	27	2	6	2,986,070	1.2	0	4	7	2	12	3	-	12
KCS	79	2.6	7	42	13	17	7,395,525	3.0	8	4	4	13	33	7	-	22
LI	19	0.6	1	7	-	11	894,689	0.4	0	0	4	-	7	4	-	4
MNCW	35	1.2	4	2	2	27	2,052,225	0.8	0	2	2	2	4	7	-	20
MRL	13	0.4	3	6	1	3	494,400	0.2	0	2	1	1	7	-	-	4
NICD	7	0.2	1	3	1	2	148,612	0.1	3	1	-	1	2	2	-	2
NIRC	2	0.1	-	-	1	1	33,465	0.0	0	1	-	1	-	1	-	-
NJTR	12	0.4	-	5	-	7	249,930	0.1	0	4	3	-	2	1	-	6
NS	167	5.6	38	102	18	9	10,339,439	4.2	1	12	29	18	59	21	6	34
PAL	4	0.1	2	2	-	-	87,060	0.0	0	0	-	-	2	-	-	2
PCMZ	1	0.0	-	-	1	-	9,500	0.0	0	1	-	1	-	-	-	-
PTRA	14	0.5	4	1	2	7	293,566	0.1	1	1	-	2	11	-	-	1
SCAX	8	0.3	1	2	4	1	286,525	0.1	1	0	-	4	2	1	-	1
SEPA	17	0.6	9	-	1	7	339,372	0.1	0	0	1	1	2	11	-	2
SOO	48	1.6	1	32	6	9	3,077,519	1.2	1	3	3	6	15	5	1	18
TM	5	0.2	-	5	-	-	2,025,905	0.8	0	0	1	-	1	1	-	2
TRRA	10	0.3	-	9	-	1	269,010	0.1	0	0	2	-	3	1	-	4
UP	756	25.3	39	463	29	225	76,101,061	30.6	2	54	89	29	288	84	17	249
URR	1	0.0	-	1	-	-	118,082	0.0	0	0	-	-	-	-	-	1
WC	26	0.9	1	11	3	11	1,213,584	0.5	0	4	2	3	12	4	-	5

Type of accident

Coll = collision between on track equipment. Der = derailment. HRC = highway-rail crossing. Othr = other.

Causes

Eqp = equipment defect. HRC = highway-rail crossing. Hmn = Human factor. Sig = signal defect. Trk = track defect. Othr = other.

Cnt = count. Ftl = fatality.

TABLE 5-2 TRAIN ACCIDENTS BY STATE, TYPE AND MAJOR CAUSE, 1998

	Total		Type of Accident				Reportable Damage		Casualty		Causes					
	Accs	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
AL	51	1.9	9	31	3	8	5,828,241	2.3	1	6	7	3	19	5	-	17
AK	5	0.2	-	5	-	-	921,587	0.4	0	0	-	-	-	2	-	3
AZ	18	0.7	-	14	-	4	1,014,242	0.4	0	0	4	-	8	2	-	4
AR	65	2.4	4	43	4	14	4,910,211	2.0	1	6	10	4	24	4	3	20
CA	149	5.4	7	96	14	32	11,121,896	4.5	4	30	12	14	52	21	-	50
CO	55	2.0	1	38	1	15	4,360,497	1.8	1	2	8	1	28	4	-	14
CT	25	0.9	2	5	1	17	772,923	0.3	0	0	1	1	2	3	-	18
DE	6	0.2	1	2	-	3	149,681	0.1	0	1	1	-	4	1	-	-
DC	7	0.3	-	6	-	1	333,785	0.1	0	0	1	-	5	-	-	1
FL	66	2.4	6	42	8	10	3,398,435	1.4	1	7	4	8	22	9	-	23
GA	73	2.7	9	41	9	14	5,682,157	2.3	1	6	6	9	29	13	2	14
ID	33	1.2	1	20	2	10	3,612,265	1.5	0	2	7	2	9	5	1	9
IL	194	7.1	17	125	5	47	11,143,694	4.5	2	7	24	5	73	23	5	64
IN	95	3.5	5	62	8	20	4,978,190	2.0	4	15	8	8	36	10	2	31
IA	96	3.5	3	62	2	29	7,202,979	2.9	0	5	8	2	32	11	-	43
KS	82	3.0	3	50	7	22	8,157,468	3.3	1	4	11	7	29	5	2	28
KY	63	2.3	8	35	5	15	5,870,944	2.4	0	3	3	5	28	11	-	16
LA	80	2.9	5	51	9	15	5,650,500	2.3	2	9	-	9	29	14	2	26
ME	10	0.4	-	9	-	1	427,306	0.2	0	0	-	-	1	4	-	5
MD	18	0.7	1	8	1	8	516,735	0.2	0	2	2	1	8	3	1	3
MA	12	0.4	-	10	-	2	658,566	0.3	0	1	-	-	5	2	-	5
MI	53	1.9	-	36	5	12	3,110,858	1.3	1	9	6	5	19	6	-	17
MN	67	2.4	1	46	7	13	5,138,001	2.1	2	2	8	7	16	11	1	24
MS	48	1.7	3	30	7	8	4,271,191	1.7	8	8	3	7	16	2	-	20
MO	60	2.2	8	41	3	8	4,556,192	1.8	0	3	6	3	25	8	-	18
MT	40	1.5	3	27	1	9	8,181,374	3.3	0	2	9	1	14	4	-	12
NE	83	3.0	3	50	1	29	19,190,323	7.7	0	2	17	1	26	7	4	28
NV	10	0.4	-	7	-	3	2,397,209	1.0	0	1	1	-	6	-	-	3
NH	2	0.1	-	2	-	-	276,104	0.1	0	0	2	-	-	-	-	-
NJ	27	1.0	1	14	-	12	679,997	0.3	0	4	5	-	8	4	-	10
NM	22	0.8	-	21	1	-	3,315,829	1.3	0	6	5	1	7	2	-	7
NY	104	3.8	6	58	2	38	8,156,265	3.3	0	8	14	2	42	22	1	23
NC	39	1.4	7	14	12	6	1,150,460	0.5	3	18	3	12	15	-	3	6
ND	33	1.2	-	23	5	5	3,036,593	1.2	5	2	5	5	6	2	-	15
OH	92	3.4	6	67	4	15	7,239,358	2.9	0	7	10	4	30	15	1	32
OK	52	1.9	3	44	-	5	5,974,287	2.4	0	2	7	-	9	12	-	24
OR	60	2.2	6	31	3	20	4,698,935	1.9	0	3	7	3	23	8	3	16
PA	117	4.3	12	74	2	29	9,201,765	3.7	0	11	14	2	42	23	-	36
SC	29	1.1	3	19	5	2	5,182,458	2.1	1	2	2	5	9	6	-	7
SD	21	0.8	-	20	-	1	1,182,203	0.5	0	1	3	-	3	2	-	13
TN	60	2.2	2	45	4	9	4,993,106	2.0	0	5	5	4	17	10	1	23
TX	287	10.5	8	180	21	78	30,007,321	12.1	6	53	33	21	102	35	2	94
UT	38	1.4	1	18	-	19	1,753,721	0.7	0	3	2	-	23	1	1	11
VT	5	0.2	-	5	-	-	709,431	0.3	0	0	2	-	-	1	-	2
VA	46	1.7	6	31	2	7	5,447,006	2.2	0	1	7	2	14	5	1	17
WA	35	1.3	1	23	-	11	4,156,815	1.7	0	0	2	-	21	3	2	7
WV	27	1.0	-	24	2	1	3,259,146	1.3	0	1	2	2	2	8	-	13
WI	42	1.5	3	23	3	13	2,665,123	1.1	0	4	4	3	19	4	-	12
WY	43	1.6	3	29	1	10	11,648,315	4.7	0	7	6	1	14	6	-	16
--																
Tot	2,745	100	168	1,757	170	650	248,291,688	100.0	44	271	307	170	971	359	38	900

TABLE 5-3 TRAIN ACCIDENTS BY MONTH, TYPE AND MAJOR CAUSE, 1998

	Total		Type of Accident				Reportable Damage		Casualty		Causes					
	Cnt	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Jan	216	7.9	18	147	12	39	15,840,983	6.4	1	11	22	12	75	34	1	72
Feb	205	7.5	13	133	9	50	14,706,929	5.9	0	16	23	9	75	28	1	69
Mar	212	7.7	17	133	14	48	21,915,471	8.8	8	13	29	14	69	34	4	62
Apr	233	8.5	8	171	15	39	17,409,987	7.0	3	21	27	15	90	27	3	71
May	246	9.0	12	163	18	53	21,932,304	8.8	5	33	29	18	81	42	4	72
Jun	247	9.0	13	170	16	48	25,442,723	10.2	8	29	24	16	81	35	4	87
Jul	279	10.2	13	176	17	73	31,458,542	12.7	6	38	28	17	89	44	5	96
Aug	228	8.3	10	152	16	50	15,238,073	6.1	2	22	27	16	79	23	3	80
Sep	228	8.3	17	132	14	65	22,599,490	9.1	8	30	26	14	90	21	3	74
Oct	211	7.7	14	116	11	70	15,237,926	6.1	1	5	24	11	83	20	5	68
Nov	218	7.9	23	116	14	65	22,818,909	9.2	0	20	20	14	85	30	2	67
Dec	222	8.1	10	148	14	50	23,690,351	9.5	2	33	28	14	74	21	3	82
--																
Tot	2,745	100	168	1,757	170	650	248,291,688	100	44	271	307	170	971	359	38	900

TABLE 5-4 TRAIN ACCIDENTS BY DAY, TYPE AND MAJOR CAUSE, 1998

	Total		Type of Accident				Reportable Damage		Casualty		Causes					
	Cnt	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Sun	401	14.6	22	247	32	100	36,606,106	14.7	10	57	38	32	146	46	5	134
Mon	422	15.4	19	291	27	85	49,458,095	19.9	6	43	52	27	126	68	5	144
Tue	385	14.0	23	235	31	96	33,588,693	13.5	5	36	50	31	128	57	5	114
Wed	384	14.0	23	244	13	104	34,070,142	13.7	5	18	45	13	134	59	6	127
Thu	369	13.4	31	230	20	88	28,626,945	11.5	8	38	35	20	150	37	6	121
Fri	398	14.5	22	262	26	88	34,809,697	14.0	7	42	46	26	141	50	3	132
Sat	386	14.1	28	248	21	89	31,132,010	12.5	3	37	41	21	146	42	8	128
--																
Tot	2,745	100	168	1,757	170	650	248,291,688	100.0	44	271	307	170	971	359	38	900

TABLE 5-5 TRAIN ACCIDENTS BY TIME OF DAY, TYPE AND MAJOR CAUSE, 1998

Time		Total		Type of Accident				Reportable Damage		Casualty		Causes					
		Cnt	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
AM	1	104	3.8	7	71	2	24	10,423,296	4.2	0	4	17	2	40	15	1	29
	2	108	3.9	8	73	1	26	6,921,816	2.8	0	6	9	1	44	12	-	42
	3	103	3.8	8	67	1	27	9,133,104	3.7	0	5	13	1	51	4	3	31
	4	116	4.2	6	73	5	32	16,116,408	6.5	4	9	14	5	45	14	3	35
	5	97	3.5	5	68	-	24	11,503,498	4.6	0	2	15	-	39	13	2	28
	6	97	3.5	3	62	4	28	15,364,741	6.2	2	13	15	4	32	8	1	37
	7	105	3.8	10	54	14	27	12,348,697	5.0	1	24	16	14	32	15	-	28
	8	126	4.6	6	67	16	37	8,385,424	3.4	4	20	12	16	40	23	-	35
	9	143	5.2	11	83	9	40	15,244,519	6.1	3	22	16	9	47	21	3	47
	10	131	4.8	10	68	17	36	10,168,844	4.1	2	16	12	17	41	20	-	41
	11	108	3.9	10	52	15	31	7,405,176	3.0	3	26	9	15	54	8	2	20
	12	85	3.1	9	64	-	12	9,333,764	3.8	1	10	13	-	30	14	1	27
	Sub	1,323	48.2	93	802	84	344	132,349,287	53.3	20	157	161	84	495	167	16	400
PM	1	152	5.5	11	97	14	30	11,762,965	4.7	3	8	10	14	52	19	2	55
	2	129	4.7	7	85	10	27	7,281,893	2.9	0	9	16	10	37	14	1	51
	3	111	4.0	7	71	14	19	5,860,468	2.4	0	12	15	14	25	5	2	50
	4	135	4.9	9	89	9	28	10,852,538	4.4	5	13	13	9	46	15	3	49
	5	132	4.8	5	92	5	30	11,891,137	4.8	0	7	3	5	45	31	1	47
	6	140	5.1	5	105	7	23	13,089,851	5.3	0	8	12	7	36	23	2	60
	7	104	3.8	6	57	5	36	9,370,115	3.8	7	22	13	5	44	15	1	26
	8	115	4.2	7	76	2	30	9,895,354	4.0	0	6	15	2	44	17	-	37
	9	105	3.8	2	78	2	23	12,762,434	5.1	1	2	10	2	43	9	2	39
	10	110	4.0	5	79	2	24	8,956,735	3.6	0	5	17	2	41	14	4	32
	11	83	3.0	5	64	1	13	7,297,597	2.9	4	5	13	1	31	16	2	20
	12	106	3.9	6	62	15	23	6,921,314	2.8	4	17	9	15	32	14	2	34
	Sub	1,422	51.8	75	955	86	306	115,942,401	46.7	24	114	146	86	476	192	22	500
Total		2,745	100	168	1,757	170	650	248,291,688	100	44	271	307	170	971	359	38	900

TABLE 5-6 TRAIN ACCIDENTS BY TYPE AND MAJOR CAUSE, 1998

	Total		Reportable Damage		Casualty		Causes					
	Cnt	%	Amount	%	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Derailments	1,757	64.0	189,797,985	76.4	1	61	254	-	446	233	14	810
Head on collision	8	0.3	550,700	0.2	0	4	-	-	8	-	-	-
Rear end collision	20	0.7	6,844,851	2.8	0	14	-	-	20	-	-	-
Side collision	102	3.7	6,406,537	2.6	0	8	6	-	81	8	3	4
Raking collision	36	1.3	1,326,170	0.5	0	4	4	-	15	12	1	4
Highway-rail Impact	170	6.2	14,393,994	5.8	40	142	-	170	-	-	-	-
RR crossing collision	2	0.1	784,426	0.3	1	2	1	-	1	-	-	-
Obstruction impact	58	2.1	1,494,242	0.6	1	4	2	-	21	30	-	5
Fire/violent rupture	16	0.6	1,669,631	0.7	0	2	8	-	-	7	-	1
Other impacts	238	8.7	11,365,114	4.6	1	21	8	-	177	33	10	10
Other events	338	12.3	13,658,038	5.5	0	9	24	-	202	36	10	66
-- Total	2,745	100	248,291,688	100	44	271	307	170	971	359	38	900

TABLE 5-7 TRAIN ACCIDENTS BY SUBCAUSE AND TYPE, 1998

	Total		Type of Accident				Reportable Damage		Casualty	
	Cnt	%	Coll	Der	HRC	Othr	Amount	%	Kld	Nonf
Brakes	32	1.2	2	24	-	6	2,353,419	0.9	0	1
Trailer/Container on Flatcar	2	0.1	-	2	-	-	372,352	0.1	0	0
Body	30	1.1	1	25	-	4	1,419,128	0.6	0	1
Coupler & Draft System	33	1.2	4	21	-	8	1,953,738	0.8	0	0
Truck Components	59	2.1	-	57	-	2	8,983,313	3.6	0	0
Axles & Journal Bearings	64	2.3	-	63	-	1	16,762,474	6.8	0	1
Wheels	49	1.8	-	47	-	2	10,701,299	4.3	0	1
Locomotives	12	0.4	-	6	-	6	3,121,103	1.3	0	2
Doors	10	0.4	1	7	-	2	380,661	0.2	0	0
Other Mechanical	16	0.6	3	2	-	11	1,041,125	0.4	0	1
Brakes, Use of	140	5.1	13	46	-	81	6,599,343	2.7	0	10
Flagging, Fixed, Hand & Radio	47	1.7	10	20	-	17	6,611,269	2.7	1	7
General Switching Rules	313	11.4	41	98	-	174	10,221,134	4.1	2	12
Main Track Authority	42	1.5	19	4	-	19	2,856,580	1.2	0	7
Train Handling/Makeup	129	4.7	5	106	-	18	12,566,668	5.1	0	4
Speed	64	2.3	15	19	-	30	5,190,271	2.1	0	19
Switches, Use of	197	7.2	16	136	-	45	8,133,739	3.3	0	11
Cab Signals	1	0.0	-	1	-	-	92,825	0.0	0	0
Miscellaneous Human Factors	38	1.4	6	16	-	16	3,368,107	1.4	0	1
Environmental Conditions	42	1.5	-	34	-	8	5,703,258	2.3	0	0
Loading Procedures	52	1.9	2	40	-	10	6,103,802	2.5	0	1
Highway-Rail Incidents	170	6.2	-	-	170	-	14,393,994	5.8	40	142
Unusual Operational Situations	105	3.8	5	61	-	39	8,161,832	3.3	0	7
Other Miscellaneous Causes	160	5.8	13	98	-	49	18,954,730	7.6	0	31
Signal Defects	38	1.4	4	14	-	20	873,816	0.4	0	2
Roadbed	43	1.6	-	40	-	3	7,475,388	3.0	0	0
Track Geometry	355	12.9	1	331	-	23	26,829,478	10.8	0	3
Rail, Joint Bar & Anchors	261	9.5	1	253	-	7	45,662,784	18.4	1	7
Frogs, Switches, Appliances	199	7.2	4	174	-	21	9,050,547	3.6	0	0
Other Track Defects	42	1.5	2	12	-	28	2,353,511	0.9	0	0
-- Total	2,745	100	168	1,757	170	650	248,291,688	100.0	44	271

TABLE 5-8 TRAIN ACCIDENTS WITH CONTRIBUTING CAUSE, 1998

Contributing Cause	Total		Type of Accident				Type of Track				
	Cnt	%	Coll	Der	HRC	Othr	Main	Yard	Side	Ind.	Unk
Unknown	1	0.3	-	1	-	-	-	1	-	-	-
Brakes	4	1.1	1	3	-	-	2	2	-	-	-
Body	1	0.3	-	-	-	1	-	1	-	-	-
Coupler & Draft System	6	1.6	-	4	-	2	4	2	-	-	-
Truck Components	4	1.1	-	4	-	-	3	-	1	-	-
Axles & Journal Bearings	2	0.5	-	2	-	-	2	-	-	-	-
Wheels	9	2.4	-	8	-	1	3	5	-	-	1
Locomotives	1	0.3	-	-	-	1	1	-	-	-	-
Doors	1	0.3	-	1	-	-	-	-	-	1	-
Brakes, Use of	8	2.1	-	2	-	6	1	5	-	2	-
Employee Physical Condition	1	0.3	-	1	-	-	-	-	-	1	-
Flagging, Fixed, Hand & Radio	8	2.1	1	2	-	5	2	3	2	-	1
General Switching Rules	45	12.0	6	19	-	20	8	32	2	2	1
Main Track Authority	1	0.3	1	-	-	-	1	-	-	-	-
Train Handling/Makeup	41	11.0	2	33	-	6	21	15	2	3	-
Speed	19	5.1	2	8	-	9	7	11	1	-	-
Switches, Use of	12	3.2	-	8	-	4	4	7	-	1	-
Miscellaneous Human Factors	6	1.6	2	1	-	3	1	4	-	1	-
Environmental Conditions	11	2.9	1	7	-	3	6	3	-	2	-
Loading Procedures	15	4.0	-	13	-	2	10	2	1	-	2
Highway-Rail Incidents	14	3.7	-	-	14	-	13	-	-	-	1
Unusual Operational Situations	8	2.1	1	6	-	1	7	1	-	-	-
Other Miscellaneous Causes	19	5.1	-	14	-	5	7	7	1	4	-
Signal Defects	6	1.6	1	2	-	3	2	3	1	-	-
Roadbed	24	6.4	-	24	-	-	13	7	3	1	-
Track Geometry	63	16.8	-	62	-	1	33	20	4	5	1
Rail, Joint Bar & Anchors	19	5.1	-	18	-	1	9	6	1	3	-
Frogs, Switches, Appliances	23	6.1	-	23	-	-	5	12	1	5	-
Other Track Defects	2	0.5	-	-	-	2	2	-	-	-	-
-- Total	374	100	18	266	14	76	167	149	20	31	7

TABLE 5-9 TRAIN ACCIDENTS BY SPECIFIC CAUSE AND TYPE, 1998

MAJOR CAUSE= Human Factors	Total		Type of Accident			Reportable Damage		Casualty	
	Cnt	%	Coll	Der	Othr	Amount	%	Kld	Nonf
Bottling the Air	4	0.1	2	-	2	339,073	0.1	0	4
Failure to secure engine- rr empl	4	0.1	-	3	1	64,302	0.0	0	0
Fail to secure car hnd brk -rr emp	32	1.2	1	9	22	619,016	0.2	0	2
Fail to release hand brk - rr emp	6	0.2	-	6	-	123,952	0.0	0	0
Fail to apply suff. hand brakes -rr emp	58	2.1	7	13	38	4,257,982	1.7	0	0
Fail to apply car hnd brks -rr emp	18	0.7	2	7	9	501,333	0.2	0	0
Fail to secure equip - not rr emp	6	0.2	1	1	4	282,985	0.1	0	0
Fail to ctrl car spd use hnd brk-r emp	3	0.1	-	2	1	87,686	0.0	0	0
Use of brakes, other	9	0.3	-	5	4	323,014	0.1	0	4
Fixed signal improperly displayed	1	0.0	-	1	-	91,200	0.0	0	0
Fixed signal, failure to comply	8	0.3	1	4	3	1,019,605	0.4	1	2
Hand signal, failure to give/receive	1	0.0	1	-	-	10,475	0.0	0	0
Radio communication, failure to comply	12	0.4	-	9	3	423,412	0.2	0	0
Radio communication, improper	2	0.1	-	1	1	80,882	0.0	0	0
Radio comm., failure to give/receive	7	0.3	2	1	4	236,116	0.1	0	0
Block signal, failure to comply	12	0.4	4	3	5	4,340,938	1.7	0	5
Interlocking signal, failure to comply	3	0.1	2	-	1	386,501	0.2	0	0
Other signal causes	1	0.0	-	1	-	22,140	0.0	0	0
Car(s) shoved out & left out of clear	12	0.4	3	1	8	239,388	0.1	0	0
Cars left foul	40	1.5	4	6	30	711,121	0.3	0	0
Derail, failure to apply or remove	23	0.8	-	19	4	438,573	0.2	0	2
Instruction to trn/yd crew improper	13	0.5	3	3	7	593,508	0.2	0	0
Shoving movement, absence of man	87	3.2	13	21	53	4,990,595	2.0	0	2
Shoving movement, failure to control	30	1.1	5	7	18	945,197	0.4	2	3
Skate, failure to remove or place	2	0.1	-	2	-	34,214	0.0	0	0
Failure to stretch cars before shoving	3	0.1	-	1	2	68,150	0.0	0	0
Failure to couple	11	0.4	2	3	6	221,007	0.1	0	0
Moving cars-load ramp,etc, not in pos	1	0.0	-	-	1	11,620	0.0	0	0
Passed couplers	45	1.6	1	26	18	594,164	0.2	0	0
Retarder, improper manual operation	8	0.3	1	1	6	137,471	0.1	0	0
Retarder yard skate improperly applied	1	0.0	1	-	-	10,344	0.0	0	0
Portable derail, improperly applied	1	0.0	-	1	-	38,064	0.0	0	0
Other general switching rules	36	1.3	8	7	21	1,187,718	0.5	0	5
Failure to stop train in clear	17	0.6	9	1	7	478,105	0.2	0	1
Motor car/on-trk rules, fail to comply	12	0.4	4	-	8	290,923	0.1	0	5
Movement without authority - rr emp	2	0.1	1	-	1	116,197	0.0	0	0
Fail to comply with trn order, etc.	3	0.1	3	-	-	172,382	0.1	0	1
Trn orders, trk warrants, radio error	1	0.0	-	1	-	677,700	0.3	0	0
Trn orders, trk warrants, written err	1	0.0	-	-	1	11,800	0.0	0	0
Other main track authority causes	6	0.2	2	2	2	1,109,473	0.4	0	0
Improper train make-up at init term	6	0.2	-	5	1	1,816,264	0.7	0	0
Improper placement of cars in train	2	0.1	-	2	-	51,364	0.0	0	0
Buff/slack action excess, trn handling	40	1.5	1	37	2	3,088,875	1.2	0	0
Buff/slack action excess, trn make-up	14	0.5	-	11	3	428,957	0.2	0	0
Lat DB force on curve xcess trn hndlng	9	0.3	-	8	1	235,019	0.1	0	0
Lat DB force on curve excess, make-up	2	0.1	-	2	-	548,172	0.2	0	0
Lat drawbar force-short/long car combo	12	0.4	-	12	-	436,175	0.2	0	0
Improper train make-up	3	0.1	-	2	1	118,863	0.0	0	0
Improper train inspection	1	0.0	-	-	1	10,000	0.0	0	0
Automatic brake, insufficient	1	0.0	-	-	1	22,600	0.0	0	0
Automatic brake, excessive	1	0.0	-	-	1	22,077	0.0	0	0
Automatic brake, other improper use	3	0.1	-	3	-	2,383,500	1.0	0	0
Fail to allow air brks to release	4	0.1	-	3	1	220,437	0.1	0	0

TABLE 5-9 TRAIN ACCIDENTS BY SPECIFIC CAUSE AND TYPE, 1998

(CONTINUED)

MAJOR CAUSE= Human Factors

	Total		Type of Accident			Reportable Damage		Casualty	
	Cnt	%	Coll	Der	Othr	Amount	%	Kld	Nonf
Fail to cut-in brake valves-loco	3	0.1	-	2	1	1,254,000	0.5	0	2
Dynamic brake, too rapid adjustment	1	0.0	-	1	-	13,700	0.0	0	0
Dynamic brake, other improper use	2	0.1	-	2	-	445,000	0.2	0	0
Throttle (power), improper use	3	0.1	-	3	-	106,527	0.0	0	0
Throttle (power), too rapid adjustment	1	0.0	-	1	-	53,700	0.0	0	0
Excessive horsepower	2	0.1	-	2	-	80,727	0.0	0	0
Independent brake, improper use	8	0.3	3	4	1	232,079	0.1	0	1
Failure to actuate off independent brk	1	0.0	-	-	1	7,750	0.0	0	0
Other train handling/makeup	10	0.4	1	6	3	990,882	0.4	0	1
Coupling speed excessive	17	0.6	-	4	13	614,920	0.2	0	2
Switch movement, excessive speed	11	0.4	2	2	7	218,998	0.1	0	2
Train inside yard limits, excess speed	5	0.2	1	3	1	466,342	0.2	0	0
Failure to comply with restricted speed	22	0.8	11	6	5	3,236,816	1.3	0	12
Train outside yd limits(nonblk),exc spd	2	0.1	-	2	-	322,128	0.1	0	0
Speed, other	7	0.3	1	2	4	331,067	0.1	0	3
Spring Swtch not clear before reverse	2	0.1	-	1	1	17,962	0.0	0	0
Switch improperly lined	142	5.2	16	89	37	6,705,072	2.7	0	10
Switch not latched or locked	13	0.5	-	13	-	483,927	0.2	0	0
Switch previously run through	33	1.2	-	26	7	795,734	0.3	0	0
Moveable point trk frog improper lined	2	0.1	-	2	-	38,800	0.0	0	0
Use of switches, other	5	0.2	-	5	-	92,244	0.0	0	1
Other causes relating to cab signals	1	0.0	-	1	-	92,825	0.0	0	0
Human factors - track	6	0.2	-	5	1	1,174,854	0.5	0	0
Human factors -motive power & equipment	1	0.0	-	-	1	17,448	0.0	0	0
Other train operation/human factors	31	1.1	6	11	14	2,175,805	0.9	0	1
-- Total	971	35.4	125	446	400	55,639,936	22.4	3	71

MAJOR CAUSE= Signal Defects

	Total		Type of Accident			Reportable Damage		Casualty	
	Cnt	%	Coll	Der	Othr	Amount	%	Kld	Nonf
Automatic trn control sys inoperative	-	-	-	-	-	6,500	0.0	-	-
Classyard autocontrol sys switch fail	5	0.2	-	3	2	44,396	0.0	0	0
Class yd auto ctrl sys retarder fail	19	0.7	3	2	14	446,353	0.2	0	0
Power device interlocking failure	1	0.0	-	1	-	14,500	0.0	0	0
Power switch failure	5	0.2	-	3	2	65,055	0.0	0	0
Radio communication equipment failure	1	0.0	-	1	-	36,685	0.0	0	0
Other communication equipment failure	3	0.1	-	1	2	50,354	0.0	0	0
Other signal failures	4	0.1	1	3	-	209,973	0.1	0	2
-- Total	38	1.4	4	14	20	873,816	0.4	0	2

TABLE 5-9 TRAIN ACCIDENTS BY SPECIFIC CAUSE AND TYPE, 1998

MAJOR CAUSE= Track Defects

	Total		Type of Accident			Reportable Damage		Casualty	
	Cnt	%	Coll	Der	Othr	Amount	%	Kld	Nonf
Roadbed settled or soft	28	1.0	-	26	2	3,104,305	1.3	0	0
Washout/rain/slide/etc. dmg -track	12	0.4	-	11	1	3,596,717	1.4	0	0
Other roadbed defects	3	0.1	-	3	-	774,366	0.3	0	0
Cross level of track irregular(joints)	30	1.1	-	30	-	1,941,888	0.8	0	0
Cross level track irreg.(not at joints)	30	1.1	-	30	-	2,739,998	1.1	0	1
Deviate frm uniform top of rail profile	5	0.2	-	5	-	1,078,599	0.4	0	0
Disturbed ballast section	2	0.1	-	2	-	634,211	0.3	0	0
Insufficient ballast section	1	0.0	-	1	-	8,000	0.0	0	0
Superelevation improper, excessive,etc.	4	0.1	-	4	-	453,602	0.2	0	0
Superelevation runoff improper	2	0.1	-	1	1	1,202,692	0.5	0	1
Trk alignmnt irreg-not buckled/sunkink	10	0.4	-	10	-	1,754,733	0.7	0	0
Track alignment irreg(buckled/sunkink)	45	1.6	-	44	1	8,795,088	3.5	0	0
Wide gage(defective/missing crossties)	168	6.1	1	151	16	6,481,081	2.6	0	1
Wide gage(spikes/other rail fasteners)	20	0.7	-	19	1	508,155	0.2	0	0
Wide gage(loose,broke, etc, gage rods)	10	0.4	-	9	1	192,098	0.1	0	0
Wide gage (due to worn rails)	11	0.4	-	10	1	350,402	0.1	0	0
Other track geometry defects	17	0.6	-	15	2	688,931	0.3	0	0
Bolt hole crack or break	7	0.3	-	7	-	333,777	0.1	0	0
Broken base of rail	56	2.0	-	54	2	11,096,341	4.5	0	1
Broken weld (field)	6	0.2	-	6	-	2,070,407	0.8	0	0
Defective or missing crossties	13	0.5	-	13	-	896,442	0.4	0	1
Defect/missing spike-oth rail fastener	2	0.1	-	2	-	114,889	0.0	0	0
Detail fracture - shelling/head check	22	0.8	-	21	1	6,506,117	2.6	0	1
Engine burn fracture	1	0.0	-	1	-	127,584	0.1	0	0
Head and web sep(outside jt bar limit)	28	1.0	-	27	1	3,361,524	1.4	0	1
Head & web separation-in jt bar limit	5	0.2	-	5	-	353,750	0.1	0	0
Horizontal split head	4	0.1	-	4	-	161,685	0.1	0	0
Joint bar broken (compromise)	2	0.1	-	2	-	21,831	0.0	0	0
Joint bar broken (noninsulated)	6	0.2	-	6	-	1,491,749	0.6	0	0
Joint bolts, broken, or missing	6	0.2	-	6	-	141,950	0.1	0	0
Mismatched rail-head contour	2	0.1	-	2	-	61,909	0.0	0	0
Piped rail	1	0.0	-	1	-	12,500	0.0	0	0
Rail defect with joint bar repair	3	0.1	-	3	-	658,721	0.3	0	0
Transverse/compound fissure	43	1.6	1	41	1	8,506,483	3.4	0	0
Vertical split head	24	0.9	-	23	1	4,020,169	1.6	1	0

(CONTINUED)

TABLE 5-9 TRAIN ACCIDENTS BY SPECIFIC CAUSE AND TYPE, 1998

MAJOR CAUSE= Track Defects

	Total		Type of Accident			Reportable Damage		Casualty	
	Cnt	%	Coll	Der	Othr	Amount	%	Kld	Nonf
Worn rail	10	0.4	-	9	1	1,109,511	0.4	0	0
Other rail and joint bar defects	20	0.7	-	20	-	4,615,445	1.9	0	3
Derail, defective	3	0.1	-	3	-	133,370	0.1	0	0
Guard rail loose/broken or mislocated	4	0.1	-	3	1	1,865,400	0.8	0	0
Retarder worn, broken, malfunctioning	13	0.5	3	2	8	263,621	0.1	0	0
Retarder yard skate defective	1	0.0	-	1	-	12,100	0.0	0	0
Spring/power swtch mech. malfunction	1	0.0	-	1	-	48,305	0.0	0	0
Stock rail worn, broken, disconnected	5	0.2	-	4	1	575,203	0.2	0	0
Switch (hand op) stand mechanism defect	3	0.1	-	3	-	52,419	0.0	0	0
Swtch connect/operate rod broke/defect	3	0.1	-	3	-	25,271	0.0	0	0
Switch damaged or out of adjustment	32	1.2	1	27	4	1,342,206	0.5	0	0
Switch lug/crank broken	2	0.1	-	2	-	130,300	0.1	0	0
Switch out of adj. insuff. anchoring	2	0.1	-	2	-	100,199	0.0	0	0
Switch point worn or broken	83	3.0	-	77	6	2,913,112	1.2	0	0
Switch rod worn, bent, broken, etc.	3	0.1	-	3	-	106,832	0.0	0	0
Turnout frog (rigid) worn, or broken	3	0.1	-	3	-	185,087	0.1	0	0
Turnout frog(self guarded)-worn/broken	2	0.1	-	2	-	44,798	0.0	0	0
Switch pt gap(btwn swt pt & stock rail)	21	0.8	-	21	-	607,165	0.2	0	0
Oth frog, switch, trk appliance defect	18	0.7	-	17	1	645,159	0.3	0	0
Bridge misalignment or failure	4	0.1	-	4	-	945,831	0.4	0	0
Flangeway clogged	3	0.1	-	3	-	69,642	0.0	0	0
Engineering design or construction	5	0.2	-	3	2	263,838	0.1	0	0
Other way and structure defect	30	1.1	2	2	26	1,074,200	0.4	0	0
-- Total	900	32.8	8	810	82	91,371,708	36.8	1	10

TABLE 5-10 TRAIN ACCIDENTS BY TYPE TRACK AND CLASS, 1998

Trk - Cls		Total		Type of Accident				Reportable Damage	Casualty		Causes					
		Cnt	%	Coll	Der	HRC	Othr	Amount	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Main	1	171	6.2	10	132	7	22	13,498,943	0	8	11	7	42	40	2	69
	2	242	8.8	12	191	17	22	29,476,908	0	20	44	17	39	43	1	98
	3	258	9.4	12	181	29	36	58,089,088	3	44	60	29	47	35	1	86
	4	322	11.7	9	168	94	51	64,431,118	34	118	74	94	51	45	-	58
	5	66	2.4	4	33	17	12	16,432,584	5	22	16	17	12	14	-	7
	6	14	0.5	1	4	-	9	1,597,212	0	12	4	-	3	3	-	4
	?	1	0.0	-	1	-	-	58,109	0	0	1	-	-	-	-	-
	X	25	0.9	1	23	1	-	1,101,938	0	0	2	1	1	1	-	20
	-Sub	1,099	40.0	49	733	165	152	184,685,900	42	224	212	165	195	181	4	342
Yard	1	1,137	41.4	82	677	2	376	33,939,615	2	28	67	2	577	120	25	346
	2	81	3.0	9	49	1	22	1,852,871	0	2	3	1	33	8	6	30
	3	10	0.4	1	6	-	3	337,213	0	0	-	-	5	-	-	5
	4	29	1.1	3	16	-	10	836,567	0	0	2	-	16	4	-	7
	5	1	0.0	-	1	-	-	22,333	0	0	-	-	-	1	-	-
	6	2	0.1	1	1	-	-	19,334	0	0	-	-	1	-	-	1
	?	1	0.0	-	1	-	-	24,000	0	0	-	-	-	-	-	1
	X	48	1.7	2	34	-	12	1,360,053	0	0	1	-	18	7	3	19
	-Sub	1,309	47.7	98	785	3	423	38,391,986	2	30	73	3	650	140	34	409
Side	1	74	2.7	6	50	-	18	4,621,621	0	0	6	-	35	5	-	28
	2	15	0.5	1	13	-	1	1,377,499	0	0	-	-	3	3	-	9
	3	8	0.3	1	6	-	1	973,479	0	2	2	-	3	1	-	2
	4	2	0.1	-	1	-	1	182,500	0	0	1	-	1	-	-	-
	5	1	0.0	-	1	-	-	424,900	0	0	-	-	-	-	-	1
	X	1	0.0	-	1	-	-	34,500	0	0	-	-	-	-	-	1
	-Sub	101	3.7	8	72	-	21	7,614,499	0	2	9	-	42	9	-	41
Ind.	1	155	5.6	6	110	-	39	8,096,492	0	8	4	-	65	16	-	70
	2	17	0.6	1	10	1	5	1,159,317	0	1	-	1	5	1	-	10
	3	6	0.2	1	5	-	-	1,235,475	0	0	-	-	-	2	-	4
	4	4	0.1	-	2	-	2	159,833	0	0	1	-	2	-	-	1
	?	5	0.2	1	4	-	-	192,100	0	0	1	-	2	1	-	1
	X	24	0.9	-	19	-	5	1,408,296	0	3	2	-	4	7	-	11
	-Sub	211	7.7	9	150	1	51	12,251,513	0	12	8	1	78	27	-	97
Unk	?	25	0.9	4	17	1	3	5,347,790	0	3	5	1	6	2	-	11
	-Sub	25	0.9	4	17	1	3	5,347,790	0	3	5	1	6	2	-	11
Total		2,745	100	168	1,757	170	650	248,291,688	44	271	307	170	971	359	38	900

TABLE 5-11 TRAIN ACCIDENTS BY TYPE TRACK AND CONSIST SPEED, 1998

Trk - Spd Rng		Total		Type of Accident				Reportable Damage	Casualty		Causes					
		Cnt	%	Coll	Der	HRC	Othr	Amount	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Main	?	22	0.8	5	10	-	7	1,351,084	0	2	4	-	2	12	-	4
	1 - 9	228	8.3	10	175	8	35	10,097,765	0	8	27	8	83	21	3	86
	10-19	236	8.6	16	184	12	24	22,352,726	1	27	35	12	63	44	-	82
	20-29	209	7.6	12	160	21	16	42,856,530	1	23	48	21	23	38	-	79
	30-39	127	4.6	3	89	22	13	39,480,751	1	41	32	22	13	17	1	42
	40-49	126	4.6	-	69	41	16	39,985,786	18	41	32	41	5	20	-	28
	50-59	67	2.4	1	34	24	8	19,406,068	9	37	23	24	1	11	-	8
	60-69	42	1.5	2	6	19	15	4,671,492	8	23	5	19	2	12	-	4
	>= 70	42	1.5	-	6	18	18	4,483,698	4	22	6	18	3	6	-	9
	-Sub	1,099	40.0	49	733	165	152	184,685,900	42	224	212	165	195	181	4	342
Yard	?	29	1.1	-	10	-	19	1,202,293	0	1	-	-	9	16	1	3
	1 - 9	1,123	40.9	89	686	1	347	31,256,719	2	20	67	1	570	103	24	358
	10-19	141	5.1	9	77	1	54	4,942,371	0	8	4	1	66	17	9	44
	20-29	9	0.3	-	7	1	1	470,528	0	1	1	1	3	2	-	2
	30-39	2	0.1	-	1	-	1	399,829	0	0	-	-	1	-	-	1
	40-49	1	0.0	-	1	-	-	23,975	0	0	1	-	-	-	-	-
	60-69	4	0.1	-	3	-	1	96,271	0	0	-	-	1	2	-	1
	-Sub	1,309	47.7	98	785	3	423	38,391,986	2	30	73	3	650	140	34	409
Side	?	2	0.1	-	1	-	1	193,484	0	0	-	-	-	1	-	1
	1 - 9	68	2.5	3	51	-	14	3,489,347	0	0	5	-	29	4	-	30
	10-19	25	0.9	2	17	-	6	2,133,413	0	2	4	-	10	3	-	8
	20-29	2	0.1	-	2	-	-	460,096	0	0	-	-	1	1	-	-
	30-39	2	0.1	1	1	-	-	997,169	0	0	-	-	1	-	-	1
	40-49	1	0.0	1	-	-	-	300,000	0	0	-	-	-	-	-	1
	60-69	1	0.0	1	-	-	-	40,990	0	0	-	-	1	-	-	-
	-Sub	101	3.7	8	72	-	21	7,614,499	0	2	9	-	42	9	-	41
Ind.	?	4	0.1	-	1	-	3	154,629	0	0	-	-	2	2	-	-
	1 - 9	178	6.5	9	126	1	42	5,057,639	0	3	6	1	67	21	-	83
	10-19	22	0.8	-	21	-	1	1,691,209	0	1	1	-	6	2	-	13
	20-29	4	0.1	-	2	-	2	1,360,194	0	3	1	-	2	-	-	1
	30-39	1	0.0	-	-	-	1	770,750	0	2	-	-	1	-	-	-
	40-49	1	0.0	-	-	-	1	13,000	0	0	-	-	-	1	-	-
	50-59	1	0.0	-	-	-	1	3,204,092	0	3	-	-	-	1	-	-
	-Sub	211	7.7	9	150	1	51	12,251,513	0	12	8	1	78	27	-	97
Unk	1 - 9	16	0.6	2	13	-	1	578,737	0	0	2	-	4	2	-	8
	10-19	3	0.1	-	3	-	-	39,189	0	0	-	-	-	-	-	3
	20-29	1	0.0	-	1	-	-	1,016,500	0	0	1	-	-	-	-	-
	30-39	4	0.1	2	-	1	1	3,694,564	0	3	1	1	2	-	-	-
	40-49	1	0.0	-	-	-	1	18,800	0	0	1	-	-	-	-	-
	-Sub	25	0.9	4	17	1	3	5,347,790	0	3	5	1	6	2	-	11
Total		2,745	100	168	1,757	170	650	248,291,688	44	271	307	170	971	359	38	900

TABLE 5-12 TRAIN ACCIDENTS BY WEATHER CONDITION, 1998

		Total		Type of Accident				Reportable Damage	Casualty		Causes					
		Cnt	%	Coll	Der	HRC	Othr	Amount	Kld	Nonf	Eqp	HRC	Hmn	Othr	Sig	Trk
Dawn	Clear	62	2.3	3	39	1	19	8,436,398	0	7	13	1	23	5	-	20
	Cloudy	25	0.9	1	15	1	8	2,795,673	0	1	4	1	8	2	-	10
	Rain	9	0.3	2	4	-	3	509,975	0	0	2	-	2	4	-	1
	Fog	8	0.3	1	5	1	1	430,440	1	0	2	1	2	2	-	1
	-- Sub	104	3.8	7	63	3	31	12,172,486	1	8	21	3	35	13	-	32
Day	Clear	998	36.4	56	596	109	237	90,413,358	23	143	96	109	308	137	12	336
	Cloudy	331	12.1	28	207	26	70	22,400,252	3	30	28	26	128	34	3	112
	Rain	83	3.0	11	47	3	22	3,991,917	0	4	2	3	30	15	1	32
	Fog	10	0.4	-	5	1	4	470,672	0	0	1	1	3	2	-	3
	Sleet	1	0.0	-	1	-	-	940,400	0	0	-	-	-	-	-	1
	Snow	11	0.4	1	6	2	2	1,844,051	0	1	2	2	2	1	1	3
	-- Sub	1,434	52.2	96	862	141	335	120,060,650	26	178	129	141	471	189	17	487
Dusk	Clear	68	2.5	3	48	2	15	4,010,663	6	6	7	2	26	10	-	23
	Cloudy	31	1.1	2	19	2	8	795,189	0	3	3	2	14	2	-	10
	Rain	6	0.2	-	4	-	2	472,800	0	1	1	-	3	-	-	2
	Snow	5	0.2	-	4	1	-	1,140,549	0	0	-	1	1	2	-	1
	-- Sub	110	4.0	5	75	5	25	6,419,201	6	10	11	5	44	14	-	36
Dark	Clear	634	23.1	32	431	13	158	50,865,933	3	39	84	13	244	92	13	188
	Cloudy	301	11.0	15	220	4	62	39,700,219	4	28	44	4	111	31	3	108
	Rain	114	4.2	11	77	1	25	11,631,906	0	5	13	1	49	14	3	34
	Fog	27	1.0	2	17	1	7	4,431,868	0	2	4	1	14	2	-	6
	Sleet	2	0.1	-	2	-	-	33,500	0	0	-	-	1	1	-	-
	Snow	19	0.7	-	10	2	7	2,975,925	4	1	1	2	2	3	2	9
	-- Sub	1,097	40.0	60	757	21	259	109,639,351	11	75	146	21	421	143	21	345
Total		2,745	100	168	1,757	170	650	248,291,688	44	271	307	170	971	359	38	900

TABLE 5-13 TRAIN ACCIDENTS BY CONSIST LENGTH, 1998

Length	Total		Type of Accident				Equipment Damage		Causes					
	Cnt	%	Coll	Der	HRC	Othr	Amount	%	Eqp	HRC	Hmn	Othr	Sig	Trk
???	4	0.1	-	1	-	3	14,401	0.0	-	-	-	3	-	1
1	147	4.8	27	24	3	93	2,601,890	1.5	6	3	74	34	13	17
2-5	310	10.1	58	90	14	148	6,949,876	4.0	18	14	179	39	13	47
6-10	264	8.6	27	112	22	103	7,260,158	4.2	18	22	113	30	3	78
11-15	178	5.8	14	87	21	56	5,760,100	3.3	7	21	73	26	-	51
16-20	159	5.2	20	81	16	42	9,351,283	5.4	9	16	71	16	1	46
21-25	109	3.5	13	59	8	29	2,860,738	1.6	2	8	58	11	2	28
26-30	129	4.2	9	85	7	28	2,617,383	1.5	6	7	53	19	2	42
31-35	141	4.6	11	83	8	39	4,633,574	2.7	4	8	59	15	1	54
36-40	124	4.0	11	74	7	32	5,366,847	3.1	11	7	55	13	1	37
41-45	113	3.7	9	80	6	18	4,641,483	2.7	12	6	40	12	1	42
46-50	116	3.8	14	67	6	29	4,952,310	2.9	10	6	45	14	-	41
51-60	180	5.9	13	129	7	31	6,899,273	4.0	22	7	57	22	4	68
61-70	177	5.8	19	120	9	29	11,434,128	6.6	22	9	63	17	2	64
71-80	182	5.9	12	136	8	26	13,740,300	7.9	24	8	60	15	2	73
81-90	151	4.9	9	119	5	18	12,816,333	7.4	34	5	38	28	-	46
91-100	151	4.9	12	111	6	22	11,310,630	6.5	29	6	52	14	3	47
101-110	150	4.9	11	113	7	19	15,850,151	9.1	24	7	40	21	4	54
111-120	140	4.6	11	109	6	14	21,024,883	12.1	31	6	32	18	1	52
121-130	66	2.1	3	57	2	4	13,565,682	7.8	14	2	22	8	-	20
131-140	42	1.4	3	30	1	8	3,663,592	2.1	8	1	15	5	-	13
141-150	21	0.7	1	17	1	2	2,697,619	1.6	7	1	5	4	1	3
>= 151	20	0.7	-	19	-	1	3,661,997	2.1	3	-	6	3	-	8
-- Tot	3,074	100	307	1,803	170	794	173,674,631	100.0	321	170	1,210	387	54	932

Counts are higher since multiple consists may be involved.

TABLE 5-14 TRAIN ACCIDENTS BY TYPE TRACK AND CONSIST, 1998

Track - Equipment		Total		Avg	Type of Accident				Total Train Crew			
		Cons-ists	%	Len.	Coll	Der	HRC	Othr	Enginee-rs	Conduct-ors	Brakemen	Firemen
Main	Freight Train	908	29.5	74	54	681	113	60	4,598	868	195	22
	Psgr Train	124	4.0	10	8	18	38	60	498	131	103	36
	Commuter Train	13	0.4	7	-	1	3	9	66	13	12	-
	Work Train	12	0.4	35	2	7	-	3	97	11	6	0
	Single Car	11	0.4	1	2	-	-	9	50	1	1	0
	Cut of Cars	12	0.4	19	2	6	-	4	9	1	0	0
	Yard/ Switch	42	1.4	40	3	25	4	10	187	43	23	1
	Light loco(s)	20	0.7	7	6	4	7	3	80	18	9	0
	Maint/ Insp car	24	0.8	1	8	-	-	16	100	3	0	0
	-- Tot	1,166	37.9	61	85	742	165	174	5,685	1,089	349	59
Yard	Freight Train	468	15.2	62	35	358	2	73	2,291	457	191	6
	Psgr Train	22	0.7	9	3	16	-	3	108	22	14	3
	Work Train	2	0.1	8	-	2	-	-	5	2	1	-
	Single Car	64	2.1	1	4	10	-	50	20	6	2	0
	Cut of Cars	130	4.2	19	20	42	-	68	102	27	18	0
	Yard/ Switch	769	25.0	38	97	363	1	308	3,308	751	554	17
	Light loco(s)	70	2.3	2	21	24	-	25	298	54	31	0
	Maint/ Insp car	4	0.1	7	1	1	-	2	9	0	0	0
	-- Tot	1,529	49.7	40	181	816	3	529	6,141	1,319	811	26
Side	Freight Train	86	2.8	57	10	62	-	14	475	83	34	4
	Psgr Train	1	0.0	10	1	-	-	-	8	1	1	-
	Single Car	2	0.1	1	1	-	-	1	-	-	-	-
	Cut of Cars	6	0.2	20	1	1	-	4	7	1	1	-
	Yard/ Switch	18	0.6	38	2	9	-	7	71	18	15	1
	Light loco(s)	3	0.1	1	-	1	-	2	1	0	0	0
	Maint/ Insp car	1	0.0	1	1	-	-	-	-	-	-	-
	-- Tot	117	3.8	49	16	73	-	28	562	103	51	5
Ind.	Freight Train	130	4.2	54	6	103	1	20	670	128	69	1
	Commuter Train	1	0.0	5	-	1	-	-	8	1	0	0
	Work Train	2	0.1	11	-	1	-	1	7	2	2	-
	Single Car	8	0.3	1	1	1	-	6	12	2	2	0
	Cut of Cars	20	0.7	18	4	7	-	9	19	4	2	0
	Yard/ Switch	68	2.2	26	5	40	-	23	335	67	50	0
	Light loco(s)	2	0.1	3	1	1	-	-	8	2	1	-
	Maint/ Insp car	1	0.0	1	-	-	-	1	-	-	-	-
	-- Tot	232	7.5	39	17	154	1	60	1,059	206	126	1
Unk	Freight Train	20	0.7	81	2	16	-	2	103	19	7	1
	Psgr Train	1	0.0	8	-	-	-	1	10	1	1	-
	Commuter Train	1	0.0	4	1	-	-	-	4	1	1	-
	Yard/ Switch	7	0.2	33	4	2	1	-	41	7	6	0
	Light loco(s)	1	0.0	4	1	-	-	-	3	-	-	-
	-- Tot	30	1.0	62	8	18	1	3	161	28	15	1
---Total		3,074	100	48	307	1,803	170	794	13,608	2,745	1,352	92

Counts are higher since multiple consists may be involved.

TABLE 5-15 TRAIN ACCIDENTS BY CONSIST LENGTH AND TYPE CONSIST, 1998

Length	Freight Train	Psgr Train	Commuter Train	Work Train	Single Car	Cut of Cars	Yard/ Switch	Light loco(s)	Maint/ Insp car
???	1	2	-	-	-	-	-	-	1
1	-	7	-	-	84	1	-	29	26
2-5	35	34	4	1	1	79	92	62	2
6-10	64	50	11	2	-	22	111	4	-
11-15	57	33	-	3	-	14	71	-	-
16-20	65	11	-	1	-	3	79	-	-
21-25	39	8	-	-	-	10	51	-	1
26-30	56	-	-	2	-	6	65	-	-
31-35	75	1	-	3	-	2	60	-	-
36-40	61	-	-	1	-	5	57	-	-
41-45	65	1	-	-	-	2	45	-	-
46-50	68	-	-	1	-	4	43	-	-
51-60	122	-	-	1	-	4	53	-	-
61-70	129	-	-	-	-	3	45	-	-
71-80	152	1	-	1	-	4	24	-	-
81-90	120	-	-	-	-	1	30	-	-
91-100	121	-	-	-	-	3	26	1	-
101-110	130	-	-	-	-	3	17	-	-
111-120	124	-	-	-	-	2	14	-	-
121-130	60	-	-	-	-	-	6	-	-
131-140	33	-	-	-	-	-	9	-	-
141-150	17	-	-	-	-	-	4	-	-
>= 151	18	-	-	-	-	-	2	-	-
-- Tot	1,612	148	15	16	85	168	904	96	30

Counts are higher since multiple consists may be involved.

TABLE 5-16 INVOLVEMENT IN TRAIN ACCIDENTS BY TYPE CONSIST, 1998

	Total		Type of Accident				Type of Track					Causes					
	Cnt	%	Coll	Der	HRC	Othr	Main	Yard	Side	Ind.	Unk	Eqp	HRC	Hmn	Othr	Sig	Trk
Freight Train	1,556	53.0	76	1,204	116	160	878	452	81	127	18	235	116	384	202	9	610
Psgr Train	142	4.8	11	34	38	59	119	21	1	-	1	19	38	18	35	-	32
Commuter Train	15	0.5	1	2	3	9	13	-	-	1	1	-	3	2	2	-	8
Work Train	16	0.5	2	10	-	4	12	2	-	2	-	-	-	11	4	-	1
Single Car	81	2.8	8	11	-	62	11	60	2	8	-	5	-	37	22	10	7
Cut of Cars	157	5.4	26	54	-	77	12	120	6	19	-	12	-	98	20	9	18
Yard/ Switch	852	29.0	81	437	6	328	42	722	17	66	5	41	6	478	79	20	228
Light loco(s)	91	3.1	25	30	7	29	19	66	3	2	1	2	7	62	6	-	14
Maint/ Insp car	24	0.8	7	1	-	16	18	4	1	1	-	1	-	16	5	-	2
-- Total	2,934	100	237	1,783	170	744	1,124	1,447	111	226	26	315	170	1106	375	48	920

If more than one consist of same type in accident, then only one is counted. For example, a collision between two freight trains would be counted as one freight train.

TABLE 5-17 DAMAGE BY TRACK TYPE, 1998

	Total Damage		Equip Damage		Track Damage	
	Amount	Avg	Amount	Avg	Amount	Avg
Main	184,685,900	143,390	127,453,939	98,955	57,231,961	44,435
Yard	38,391,986	24,055	27,552,715	17,264	10,839,271	6,792
Side	7,614,499	60,916	4,481,520	35,852	3,132,979	25,064
Ind.	12,251,513	52,134	9,576,818	40,752	2,674,695	11,382
Unk	5,347,790	102,842	4,618,439	88,816	729,351	14,026
--						
Total	248,291,688	75,331	173,683,431	52,695	74,608,257	22,636

TABLE 5-18 DAMAGE BY CONSIST TYPE, 1998

	Total Damage		Equip Damage		Track Damage	
	Amount	Avg	Amount	Avg	Amount	Avg
Freight Train	198,376,345	123,062	137,117,221	85,060	61,259,124	38,002
Psgr Train	10,971,758	74,134	10,294,884	69,560	676,874	4,573
Commuter Train	558,276	37,218	488,985	32,599	69,291	4,619
Work Train	778,227	48,639	299,491	18,718	478,736	29,921
Single Car	893,341	10,510	774,656	9,114	118,685	1,396
Cut of Cars	3,529,079	21,006	3,057,813	18,201	471,266	2,805
Yard/ Switch	23,789,404	26,316	18,060,843	19,979	5,728,561	6,337
Light loco(s)	2,955,033	30,782	2,455,647	25,580	499,386	5,202
Maint/ Insp car	1,334,011	44,467	1,125,091	37,503	208,920	6,964
99	5,106,214	23,001	8,800	40	5,097,414	22,961
-- Total	248,291,688	75,331	173,683,431	52,695	74,608,257	22,636

CHAPTER 6

TRAIN ACCIDENTS INVOLVING CONSISTS TRANSPORTING HAZARDOUS MATERIAL

Hazardous Material is any substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, or property when transported in commerce, and which has been so designated.

An incident resulting in damage to cars transporting hazardous material, or causing a release of the hazardous material, is not of and by itself a basis for reporting to FRA under the accident/incident rules. First, the incident must satisfy the criteria for train accident reporting described in the previous chapter. Namely, there must be total reportable damage to the rail equipment and track above the threshold. In 1997 the threshold was $6,500, and in 1998 it was $6,600.

All evacuations, including precautionary ones, in reponse to a potential release of hazardous material are required to be reported even if an actual release did not occur.

Additional information concerning any unintentional release of hazardous material during transportation by rail or other modes, is available through the Research and Special Programs Administration within the U. S. Department of Transportation.

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CHAPTER 6

TRAIN ACCIDENTS/INVOLVING CONSISTS TRANSPORTING HAZARDOUS MATERIALS

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6–1 HAZMAT CARS IN TRAIN ACCIDENTS

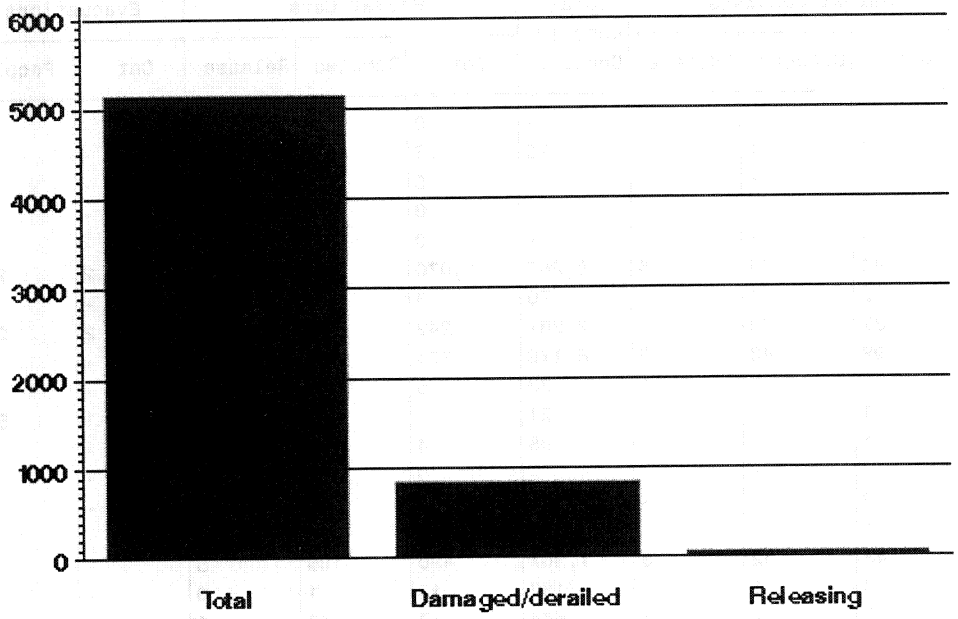

TABLE 6-1 CONSISTS TRANSPORTING HAZMAT, BY RAILROAD, 1998

	Hazmat Consists			Total Cars In Consist	Hazmat Cars			Evacuations	
	Cnt	Damaged	Release		Cnt	Damaged	Release	Cnt	People
ALS	-	-	-	-	0	8	0	-	0
ARR	1	1	-	76	76	2	0	-	0
ATK	-	-	-	-	0	0	0	-	0
BAR	-	-	-	-	0	0	0	-	0
BLE	-	-	-	-	0	0	0	-	0
BNSF	144	73	6	8,287	1,070	241	13	2	250
BRC	2	1	-	70	3	1	0	-	0
CR	37	33	5	2,267	242	83	5	2	250
CSX	99	43	9	6,176	774	95	12	-	0
DH	1	1	1	30	5	1	1	-	0
DME	1	1	-	21	1	1	0	1	500
DMIR	1	-	-	98	4	0	0	-	0
DWP	-	-	-	-	0	0	0	-	0
EJE	3	-	-	157	50	0	0	-	0
FEC	1	-	-	32	1	0	0	-	0
GRP3	43	32	3	1,367	420	109	5	-	0
GRS	3	1	-	162	13	1	0	-	0
GTW	7	7	1	544	17	17	1	1	20
GWWR	4	1	-	57	14	1	0	-	0
IC	34	21	3	2,557	416	57	5	1	75
IHB	5	2	1	314	34	8	2	-	0
IMRL	11	2	1	721	23	4	1	-	0
KCS	9	3	1	492	47	7	2	1	3
LI	-	-	-	-	0	0	0	-	0
MNCW	-	-	-	-	0	0	0	-	0
MRL	6	2	-	238	25	4	0	-	0
NICD	-	-	-	-	0	0	0	-	0
NIRC	-	-	-	-	0	0	0	-	0
NJTR	-	-	-	-	0	0	0	-	300
NS	29	7	2	1,597	191	11	2	1	10
PAL	3	3	-	34	34	5	0	-	0
PCMZ	-	-	-	-	0	0	0	-	0
PTRA	7	6	-	213	14	9	0	-	0
SCAX	-	-	-	-	0	0	0	-	0
SEPA	-	-	-	-	0	0	0	-	0
SOO	9	5	2	683	92	11	2	1	50
TM	2	2	-	223	8	2	0	1	350
TRRA	-	-	-	-	0	0	0	-	0
UP	163	70	8	9,659	1,573	172	16	1	250
URR	-	-	-	-	0	0	0	-	0
WC	3	-	-	208	6	0	0	-	0
Tot	628	317	43	36,283	5,153	850	67	12	2,058

TABLE 6-2 CONSISTS TRANSPORTING HAZMAT, BY STATE, 1998

	Hazmat Consists			Total Cars In Consist	Hazmat Cars			Evacuations	
	Cnt	Damaged	Release		Cnt	Damaged	Release	Cnt	People
AL	18	5	-	1,047	106	12	0	-	0
AK	1	1	-	76	76	2	0	-	0
AZ	10	8	-	355	168	36	0	-	0
AR	15	8	1	888	180	20	2	-	0
CA	35	18	1	1,619	216	52	1	-	0
CO	17	7	-	958	124	30	0	-	0
CT	-	-	-	-	0	0	0	-	0
DE	-	-	-	-	0	0	0	-	0
DC	-	-	-	-	0	0	0	-	0
FL	9	3	2	529	48	5	2	-	0
GA	11	3	-	596	78	3	0	-	0
ID	8	3	1	532	67	5	1	-	0
IL	46	28	5	2,500	333	71	9	2	275
IN	12	7	-	847	100	13	0	1	20
IA	15	5	1	908	30	7	1	1	250
KS	13	4	1	692	40	12	3	1	200
KY	15	8	-	840	137	19	0	-	0
LA	18	11	1	819	210	42	2	1	3
ME	3	2	-	125	48	7	0	-	0
MD	3	-	-	250	42	0	0	-	0
MA	2	-	-	108	4	0	0	-	0
MI	14	9	1	664	49	22	1	-	0
MN	17	7	-	1,198	149	13	0	1	500
MS	8	3	1	836	142	8	3	-	0
MO	13	5	1	690	78	21	1	-	0
MT	14	5	-	697	87	19	0	-	0
NE	21	10	1	1,393	144	26	2	-	0
NV	7	3	1	439	113	12	5	-	0
NH	1	1	-	54	9	1	0	-	0
NJ	6	6	2	316	11	11	2	-	300
NM	11	3	-	802	92	27	0	-	0
NY	7	6	1	256	17	9	1	-	0
NC	7	4	-	484	65	7	0	-	0
ND	6	3	1	451	36	6	1	-	0
OH	16	11	2	1,123	183	29	2	-	0
OK	12	7	-	695	91	17	0	-	0
OR	12	4	1	805	65	7	1	-	0
PA	20	14	3	1,037	80	38	3	1	50
SC	9	6	2	389	49	24	4	-	0
SD	3	1	-	148	19	2	0	-	0
TN	32	9	3	2,516	281	17	3	-	0
TX	91	55	4	4,819	992	132	8	2	400
UT	10	6	-	358	53	14	0	-	0
VT	-	-	-	-	0	0	0	-	0
VA	7	3	1	400	19	3	1	1	10
WA	14	7	1	724	116	19	3	-	0
WV	4	2	2	352	90	16	3	-	0
WI	6	3	1	404	23	4	1	1	50
WY	9	3	1	544	93	10	1	-	0
Tot	628	317	43	36,283	5,153	850	67	12	2,058

TABLE 6-3 CONSISTS TRANSPORTING HAZMAT, BY SUBCAUSE, 1998

	Hazmat Consists			Total Cars In Consist	Hazmat Cars			Evacuations	
	Cnt	Damaged	Release		Cnt	Damaged	Release	Cnt	People
Brakes	11	4	1	711	156	23	1	1	50
Trailer/Container on Flatcar	2	-	-	118	2	-	-	-	-
Body	8	4	1	633	121	6	3	1	200
Coupler & Draft System	9	1	-	774	99	7	0	-	0
Truck Components	24	14	4	1,918	283	58	5	-	0
Axles & Journal Bearings	22	11	2	1,888	332	25	4	2	95
Wheels	10	4	1	760	51	7	1	1	200
Locomotives	2	1	-	126	6	1	0	-	0
Doors	1	-	-	47	2	0	0	-	0
Other Mechanical	-	-	-	-	0	0	0	-	0
Brakes, Use of	39	30	2	1,481	174	51	2	1	10
Flagging, Fixed, Hand & Radio	9	5	-	548	44	8	0	-	0
General Switching Rules	90	55	4	2,994	529	117	6	-	0
Main Track Authority	6	4	-	393	62	6	0	-	0
Train Handling/Makeup	32	9	-	2,412	239	34	0	1	250
Speed	16	6	2	1,040	96	16	2	-	0
Switches, Use of	35	20	3	1,392	147	51	10	-	300
Cab Signals	1	-	-	102	5	-	-	-	-
Miscellaneous Human Factors	14	6	1	627	79	15	1	-	0
Environmental Conditions	6	5	-	439	39	12	0	-	0
Loading Procedures	15	3	2	1,031	87	4	3	2	353
Highway-Rail Incidents	23	4	1	1,099	122	5	1	-	0
Unusual Operational Situations	27	11	1	1,635	169	21	1	-	0
Other Miscellaneous Causes	32	21	5	1,959	277	53	7	1	50
Signal Defects	5	2	-	153	22	3	0	-	0
Roadbed	11	6	4	660	101	22	8	-	0
Track Geometry	64	37	4	3,570	742	137	7	2	550
Rail, Joint Bar & Anchors	63	34	4	4,359	690	122	4	-	0
Frogs, Switches, Appliances	44	17	1	2,893	392	40	1	-	0
Other Track Defects	7	3	-	521	85	6	0	-	0
Total	628	317	43	36,283	5,153	850	67	12	2,058

TABLE 6-4 CONSISTS TRANSPORTING HAZMAT, BY ACCIDENT TYPE, 1998

	Hazmat Consists			Total Cars In Consist	Hazmat Cars			Evacuations	
	Cnt	Damaged	Release		Cnt	Damaged	Release	Cnt	People
Derailments	428	212	33	27,928	4,073	643	52	11	2,048
Head on collision	-	-	-	-	0	0	0	-	0
Rear end collision	4	-	-	251	21	0	0	-	0
Side collision	29	15	3	1,399	128	29	6	-	0
Raking collision	4	2	1	179	51	19	2	-	0
Highway-rail Impact	23	4	1	1,099	122	5	1	-	0
RR crossing collision	3	-	-	239	11	0	0	-	0
Obstruction impact	7	3	-	375	31	8	0	-	0
Fire/violent rupture	-	-	-	-	0	0	0	-	0
Other impacts	67	47	4	2,247	269	88	5	1	10
Other events	63	34	1	2,566	447	58	1	-	0
-- Total	628	317	43	36,283	5,153	850	67	12	2,058

CHAPTER 7

HIGHWAY-RAIL INCIDENTS

Any impact, regardless of severity, between a railroad on-track equipment consist and any user of a public or private crossing site, is to be reported on Form FRA F 6180.57. The crossing site includes sidewalks and pathways at, or associated with, the crossing.

In addition, whenever a highway-rail grade crossing accident/incident results in reportable damages greater than the current reporting threshold used for Rail Equipment Accident/Incident reporting, a Form FRA F 6180.54 must be completed. The reporting threshold for accidents for 1997 was $6,500, and in 1998 it was $6,600.

Highway users include but are not limited to: automobiles, buses, trucks, motorcycles, bicycles, recreational vehicles, farm vehicles, construction vehicles, roadway maintenance vehicles, and pedestrians.

Suicides or attempted suicides, as determined by a coroner or other public authority, at highway-rail crossing sites are not reportable. However, the event may be reportable under other criteria. For example, reportable conditions to others must be recorded on Form FRA F 6180.55a, e.g., the engineer sustained a fractured arm. Likewise, if the event caused reportable damage above the current monetary threshold for Rail Equipment Accidents/Incidents, a Form FRA F 6180.54 must be prepared. In these situations, the type of accident is coded as an "Obstruction".

Incidents involving highway users who have unsuccessfully attempted to avoid striking or being struck by a railroad consist at a crossing site are to be reported, regardless of where the actual impact between the consist and the highway user occurred.

Each reportable casualty resulting from a highway-rail crossing impact must also be reported on Form FRA F 6180.55a.

If the accident/incident satisfies the reporting requirements for rail equipment accidents (e.g., reportable railroad damage exceeds threshold), Form FRA F 6180.54 must also be completed by all railroads involved, including the railroad with track maintenance responsibility.

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CHAPTER 7

HIGHWAY-RAIL INCIDENTS

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7—1 TIME OF DAY IN CROSSING INCIDENTS, 1998

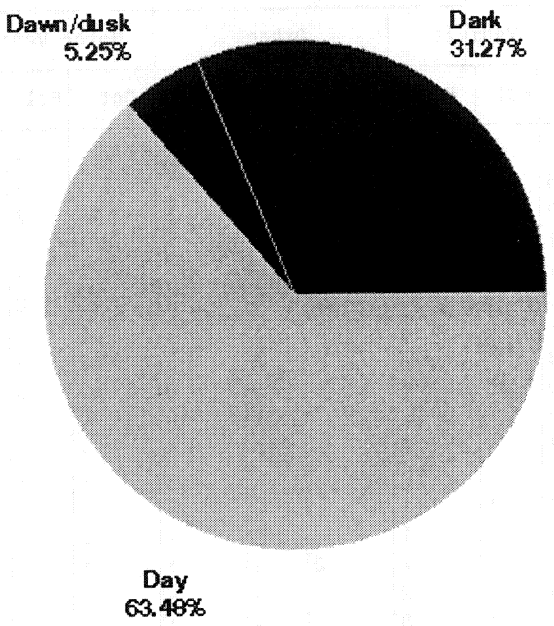

TABLE 7-1 TOTAL HIGHWAY-RAIL INCIDENTS BY RAILROAD, 1998

	Totals			At Public Crossing						At Private Crossing					
				Motor Vehicle			Other			Motor Vehicle			Other		
	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
ALS	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
ARR	4	-	2	3	-	2	-	-	-	1	-	-	-	-	-
ATK	170	50	125	132	35	85	13	8	5	24	7	34	1	-	1
BAR	2	-	-	1	-	-	-	-	-	1	-	-	-	-	-
BLE	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
BNSF	541	96	183	438	75	157	24	15	7	77	6	19	2	-	-
BRC	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
CR	168	14	39	148	11	34	8	3	3	12	-	2	-	-	-
CSX	421	55	161	360	38	145	18	9	6	43	8	10	-	-	-
DH	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-
DME	14	-	2	14	-	2	-	-	-	-	-	-	-	-	-
DMIR	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-
DWP	2	1	1	2	1	1	-	-	-	-	-	-	-	-	-
EJE	8	-	1	6	-	1	-	-	-	2	-	-	-	-	-
FEC	18	1	8	15	-	7	2	1	1	1	-	-	-	-	-
GRS	5	-	2	5	-	2	-	-	-	-	-	-	-	-	-
GTW	14	4	9	12	4	8	1	-	1	1	-	-	-	-	-
GWWR	5	1	1	4	-	1	1	1	-	-	-	-	-	-	-
IC	126	13	51	112	12	49	2	-	1	11	-	1	1	1	-
IHB	10	-	2	10	-	2	-	-	-	-	-	-	-	-	-
IMRL	42	2	26	34	-	24	3	1	1	5	1	1	-	-	-
KCS	190	25	88	174	23	81	2	-	1	13	2	6	1	-	-
LI	6	2	3	2	-	-	4	2	3	-	-	-	-	-	-
MBTA	3	1	-	2	-	-	1	1	-	-	-	-	-	-	-
MNCW	6	-	-	5	-	-	-	-	-	1	-	-	-	-	-
MRL	16	-	6	11	-	5	-	-	-	5	-	1	-	-	-
NICD	12	3	2	9	-	1	-	-	-	3	3	1	-	-	-
NIRC	12	1	8	9	1	6	2	-	1	1	-	1	-	-	-
NJTR	8	5	2	5	3	1	3	2	1	-	-	-	-	-	-
NS	493	44	140	419	33	125	13	4	6	60	6	9	1	1	-
OTHE	350	8	102	300	8	89	2	-	1	48	-	12	-	-	-
PAL	12	-	1	11	-	1	-	-	-	1	-	-	-	-	-
PCMZ	2	-	1	2	-	1	-	-	-	-	-	-	-	-	-
PTRA	5	1	2	3	1	2	-	-	-	2	-	-	-	-	-
SCAX	8	4	-	5	1	-	3	3	-	-	-	-	-	-	-
SEPA	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
SOO	49	5	22	42	3	21	3	1	-	4	1	1	-	-	-
TM	13	1	9	11	1	8	1	-	1	1	-	-	-	-	-
UP	681	89	262	574	71	235	16	8	3	91	10	24	-	-	-
WC	74	5	38	64	4	34	4	1	3	5	-	1	1	-	-
WE	11	-	1	9	-	1	-	-	-	2	-	-	-	-	-
--- Tot	3,508	431	1,303	2,960	325	1,134	126	60	45	415	44	123	7	2	1

TABLE 7-2 TOTAL HIGHWAY-RAIL INCIDENTS BY STATE, 1998

	Totals			At Public Crossing						At Private Crossing					
				Motor Vehicle			Other			Motor Vehicle			Other		
	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
AK	4	-	2	3	-	2	-	-	-	1	-	-	-	-	-
AL	145	11	46	134	11	41	-	-	-	11	-	5	-	-	-
AR	116	24	45	104	20	43	-	-	-	11	4	2	1	-	-
AZ	35	4	9	29	2	9	3	2	-	3	-	-	-	-	-
CA	190	32	64	142	19	44	17	11	3	30	2	16	1	-	1
CO	32	4	13	23	2	11	2	1	-	7	1	2	-	-	-
CT	10	1	4	8	1	3	-	-	-	2	-	1	-	-	-
DC	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-
DE	5	-	3	4	-	2	-	-	-	1	-	1	-	-	-
FL	75	7	30	63	3	25	5	3	2	7	1	3	-	-	-
GA	140	13	35	114	7	30	5	3	-	20	2	5	1	1	-
IA	104	3	30	88	2	28	2	-	-	14	1	2	-	-	-
ID	27	4	14	25	4	14	-	-	-	2	-	-	-	-	-
IL	199	30	67	165	23	60	12	7	4	22	-	3	-	-	-
IN	194	25	80	171	21	74	5	1	4	18	3	2	-	-	-
KS	71	9	30	61	8	29	1	-	-	9	1	1	-	-	-
KY	73	5	20	56	-	15	3	1	2	14	4	3	-	-	-
LA	214	25	101	188	21	86	4	1	1	20	2	14	2	1	-
MA	5	1	-	2	-	-	1	1	-	2	-	-	-	-	-
MD	15	-	2	11	-	2	-	-	-	4	-	-	-	-	-
ME	8	-	3	7	-	3	-	-	-	1	-	-	-	-	-
MI	104	11	46	94	9	40	2	1	1	8	1	5	-	-	-
MN	116	14	47	103	12	43	5	1	2	7	1	2	1	-	-
MO	87	14	25	70	10	18	2	2	-	15	2	7	-	-	-
MS	133	24	63	122	22	55	2	1	1	9	1	7	-	-	-
MT	27	4	11	19	4	10	-	-	-	8	-	1	-	-	-
NC	109	15	48	88	11	39	5	2	1	16	2	8	-	-	-
ND	23	6	7	19	6	4	1	-	1	3	-	2	-	-	-
NE	59	11	19	48	10	18	1	1	-	10	-	1	-	-	-
NH	2	-	-	2	-	-	-	-	-	-	-	-	-	-	-
NJ	17	5	4	12	3	2	4	2	2	1	-	-	-	-	-
NM	17	5	6	8	3	1	6	2	4	3	-	1	-	-	-
NV	4	1	2	1	1	-	-	-	-	3	-	2	-	-	-
NY	29	2	6	20	-	2	5	2	4	4	-	-	-	-	-
OH	154	15	45	132	12	39	10	2	5	12	1	1	-	-	-
OK	66	12	39	57	10	36	3	2	1	6	-	2	-	-	-
OR	44	5	9	29	4	6	1	1	-	14	-	3	-	-	-
PA	63	1	21	58	-	20	-	-	-	5	1	1	-	-	-
RI	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
SC	78	6	32	73	5	31	2	1	1	3	-	-	-	-	-
SD	15	-	6	14	-	6	-	-	-	1	-	-	-	-	-
TN	104	14	26	86	9	22	4	3	1	14	2	3	-	-	-
TX	322	45	158	285	35	141	3	1	2	34	9	15	-	-	-
UT	24	5	6	22	4	6	1	1	-	1	-	-	-	-	-
VA	51	2	17	35	-	16	1	-	-	15	2	1	-	-	-
VT	4	-	-	3	-	-	-	-	-	1	-	-	-	-	-
WA	59	6	5	47	5	5	1	1	-	11	-	-	-	-	-
WI	105	7	48	92	5	44	5	2	3	7	-	1	1	-	-
WV	23	2	5	20	1	5	1	-	-	2	1	-	-	-	-
WY	5	1	4	2	-	4	1	1	-	2	-	-	-	-	-

Tot	3,508	431	1,303	2,960	325	1,134	126	60	45	415	44	123	7	2	1

TABLE 7-3 TOTAL HRC CASUALTIES BY STATE AND AGE GROUP, 1998

	Fatal				Total		Nonfatal Cases				Total	
	Age Group						Age Group					
	Unk	< 16	16-21	> 21	Cnt	%	Unk	< 16	16-21	> 21	Cnt	%
AL	-	-	1	10	11	2.6	1	2	8	35	46	3.5
AK	-	-	-	-	0	-	-	-	-	2	2	0.2
AZ	-	-	1	3	4	0.9	1	-	-	8	9	0.7
AR	2	-	6	16	24	5.6	5	-	3	37	45	3.5
CA	6	-	3	23	32	7.4	9	3	3	49	64	4.9
CO	1	-	-	3	4	0.9	2	-	4	7	13	1.0
CT	-	-	-	1	1	0.2	1	-	1	2	4	0.3
DE	-	-	-	-	0	-	-	-	-	3	3	0.2
FL	1	-	2	4	7	1.6	4	-	5	21	30	2.3
GA	-	-	2	11	13	3.0	-	-	11	24	35	2.7
ID	-	1	-	3	4	0.9	2	2	1	9	14	1.1
IL	5	2	3	20	30	7.0	5	2	11	49	67	5.1
IN	2	1	3	19	25	5.8	3	10	10	57	80	6.1
IA	-	-	-	3	3	0.7	-	1	10	19	30	2.3
KS	-	-	3	6	9	2.1	2	-	4	24	30	2.3
KY	-	-	-	5	5	1.2	-	-	7	13	20	1.5
LA	-	1	2	22	25	5.8	19	6	15	61	101	7.8
ME	-	-	-	-	0	-	-	-	-	3	3	0.2
MD	-	-	-	-	0	-	-	-	-	2	2	0.2
MA	1	-	-	-	1	0.2	-	-	-	-	0	-
MI	1	1	2	7	11	2.6	-	4	13	29	46	3.5
MN	-	2	1	11	14	3.2	2	4	9	32	47	3.6
MS	4	3	3	14	24	5.6	6	6	14	37	63	4.8
MO	1	1	4	8	14	3.2	2	-	6	17	25	1.9
MT	-	2	-	2	4	0.9	-	3	-	8	11	0.8
NE	2	3	1	5	11	2.6	-	1	4	14	19	1.5
NV	-	-	-	1	1	0.2	-	-	1	1	2	0.2
NJ	-	-	-	5	5	1.2	1	-	-	3	4	0.3
NM	-	1	-	4	5	1.2	-	-	1	5	6	0.5
NY	-	-	-	2	2	0.5	-	2	-	4	6	0.5
NC	3	2	2	8	15	3.5	7	3	7	31	48	3.7
ND	-	-	5	1	6	1.4	-	-	3	4	7	0.5
OH	1	-	4	10	15	3.5	3	9	6	27	45	3.5
OK	2	2	1	7	12	2.8	-	9	8	22	39	3.0
OR	-	-	4	1	5	1.2	-	-	1	8	9	0.7
PA	-	-	-	1	1	0.2	1	-	9	11	21	1.6
SC	-	-	1	5	6	1.4	2	2	6	22	32	2.5
SD	-	-	-	-	0	-	-	-	2	4	6	0.5
TN	-	3	2	9	14	3.2	-	1	6	19	26	2.0
TX	3	2	1	39	45	10.4	6	20	11	121	158	12.1
UT	1	-	1	3	5	1.2	2	-	2	2	6	0.5
VA	-	-	1	1	2	0.5	1	-	6	10	17	1.3
WA	-	1	-	5	6	1.4	-	-	-	5	5	0.4
WV	-	-	-	2	2	0.5	1	-	4	-	5	0.4
WI	-	-	-	7	7	1.6	3	2	11	32	48	3.7
WY	-	-	-	1	1	0.2	-	-	4	-	4	0.3
ALL	36	28	59	308	431	100.0	91	92	227	893	1,303	100.0

TABLE 7-4 TOTAL HIGHWAY-RAIL INCIDENTS BY MONTH, 1998

Month	Total Incidents		Total		At Public Crossing						At Private Crossing					
					Motor Vehicle			Other			Motor Vehicle			Other		
	Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
Jan	329	9.38	31	114	289	26	103	9	4	5	30	1	6	1	-	-
Feb	281	8.01	33	88	236	25	79	10	6	2	35	2	7	-	-	-
Mar	308	8.78	43	118	275	38	105	7	2	3	25	2	10	1	1	-
Apr	249	7.10	34	98	204	22	88	12	8	1	31	3	9	2	1	-
May	253	7.21	44	107	204	36	84	12	5	5	37	3	18	-	-	-
Jun	315	8.98	42	147	263	33	125	9	4	2	43	5	20	-	-	-
Jul	313	8.92	41	133	269	32	123	7	5	2	37	4	8	-	-	-
Aug	300	8.55	28	104	247	17	75	14	3	9	39	8	20	-	-	-
Sep	303	8.64	41	114	257	33	103	14	6	5	31	2	5	1	-	1
Oct	292	8.32	32	95	238	19	80	15	6	7	38	7	8	1	-	-
Nov	271	7.73	35	86	223	21	77	13	7	4	34	7	5	1	-	-
Dec	294	8.38	27	99	255	23	92	4	4	-	35	-	7	-	-	-

Total	3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

TABLE 7-5 TOTAL HIGHWAY-RAIL INCIDENTS BY DAY, 1998

Type /	Day	Total Incidents		Total		At Public Crossing						At Private Crossing					
						Motor Vehicle			Other			Motor Vehicle			Other		
		Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
Rail	Sunday	398	11.35	66	128	326	50	111	19	8	6	53	8	11	-	-	-
Equip	Monday	406	11.57	61	150	332	47	132	16	10	2	56	3	16	2	1	-
Struck	Tuesday	405	11.55	49	139	335	35	124	19	12	5	50	2	10	1	-	-
Highway	Wednesday	370	10.55	42	113	309	35	95	11	4	5	50	3	13	-	-	-
User	Thursday	368	10.49	54	136	308	39	111	15	7	6	43	7	19	2	1	-
	Friday	381	10.86	57	112	308	40	90	16	7	5	56	10	16	1	-	1
	Saturday	426	12.14	63	160	334	43	121	21	11	9	70	9	30	1	-	-

	Total	2754	78.51	392	938	2,252	289	784	117	59	38	378	42	115	7	2	1
Highway	Sunday	104	2.96	6	50	101	6	48	-	-	-	3	-	2	-	-	-
User	Monday	130	3.71	5	57	117	5	51	3	-	2	10	-	4	-	-	-
Struck	Tuesday	107	3.05	1	80	106	1	80	-	-	-	1	-	-	-	-	-
Rail	Wednesday	96	2.74	4	43	92	4	43	-	-	-	4	-	-	-	-	-
Equip	Thursday	110	3.14	8	41	97	8	36	4	-	4	9	-	1	-	-	-
	Friday	78	2.22	6	41	74	3	40	2	1	1	2	2	-	-	-	-
	Saturday	129	3.68	9	53	121	9	52	-	-	-	8	-	1	-	-	-

	Total	754	21.49	39	365	708	36	350	9	1	7	37	2	8	-	-	-
---- Total		3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

TABLE 7-6 TOTAL HIGHWAY-RAIL INCIDENTS BY HOUR OF DAY, 1998

Hour of Day		Total Incidents		Total		At Public Crossing						At Private Crossing					
						Motor Vehicle			Other			Motor Vehicle			Other		
		Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
AM	1	97	2.77	4	15	80	1	9	6	3	3	11	-	3	-	-	-
	2	78	2.22	9	36	64	6	35	4	3	1	10	-	-	-	-	-
	3	65	1.85	7	27	61	7	26	1	-	1	3	-	-	-	-	-
	4	68	1.94	8	18	58	4	15	1	1	-	9	3	3	-	-	-
	5	82	2.34	6	20	70	5	17	3	1	2	9	-	1	-	-	-
	6	110	3.14	14	28	92	11	26	3	3	-	15	-	2	-	-	-
	7	130	3.71	17	51	109	13	47	3	3	-	18	1	4	-	-	-
	8	187	5.33	28	90	159	21	72	8	3	3	20	4	15	-	-	-
	9	184	5.25	18	85	155	15	70	6	1	2	22	2	13	1	-	-
	10	203	5.79	28	60	164	23	49	8	4	3	30	1	8	1	-	-
	11	222	6.33	27	93	188	15	84	8	5	2	26	7	7	-	-	-
	12	78	2.22	9	29	63	5	26	4	3	-	11	1	3	-	-	-

	Total	1504	42.87	175	552	1,263	126	476	55	30	17	184	19	59	2	-	-
PM	1	204	5.82	29	89	176	24	81	4	3	-	24	2	8	-	-	-
	2	196	5.59	32	58	168	26	50	7	3	4	21	3	4	-	-	-
	3	217	6.19	30	72	178	23	58	11	4	4	28	3	10	-	-	-
	4	188	5.36	32	88	160	25	80	5	4	-	22	2	8	1	1	-
	5	191	5.44	17	84	156	14	68	11	2	8	24	1	8	-	-	-
	6	184	5.25	20	83	153	12	78	6	2	1	23	5	3	2	1	1
	7	157	4.48	21	49	136	16	44	8	3	3	13	2	2	-	-	-
	8	121	3.45	12	36	103	6	33	5	3	2	13	3	1	-	-	-
	9	109	3.11	10	33	98	8	31	4	2	1	6	-	1	1	-	-
	10	118	3.36	13	32	103	12	28	3	1	2	12	-	2	-	-	-
	11	108	3.08	10	40	90	8	35	4	2	2	14	-	3	-	-	-
	12	211	6.01	30	87	176	25	72	3	1	1	31	4	14	1	-	-

	Total	2004	57.13	256	751	1,697	199	658	71	30	28	231	25	64	5	2	1
---- Total		3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

TABLE 7-7 TOTAL HIGHWAY-RAIL INCIDENTS BY TYPE HIGHWAY USER, 1998

Type & Highway User		Total Incidents		Total		At Public Crossing						At Private Crossing					
						Motor Vehicle			Other			Motor Vehicle			Other		
		Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
Rail Equip	Car	1388	39.57	187	465	1,265	174	432	-	-	-	123	13	33	-	-	-
Struck	Truck	355	10.12	55	128	276	44	104	-	-	-	79	11	24	-	-	-
Highway	Trk& Trail	425	12.12	15	162	316	9	120	-	-	-	109	6	42	-	-	-
User	Pickup Trk	325	9.26	48	89	286	42	76	-	-	-	39	6	13	-	-	-
	Van	84	2.39	20	37	72	16	36	-	-	-	12	4	1	-	-	-
	Bus	3	0.09	-	-	3	-	-	-	-	-	-	-	-	-	-	-
	School Bus	3	0.09	2	5	3	2	5	-	-	-	-	-	-	-	-	-
	Motorcycle	1	0.03	-	1	1	-	1	-	-	-	-	-	-	-	-	-
	Oth Mtr V.	46	1.31	4	12	30	2	10	-	-	-	16	2	2	-	-	-
	Pedestrian	81	2.31	49	28	-	-	-	79	48	27	-	-	-	2	1	1
	Other	43	1.23	12	11	-	-	-	38	11	11	-	-	-	5	1	-
	---- Total	2754	78.51	392	938	2,252	289	784	117	59	38	378	42	115	7	2	1
Highway	Car	422	12.03	19	203	412	19	201	-	-	-	10	-	2	-	-	-
User Struck	Truck	105	2.99	2	60	96	2	58	-	-	-	9	-	2	-	-	-
Rail Equip	Trk& Trail	52	1.48	2	23	44	2	21	-	-	-	8	-	2	-	-	-
	Pickup Trk	119	3.39	12	58	114	10	58	-	-	-	5	2	-	-	-	-
	Van	30	0.86	1	8	29	1	8	-	-	-	1	-	-	-	-	-
	School Bus	1	0.03	-	-	1	-	-	-	-	-	-	-	-	-	-	-
	Motorcycle	6	0.17	2	3	6	2	3	-	-	-	-	-	-	-	-	-
	Oth Mtr V.	10	0.29	-	3	6	-	1	-	-	-	4	-	2	-	-	-
	Pedestrian	6	0.17	1	5	-	-	-	6	1	5	-	-	-	-	-	-
	Other	3	0.09	-	2	-	-	-	3	-	2	-	-	-	-	-	-
	---- Total	754	21.49	39	365	708	36	350	9	1	7	37	2	8	-	-	-
---- Total		3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

TABLE 7-8 HIGHWAY-RAIL INCIDENTS BY USERS, 1998

Type / Vehicle		Total		Freight Train	Psgr Train	Commute Train	Work Train	Single Car	Cut of Cars	Yard/ Switch	Light loco(s)	Maint Insp car
		Cnt	%									
Rail	Car	1,388	39.6	1,053	96	10	11	1	2	100	95	20
Equip	Truck	355	10.1	280	20	-	1	-	-	30	24	-
Struck	Trk& Trail	425	12.1	303	25	1	5	1	4	50	30	6
Highway	Pickup Trk	325	9.3	244	30	-	1	1	-	23	19	7
User	Van	84	2.4	53	11	-	1	-	1	8	9	1
	Bus	3	0.1	2	-	1	-	-	-	-	-	-
	School Bus	3	0.1	3	-	-	-	-	-	-	-	-
	Motorcycle	1	0.0	1	-	-	-	-	-	-	-	-
	Oth Mtr V.	46	1.3	36	1	-	1	-	1	5	2	-
	Pedestrian	81	2.3	51	20	5	1	-	-	4	-	-
	Other	43	1.2	39	3	-	-	1	-	-	-	-

	Sub Total	2,754	78.5	2,065	206	17	21	4	8	220	179	34
Highway	Car	422	12.0	289	11	1	2	3	4	65	37	10
User	Truck	105	3.0	72	3	1	2	2	-	12	12	1
Struck	Trk& Trail	52	1.5	36	1	-	-	-	-	10	4	1
Rail	Pickup Trk	119	3.4	86	6	-	1	1	-	15	7	3
Equip	Van	30	0.9	23	1	-	-	-	-	3	2	1
	School Bus	1	0.0	1	-	-	-	-	-	-	-	-
	Motorcycle	6	0.2	4	1	-	-	-	-	-	1	-
	Oth Mtr V.	10	0.3	8	1	-	-	-	-	1	-	-
	Pedestrian	6	0.2	5	1	-	-	-	-	-	-	-
	Other	3	0.1	3	-	-	-	-	-	-	-	-

	Sub Total	754	21.5	527	25	2	5	6	4	106	63	16
Total		3,508	100.0	2,592	231	19	26	10	12	326	242	50

TABLE 7-9 TOTAL HIGHWAY-RAIL INCIDENTS BY WARNING DEVICE, 1998

Warning	Total Incidents		Total		At Public Crossing						At Private Crossing					
					Motor Vehicle			Other			Motor Vehicle			Other		
	Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
Gates	773	22.04	113	224	684	64	195	78	46	25	10	3	3	1	-	1
Flashing lites	735	20.95	93	309	693	87	292	22	5	10	20	1	7	-	-	-
HWTS,WW,Bells	82	2.34	4	33	74	3	33	1	1	-	7	-	-	-	-	-
Watchman	58	1.65	1	17	42	1	13	-	-	-	15	-	4	1	-	-
Stop signs	449	12.80	64	195	324	38	145	7	5	1	115	19	49	3	2	-
Cross bucks	1277	36.40	147	501	1,117	131	450	17	3	8	141	13	43	2	-	-
Other	8	0.23	-	1	4	-	-	-	-	-	4	-	1	-	-	-
None	126	3.59	9	23	22	1	6	1	-	1	103	8	16	-	-	-
---- Total	3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

TABLE 7-10 TOTAL HIGHWAY-RAIL INCIDENTS BY WEATHER, 1998

Type / Weather		Total Incidents		Total		At Public Crossing						At Private Crossing					
						Motor Vehicle			Other			Motor Vehicle			Other		
		Cnt	%	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf	Cnt	Ftl	Nonf
Rail	Clear	1859	52.99	280	642	1,523	202	531	83	45	23	248	31	88	5	2	-
Equip	Cloudy	578	16.48	79	215	461	61	180	29	11	14	86	7	20	2	-	1
Struck	Rain	230	6.56	24	56	190	19	49	4	3	-	36	2	7	-	-	-
Highway	Fog	37	1.05	3	10	32	2	10	-	-	-	5	1	-	-	-	-
User	Sleet	3	0.09	1	-	3	1	-	-	-	-	-	-	-	-	-	-
	Snow	47	1.34	5	15	43	4	14	1	-	1	3	1	-	-	-	-

	Total	2754	78.51	392	938	2,252	289	784	117	59	38	378	42	115	7	2	1
Highway	Clear	475	13.54	22	240	444	21	230	7	1	5	24	-	5	-	-	-
User	Cloudy	165	4.70	6	76	152	4	71	2	-	2	11	2	3	-	-	-
Struck	Rain	71	2.02	5	34	69	5	34	-	-	-	2	-	-	-	-	-
Rail	Fog	25	0.71	2	8	25	2	8	-	-	-	-	-	-	-	-	-
Equip	Sleet	1	0.03	-	-	1	-	-	-	-	-	-	-	-	-	-	-
	Snow	17	0.48	4	7	17	4	7	-	-	-	-	-	-	-	-	-

	Total	754	21.49	39	365	708	36	350	9	1	7	37	2	8	-	-	-
---- Total		3508	100.0	431	1303	2,960	325	1134	126	60	45	415	44	123	7	2	1

CHAPTER 8

HIGHWAY-RAIL INCIDENTS AT PUBLIC CROSSINGS THAT INVOLVE MOTOR VEHICLES

FRA's reporting rules define any contact between a rail and highway user at a crossing site as a highway-rail incident. The following are situations that occur at or near crossing locations that do not qualify as highway-rail crossing incidents, but may require reporting under other provisions of the rule, e.g., train accident or casualty reporting.

Q1. A man driving a truck did not see a train occupying a highway-rail crossing and lost control of his vehicle when he slammed on the brakes to avoid a collision. His truck ended up in the ditch with considerable damage, and he broke his arm. What reports are required?

A1. Since an impact did not occur between a highway and a rail user, you do not need to prepare a highway-rail accident/incident report (form 6180.57). The motorist did sustain a reportable injury arising from the operation of a railroad. Therefore, an injury report (form 6180.55a) must be completed. If the motorist had struck the consist, a form 6180.57 would be required even if the impact did not occur on the crossing site.

Q2. A highway user hits a signal stand at a highway crossing and was injured, but there was no on-track equipment present, nor were railroad employees in the vicinity. Is this reportable?

A2. No. The regulation exempts the reporting of motor vehicle accidents at highway-rail crossing sites when they do not involve the presence of on-track equipment or railroad employees.

Q3. A motorist in an off-road vehicle was waiting behind several automobiles at a crossing site where the gates were down and a standing train was occupying the track. He apparently became impatient and drove his vehicle off the highway and parallel to the track to a point where he could cross over the track behind the train. His vehicle stalled on a parallel set of tracks, and he was unable to start it. He exited his truck just before a train on the adjacent track hit it. Should this be reported as a highway-rail accident/incident or any other type?

A3. An event such as this would not qualify as a highway-rail crossing collision since the motor vehicle operator had left the highway of his own choosing and his vehicle was struck at a location other than a designated crossing site. The event would be reportable as an obstruction accident on form 6180.54 if reportable damage was in excess of the threshold. If the motorist or employees were hurt in connection with this event, then an injury report (form 6180.55a) would need to be completed.

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HIGHWAY-RAIL INCIDENTS AT PUBLIC CROSSINGS THAT INVOLVE MOTOR VEHICLES

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Tables

8–1 DRIVER'S GENDER, 1998

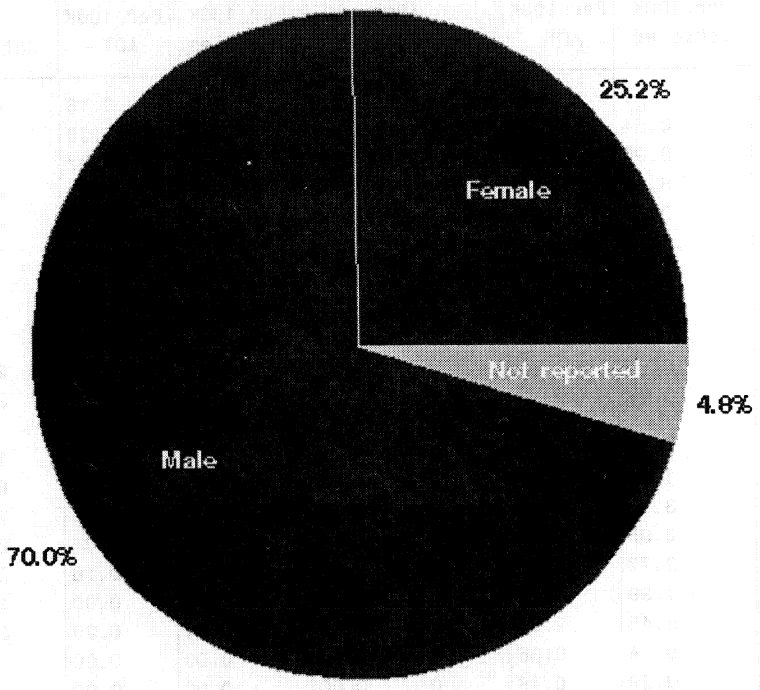

TABLE 8-1 RATES FOR MOTOR VEHICLE INCIDENTS AT PUBLIC CROSSINGS BY STATE, 1998

	Incidents				Fatal				Nonfatal			
	Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT	Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT	Cnt	Per 100 Xings	Per 100K Vehicles	Per 100K ADT
AL	134	3.83	.	1.94	11	0.31	.	0.16	41	1.17	.	0.06
AK	3	1.33	0.54	0.65	0	0.00	0.00	0.00	2	0.89	3.60	0.04
AZ	29	3.08	0.90	1.00	2	0.21	0.06	0.07	9	0.96	2.80	0.03
AR	104	3.29	6.31	2.72	20	0.63	1.21	0.52	43	1.36	26.09	0.11
CA	142	1.81	0.56	0.35	19	0.24	0.07	0.05	44	0.56	1.73	0.01
CO	23	1.19	0.64	0.58	2	0.10	0.06	0.05	11	0.57	3.04	0.03
CT	8	2.15	0.30	0.64	1	0.27	0.04	0.08	3	0.81	1.11	0.02
DE	4	1.31	0.64	0.37	0	0.00	0.00	0.00	2	0.66	3.21	0.02
DC	.	.	.	.	.	.	.	.	.	.	.	.
FL	63	1.61	0.57	0.33	3	0.08	0.03	0.02	25	0.64	2.26	0.01
GA	114	1.95	1.80	1.33	7	0.12	0.11	0.08	30	0.51	4.75	0.03
HI	.	.	.	.	.	.	.	.	.	.	.	.
ID	25	1.80	2.24	1.40	4	0.29	0.36	0.22	14	1.01	12.54	0.08
IL	165	1.66	1.91	0.78	23	0.23	0.27	0.11	60	0.60	6.96	0.03
IN	171	2.64	3.14	1.26	21	0.32	0.39	0.15	74	1.14	13.59	0.05
IA	88	1.68	2.95	1.61	2	0.04	0.07	0.04	28	0.53	9.39	0.05
KS	61	0.88	2.77	1.22	8	0.12	0.36	0.16	29	0.42	13.18	0.06
KY	56	2.27	1.99	1.45	0	0.00	0.00	0.00	15	0.61	5.32	0.04
LA	188	5.33	5.45	2.61	21	0.60	0.61	0.29	86	2.44	24.93	0.12
ME	7	0.84	0.64	0.36	0	0.00	0.00	0.00	3	0.36	2.76	0.02
MD	11	1.62	0.29	0.48	0	0.00	0.00	0.00	2	0.29	0.52	0.01
MA	2	0.17	0.04	0.05	0	0.00	0.00	0.00	0	0.00	0.00	0.00
MI	94	1.65	1.15	0.63	9	0.16	0.11	0.06	40	0.70	4.89	0.03
MN	103	2.02	2.54	1.67	12	0.24	0.30	0.19	43	0.84	10.61	0.07
MS	122	4.32	5.39	2.88	22	0.78	0.97	0.52	55	1.95	24.29	0.13
MO	70	1.46	1.59	1.39	10	0.21	0.23	0.20	18	0.38	4.09	0.04
MT	19	1.30	1.90	1.48	4	0.27	0.40	0.31	10	0.69	9.99	0.08
NE	48	1.22	3.15	1.93	10	0.25	0.66	0.40	18	0.46	11.80	0.07
NV	1	0.33	0.09	0.11	1	0.33	0.09	0.11	0	0.00	0.00	0.00
NH	2	0.50	0.17	0.20	0	0.00	0.00	0.00	0	0.00	0.00	0.00
NJ	12	0.65	0.20	0.11	3	0.16	0.05	0.03	2	0.11	0.34	0.00
NM	8	1.04	0.52	0.90	3	0.39	0.19	0.34	1	0.13	0.65	0.01
NY	20	0.61	0.18	0.26	0	0.00	0.00	0.00	2	0.06	0.18	0.00
NC	88	1.93	1.50	0.96	11	0.24	0.19	0.12	39	0.85	6.66	0.04
ND	19	0.41	2.67	1.48	6	0.13	0.84	0.47	4	0.09	5.62	0.03
OH	132	2.07	1.28	0.95	12	0.19	0.12	0.09	39	0.61	3.78	0.03
OK	57	1.30	1.94	1.19	10	0.23	0.34	0.21	36	0.82	12.26	0.08
OR	29	1.26	0.98	0.64	4	0.17	0.14	0.09	6	0.26	2.03	0.01
PA	58	1.05	0.64	0.35	0	0.00	0.00	0.00	20	0.36	2.22	0.01
RI	1	0.78	0.14	0.16	0	0.00	0.00	0.00	0	0.00	0.00	0.00
SC	73	2.41	2.53	1.37	5	0.17	0.17	0.09	31	1.02	10.73	0.06
SD	14	0.66	1.88	1.14	0	0.00	0.00	0.00	6	0.28	8.08	0.05
TN	86	2.71	1.87	1.31	9	0.28	0.20	0.14	22	0.69	4.79	0.03
TX	285	2.32	2.18	0.98	35	0.29	0.27	0.12	141	1.15	10.80	0.05
UT	22	2.23	1.42	1.22	4	0.41	0.26	0.22	6	0.61	3.86	0.03
VT	3	0.60	0.58	0.43	0	0.00	0.00	0.00	0	0.00	0.00	0.00
VA	35	1.69	0.61	0.58	0	0.00	0.00	0.00	16	0.77	2.78	0.03
WA	47	1.64	0.98	0.87	5	0.17	0.10	0.09	5	0.17	1.04	0.01
WV	20	1.27	1.46	1.14	1	0.06	0.07	0.06	5	0.32	3.64	0.03
WI	92	2.07	2.08	0.97	5	0.11	0.11	0.05	44	0.99	9.95	0.05
WY	2	0.46	0.35	0.47	0	0.00	0.00	0.00	4	0.92	7.03	0.09
	2,960	1.87	1.34	0.90	325	0.20	0.15	0.10	1,134	0.72	5.13	0.03

TABLE 8-2 RATES FOR MOTOR VEHICLE INCIDENTS AT PUBLIC CROSSINGS BY WARNING DEVICE, 1998

	Incidents			Fatal			Nonfatal			
	Cnt	Per 100 Xings	Per 100K ADT	Cnt	Per 100 Xings	Per 100K ADT	Cnt	Per 100 Xings	Per 100K ADT	Number of Crossings
Unknown	22	0.41	0.28	1	0.02	0.01	6	0.11	0.01	5,421
Other	4	0.81	0.73	0	0.00	0.00	0	0.00	0.00	492
Cross bucks	1,117	1.48	2.14	131	0.17	0.25	450	0.60	0.09	75,558
Stop signs	324	2.97	5.07	38	0.35	0.59	145	1.33	0.23	10,903
Special warning	42	1.00	0.28	1	0.02	0.01	13	0.31	0.01	4,191
HWTS,WW,Bells	74	4.87	1.25	3	0.20	0.05	33	2.17	0.06	1,519
Flashing lights	693	2.47	0.66	87	0.31	0.08	292	1.04	0.03	28,098
Gates	684	2.11	0.50	64	0.20	0.05	195	0.60	0.01	32,406
Total	2,960	1.87	0.90	325	0.20	0.10	1,134	0.72	0.03	158,590

TABLES 8-3 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY RAILROAD AND TYPE WARNING

	Type of Warning								Type Incident	
	Gates	Flashi-ng lites	HWTS,W-W,Bells	Watchm-an	Stop signs	Cross bucks	Other	None	Rail Equip Struck Highway User	Highway User Struck Rail Equip
ALS	-	1	-	-	-	-	-	-	1	-
ARR	-	1	-	-	1	1	-	-	1	2
ATK	70	19	4	-	10	29	-	-	119	13
BAR	-	-	-	1	-	-	-	-	-	1
BLE	1	-	-	-	-	-	-	-	-	1
BNSF	118	98	5	1	34	180	1	1	356	82
BRC	1	-	-	-	-	-	-	-	-	1
CR	41	36	1	-	16	51	2	1	105	43
CSX	85	101	8	6	47	110	1	2	273	87
DH	1	-	-	-	-	-	-	1	2	-
DME	1	5	-	1	3	4	-	-	8	6
DMIR	-	1	-	-	-	-	-	-	-	1
DWP	-	1	-	-	1	-	-	-	1	1
EJE	2	1	-	-	-	3	-	-	5	1
FEC	12	-	-	1	2	-	-	-	12	3
GRS	1	3	-	-	-	1	-	-	4	1
GTW	2	2	-	-	7	1	-	-	10	2
GWWR	-	1	2	-	-	1	-	-	4	-
IC	10	42	2	3	8	47	-	-	87	25
IHB	3	3	-	-	-	3	-	1	7	3
IMRL	1	3	3	1	6	20	-	-	27	7
KCS	9	44	5	-	2	114	-	-	115	59
LI	2	-	-	-	-	-	-	-	1	1
MBTA	2	-	-	-	-	-	-	-	2	-
MNCW	4	1	-	-	-	-	-	-	3	2
MRL	1	-	1	1	2	6	-	-	8	3
NICD	1	3	4	-	-	1	-	-	6	3
NIRC	8	1	-	-	-	-	-	-	8	1
NJTR	5	-	-	-	-	-	-	-	5	-
NS	110	94	6	-	54	150	-	5	348	71
OTHE	19	64	8	13	32	162	-	2	191	109
PAL	-	6	-	-	-	5	-	-	9	2
PCMZ	2	-	-	-	-	-	-	-	1	1
PTRA	1	1	-	1	-	-	-	-	1	2
SCAX	5	-	-	-	-	-	-	-	5	-
SEPA	-	1	-	-	-	-	-	-	-	1
SOO	10	9	-	-	7	15	-	1	26	16
TM	-	4	-	1	-	6	-	-	10	1
UP	144	124	25	12	80	181	-	8	445	129
WC	11	21	-	-	12	20	-	-	42	22
WE	1	2	-	-	-	6	-	-	4	5
	684	693	74	42	324	1,117	4	22	2,252	708

TABLES 8-3A MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY STATE AND TYPE WARNING

	Type of Warning								Rail Equip Struck Highway User	Highway User Struck Rail Equip
	Gates	Flashi-ng lites	HWTS,W-W,Bells	Watchm-an	Stop signs	Cross bucks	Other	None		
AK	-	1	-	-	1	1	-	-	1	2
AL	11	30	2	3	33	54	-	1	113	21
AR	12	23	7	-	10	52	-	-	89	15
AZ	9	14	-	1	3	2	-	-	20	9
CA	81	28	7	3	5	16	-	2	115	27
CO	5	4	2	-	3	9	-	-	14	9
CT	2	4	-	-	2	-	-	-	6	2
DE	-	4	-	-	-	-	-	-	3	1
FL	47	2	-	1	4	9	-	-	54	9
GA	37	16	1	2	28	30	-	-	84	30
IA	11	18	3	5	14	35	-	2	61	27
ID	2	6	1	-	15	1	-	-	21	4
IL	51	50	-	1	3	59	-	1	132	33
IN	35	46	6	1	30	52	-	1	119	52
KS	14	10	-	1	4	31	-	1	42	19
KY	11	27	1	-	-	17	-	-	45	11
LA	15	56	8	4	13	92	-	-	141	47
MA	2	-	-	-	-	-	-	-	2	-
MD	3	2	2	-	1	3	-	-	6	5
ME	1	4	-	1	-	1	-	-	5	2
MI	19	25	-	-	26	22	-	2	66	28
MN	16	21	1	1	18	46	-	-	68	35
MO	7	23	3	-	1	36	-	-	55	15
MS	17	25	6	1	13	60	-	-	94	28
MT	2	3	1	1	3	9	-	-	15	4
NC	31	13	4	3	2	34	-	1	76	12
ND	4	1	1	-	1	12	-	-	11	8
NE	19	1	1	-	3	24	-	-	33	15
NH	-	1	1	-	-	-	-	-	2	-
NJ	7	3	-	1	-	-	1	-	10	2
NM	1	-	-	-	1	6	-	-	7	1
NV	-	-	-	-	1	-	-	-	1	-
NY	11	2	-	-	2	4	-	1	12	8
OH	33	21	1	-	5	72	-	-	97	35
OK	7	10	-	-	4	36	-	-	47	10
OR	3	2	1	-	15	8	-	-	21	8
PA	10	17	-	-	2	27	2	-	37	21
RI	1	-	-	-	-	-	-	-	1	-
SC	20	19	3	3	7	21	-	-	58	15
SD	-	4	1	1	2	6	-	-	9	5
TN	14	30	4	-	1	34	-	3	72	14
TX	63	73	1	5	22	119	-	2	222	63
UT	5	4	2	-	3	8	-	-	19	3
VA	13	12	1	1	-	7	-	1	26	9
VT	-	1	-	1	1	-	-	-	2	1
WA	10	8	2	-	6	18	1	2	40	7
WI	15	25	-	1	16	34	-	1	59	33
WV	5	4	-	-	-	10	-	1	17	3
WY	2	-	-	-	-	-	-	-	2	-
Tot	684	693	74	42	324	1,117	4	22	2,252	708

TABLE 8-4 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSING, 1998 BY TYPE CONSIST AND CONSIST SPEED

Type	Consist Speed	Total	Freight Train	Psgr Comm Trn	Work Train	Car(s)	Yard Switch	Light loco(s)	Whistle Ban? Unk	Yes	No
Rail	1-9	387	175	2	7	22	122	59	29	24	334
Equip	10-19	289	203	6	3	10	31	36	9	22	258
Struck	21-29	328	284	12	3	3	9	17	21	20	287
Highway	30-39	393	366	8	3	2	4	10	32	15	346
User	40-49	496	455	23	-	1	1	16	43	20	433
	50-59	227	198	24	-	-	-	5	20	10	197
	60-69	81	36	44	-	-	-	1	9	3	69
	>= 71	51	6	45	-	-	-	-	11	1	39

	Sub Total	2,252	1,723	164	16	38	167	144	174	115	1,963
Highway	Unknown	64	45	-	-	5	10	4	4	-	60
User	1-9	200	87	1	3	15	68	26	13	9	178
Struck	10-19	130	96	2	1	2	16	13	7	8	115
Rail	21-29	96	84	3	-	1	4	4	6	6	84
Equip	30-39	88	81	2	-	-	-	5	7	5	76
	40-49	88	81	2	-	-	-	5	2	5	81
	50-59	31	26	5	-	-	-	-	1	-	30
	60-69	6	1	4	1	-	-	-	1	2	3
	>= 71	5	-	5	-	-	-	-	-	-	5

	Sub Total	708	501	24	5	23	98	57	41	35	632
Total		2,960	2,224	188	21	61	265	201	215	150	2,595

TABLE 8-5 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE WARNING, MOTORIST ACTION, AND WARNING LOCATION

Type|	Warning	Total		Motorist					Warning Location			
		Cnt	%	Unknown	Drove around thru gate	Stopped then proceed	Did not stop	Other	Not repo-rted	Both sides	Veh Apr	Opp. Veh Apr
Rail Equip Struck Highway User	Gates	560	18.9	120	160	6	46	228	-	548	11	1
	Flashing lites	493	16.7	29	-	35	290	139	5	477	10	1
	HWTS,WW,Bells	58	2.0	3	-	2	34	19	1	55	2	-
	Watchman	23	0.8	-	-	1	15	7	2	19	1	1
	Stop signs	272	9.2	18	-	27	151	76	2	259	10	1
	Cross bucks	823	27.8	39	1	41	544	198	5	791	22	5
	Other	3	0.1	1	-	-	2	-	-	3	-	-
	None	20	0.7	-	-	1	7	12	19	1	-	-
	-Sub Total	2,252	76.1	210	161	113	1,089	679	34	2,153	56	9
Highway User Struck Rail Equip	Gates	124	4.2	3	89	2	28	2	2	121	1	-
	Flashing lites	200	6.8	4	-	6	189	1	-	193	7	-
	HWTS,WW,Bells	16	0.5	-	-	-	16	-	1	15	-	-
	Watchman	19	0.6	1	-	1	17	-	-	19	-	-
	Stop signs	52	1.8	-	-	4	47	1	-	49	3	-
	Cross bucks	294	9.9	5	-	7	279	3	4	277	9	4
	Other	1	0.0	-	-	-	1	-	-	1	-	-
	None	2	0.1	-	-	-	2	-	2	-	-	-
	-Sub Total	708	23.9	13	89	20	579	7	9	675	20	4
Total		2,960	100.0	223	250	133	1,668	686	43	2,828	76	13

TABLE 8-6 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE VEHICLE, VEHICLE SPEED AND DRIVER GENDER

Type|	Vehicle Speed	Total	Car	Trucks	Trk& Trail	Van	Buses	Oth Mtr V.	Vehicle Driver ?	M	F
Rail	Unknown	132	88	21	14	5	-	4	5	87	40
Equip	Stopped	790	481	184	94	23	4	4	60	511	219
Struck	1-9	523	241	141	102	22	2	15	19	391	113
Highway	10-19	388	201	107	63	11	-	6	15	279	94
User	21-29	223	145	52	20	5	-	1	7	149	67
	30-39	120	65	39	12	4	-	-	5	87	28
	40-49	57	35	13	9	-	-	-	2	41	14
	50-59	14	8	2	1	2	-	1	-	12	2
	60-69	4	1	2	1	-	-	-	-	4	-
	>= 71	1	-	1	-	-	-	-	-	1	-

	Sub Total	2,252	1,265	562	316	72	6	31	113	1,562	577
Highway	Unknown	54	33	16	1	3	-	1	-	42	12
User	Stopped	7	4	3	-	-	-	-	1	4	2
Struck	1-9	152	97	37	12	3	1	2	11	103	38
Rail	10-19	147	84	40	14	7	-	2	7	110	30
Equip	21-29	111	55	42	3	8	-	3	2	76	33
	30-39	108	69	32	4	2	-	1	4	84	20
	40-49	68	39	19	7	2	-	1	3	45	20
	50-59	44	20	16	3	4	-	1	1	31	12
	60-69	15	9	5	-	-	-	1	-	13	2
	>= 71	2	2	-	-	-	-	-	-	2	-

	Sub Total	708	412	210	44	29	1	12	29	510	169
Total		2,960	1,677	772	360	101	7	43	142	2,072	746

TABLE 8-7 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY VEHICLE SPEED, WEATHER AND CONDITION OF DRIVER

Type|	Vehicle Speed	Total	Clear	Cloudy	Rain	Fog	Sleet	Snow	Driver ?	Ftl	Nonf	OK
Rail	Unknown	132	90	23	9	5	-	5	1	4	20	107
Equip	Stopped	790	521	159	76	18	2	14	9	33	95	653
Struck	1-9	523	362	117	32	4	-	8	1	57	139	326
Highway	10-19	388	268	79	26	3	1	11	-	47	128	213
User	21-29	223	151	39	30	2	-	1	-	37	72	114
	30-39	120	80	26	13	-	-	1	-	15	39	66
	40-49	57	39	13	2	-	-	3	-	11	20	26
	50-59	14	8	4	2	-	-	-	-	3	6	5
	60-69	4	3	1	-	-	-	-	-	1	1	2
	>= 71	1	1	-	-	-	-	-	-	1	-	-

	Sub Total	2,252	1,523	461	190	32	3	43	11	209	520	1,512
Highway	Unknown	54	27	13	9	2	-	3	1	1	18	34
User	Stopped	7	6	1	-	-	-	-	-	1	1	5
Struck	1-9	152	87	43	14	3	1	4	1	1	36	114
Rail	10-19	147	90	37	13	2	-	5	-	5	40	102
Equip	21-29	111	72	23	8	6	-	2	-	1	43	67
	30-39	108	78	14	10	5	-	1	-	5	40	63
	40-49	68	44	11	8	4	-	1	-	5	35	28
	50-59	44	26	9	6	2	-	1	-	6	21	17
	60-69	15	12	1	1	1	-	-	1	1	12	1
	>= 71	2	2	-	-	-	-	-	-	1	1	-

	Sub Total	708	444	152	69	25	1	17	3	27	247	431
Total		2,960	1,967	613	259	57	4	60	14	236	767	1,943

TABLE 8-8 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY DRIVER AGE, GENDER, AND TYPE VEHICLE

Age	Total		Type Vehicle									Vehicle Driver		
	Cnt	%	Car	Truck	Trk& Trail	Pick-up Trk	Van	Bus	Scho-ol Bus	Moto-rcyc-le	Oth Mtr V.	?	M	F
Unknown	463	15.6	261	44	46	82	17	2	-	1	10	126	266	71
11-15	2	0.1	2	-	-	-	-	-	-	-	-	-	1	1
16-20	335	11.3	257	24	5	43	5	-	-	-	1	2	205	128
21-25	354	12.0	227	55	27	39	3	-	-	1	2	4	258	92
26-30	331	11.2	180	52	44	39	8	-	-	2	6	3	249	79
31-35	243	8.2	124	33	49	26	7	-	-	1	3	1	173	69
36-40	287	9.7	130	43	59	38	11	-	1	2	3	2	222	63
41-45	213	7.2	99	33	38	25	17	-	-	-	1	1	162	50
46-50	173	5.8	79	24	29	33	4	-	1	-	3	1	129	43
51-55	158	5.3	67	27	30	21	9	1	-	-	3	-	126	32
56-60	97	3.3	45	9	20	18	4	-	-	-	1	-	72	25
61-65	82	2.8	48	7	8	11	6	-	-	-	2	1	61	20
66-70	90	3.0	52	15	5	10	6	-	1	-	1	1	64	25
Other	132	4.5	106	6	-	15	4	-	1	-	-	-	84	48
Total	2,960	100.0	1,677	372	360	400	101	3	4	7	36	142	2,072	746

TABLE 8-9 MOTOR VEHICLES THAT STRUCK CONSIST AT PUBLIC CROSSINGS, 1998 BY CONSIST LENGTH, PORTION OF TRAIN STRUCK AND WARNING TYPE

Consist Length	Total	Position of Train Struck					Type of Warning							
		1st car/ loco	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Gates	Flashi-ng lites	HWTS,W-W,Bells	Watchm-an	Stop signs	Cross bucks	Other	None
???	1	-	1	-	-	-	-	-	-	-	-	1	-	-
1	49	48	1	-	-	-	7	19	-	2	3	18	-	-
2-5	88	69	-	4	5	10	12	23	5	5	4	38	1	-
6-10	59	45	-	7	3	4	11	10	2	4	2	29	-	1
11-15	49	30	6	8	1	4	7	16	2	4	3	17	-	-
16-20	45	30	5	4	2	4	5	14	-	1	1	24	-	-
21-25	21	12	5	1	2	1	3	6	-	-	4	8	-	-
26-30	24	16	1	2	1	4	1	7	1	-	2	13	-	-
31-35	27	21	4	2	-	-	6	6	-	-	2	13	-	-
36-40	28	16	6	3	1	2	5	10	-	-	3	10	-	-
41-45	29	15	7	3	1	3	7	7	1	1	1	11	-	1
46-50	27	15	4	4	1	3	5	7	1	-	2	12	-	-
51-60	45	21	7	5	4	8	6	11	-	1	4	23	-	-
61-70	39	18	10	3	1	7	9	9	1	-	3	17	-	-
71-80	34	19	4	5	5	1	5	15	-	-	2	12	-	-
81-90	30	16	6	2	3	3	7	12	1	-	3	7	-	-
91-100	25	11	2	10	1	1	8	10	-	1	2	4	-	-
101-110	35	18	5	3	5	4	6	9	2	-	2	16	-	-
111-120	37	17	8	4	4	4	10	6	-	-	7	14	-	-
>= 121	16	7	3	5	-	1	4	3	-	-	2	7	-	-
-Total	708	444	85	75	40	64	124	200	16	19	52	294	1	2

TABLE 8-10 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY CONSIST LENGTH, TYPE CONSIST, AND DRIVER GENDER

Type	Consist Length	Total	Freight Train	Psgr Comm Trn	Work Train	Car(s)	Yard Switch	Light loco(s)	Vehicle Driver ?	M	F
Rail	???	1	-	-	-	1	-	-	-	1	-
Equip	1	105	-	-	-	27	2	76	4	80	21
Struck	2-5	216	73	33	6	6	35	63	10	145	61
Highway	6-10	233	118	55	2	2	53	3	13	155	65
User	11-15	176	86	56	2	1	30	1	16	119	41
	16-20	113	84	12	1	-	16	-	4	76	33
	21-25	91	82	3	-	1	5	-	3	66	22
	26-30	97	86	2	1	-	8	-	3	65	29
	31-35	73	66	1	1	-	5	-	5	53	15
	36-40	81	75	-	1	-	5	-	3	57	21
	41-45	78	74	1	-	-	2	1	3	49	26
	46-50	56	55	-	1	-	-	-	4	36	16
	51-60	162	159	-	1	-	2	-	9	119	34
	61-70	126	122	1	-	-	3	-	6	80	40
	71-80	141	141	-	-	-	-	-	6	100	35
	81-90	100	100	-	-	-	-	-	6	68	26
	91-100	93	93	-	-	-	-	-	2	61	30
	101-110	99	99	-	-	-	-	-	6	77	16
	111-120	121	120	-	-	-	1	-	9	86	26
	>= 121	90	90	-	-	-	-	-	1	69	20
	-Sub Total	2,252	1,723	164	16	38	167	144	113	1,562	577
Highway	???	1	-	-	-	1	-	-	-	1	-
User	1	49	1	-	-	17	1	30	2	31	16
Struck	2-5	88	22	7	4	4	24	27	11	60	17
Rail	6-10	59	34	8	-	-	17	-	1	39	19
Equip	11-15	49	27	6	1	1	14	-	2	30	17
	16-20	45	27	3	-	-	15	-	2	34	9
	21-25	21	19	-	-	-	2	-	1	17	3
	26-30	24	23	-	-	-	1	-	-	16	8
	31-35	27	24	-	-	-	3	-	-	21	6
	36-40	28	28	-	-	-	-	-	-	21	7
	41-45	29	22	-	-	-	7	-	1	24	4
	46-50	27	27	-	-	-	-	-	-	23	4
	51-60	45	39	-	-	-	6	-	1	36	8
	61-70	39	36	-	-	-	3	-	2	26	11
	71-80	34	33	-	-	-	1	-	-	28	6
	81-90	30	27	-	-	-	3	-	1	23	6
	91-100	25	24	-	-	-	1	-	2	20	3
	101-110	35	35	-	-	-	-	-	3	23	9
	111-120	37	37	-	-	-	-	-	-	26	11
	>= 121	16	16	-	-	-	-	-	-	11	5
	-Sub Total	708	501	24	5	23	98	57	29	510	169
Total		2,960	2,224	188	21	61	265	201	142	2,072	746

TABLE 8-11 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE CONSIST, NUMBER OF PEOPLE ON TRAIN, AND TYPE PERSON HURT

Consist	People on Train		Total		Hwy User		RR Employees		Others	
	Total	Avg	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf
Freight Train	10,509	5	268	886	267	840	0	39	1	7
Psgr Train	24,386	139	41	91	41	61	0	6	0	24
Commute Train	1,819	140	1	2	1	2	0	0	0	0
Work Train	106	5	1	7	1	7	0	0	0	0
Single Car	10	1	1	2	1	2	0	0	0	0
Cut of Cars	16	2	-	3	0	3	0	0	0	0
Yard/ Switch	755	3	2	65	2	62	0	3	0	0
Light loco(s)	524	3	11	64	9	55	2	5	0	4
Maint Insp car	57	1	-	14	0	12	0	1	0	1
Total	38,182	13	325	1,134	322	1,044	2	54	1	36

TABLE 8-12 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE VEHICLE, NUMBER OF OCCUPANTS, AND VEHICLE DAMAGE

Vehicle	People in Vehicles		Reported Vehicle Damage		Total		Hwy User		RR Employees		Others	
	Total	Avg	Total	Avg	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf
Car	2,068	1	5,002,727	2,983	193	633	192	630	0	5	1	-2
Truck	412	1	1,889,700	5,080	46	162	46	150	0	9	0	3
Trk& Trail	354	1	4,949,370	13,748	11	141	11	80	0	29	0	32
Pickup Trk	477	1	1,800,171	4,500	52	134	52	127	0	5	0	2
Van	152	2	483,289	4,785	17	44	15	39	2	5	0	0
Bus	40	13	46,000	15,333	-	-	0	0	0	0	0	0
School Bus	28	7	11,000	2,750	2	5	2	5	0	0	0	0
Motorcycle	6	1	25,800	3,686	2	4	2	4	0	0	0	0
Oth Mtr V.	41	1	197,241	5,479	2	11	2	9	0	1	0	1
Total	3,578	1	14,405,298	4,867	325	1,134	322	1,044	2	54	1	36

TABLE 8-13 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE WARNING. POSITION ON CROSSING AND IF HAZMAT WAS RELEASED

Type|	Warning	Total		Position on Crossing				Hazmat Released By				
		Cnt	%	Stalled	Stopped	Moving	Trapped	?	Hwy User	Rail User	Both	Neit-her
Rail Equip Struck Highway User	Gates	560	18.9	91	184	211	74	-	1	63	1	495
	Flashing lites	493	16.7	32	132	328	1	2	4	59	1	427
	HWTS,WW,Bells	58	2.0	5	16	36	1	-	1	3	-	54
	Watchman	23	0.8	-	7	16	-	-	1	1	-	21
	Stop signs	272	9.2	21	70	181	-	-	3	33	1	235
	Cross bucks	823	27.8	29	192	598	4	1	4	90	1	727
	Other	3	0.1	-	1	2	-	-	-	-	-	3
	None	20	0.7	-	11	8	1	-	-	3	-	17
	-Sub Total	2,252	76.1	178	613	1,380	81	3	14	252	4	1,979
Highway User Struck Rail Equip	Gates	124	4.2	-	3	120	1	-	2	14	1	107
	Flashing lites	200	6.8	-	1	199	-	-	-	30	-	170
	HWTS,WW,Bells	16	0.5	-	-	16	-	-	-	2	-	14
	Watchman	19	0.6	-	-	19	-	-	-	-	-	19
	Stop signs	52	1.8	1	-	51	-	-	-	8	-	44
	Cross bucks	294	9.9	1	1	292	-	-	-	31	2	261
	Other	1	0.0	-	-	1	-	-	-	-	-	1
	None	2	0.1	-	-	2	-	-	-	-	-	2
	-Sub Total	708	23.9	2	5	700	1	-	2	85	3	618
Total		2,960	100.0	180	618	2,080	82	3	16	337	7	2,597

TABLE 8-14 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSINGS, 1998 BY TYPE VEHICLE AND WARNING

Type|	Vehicle	Total		Gates	Flashi-ng lites	HWTS,W-W,Bells	Watchm-an	Stop signs	Cross bucks	Other	None
		Cnt	%								
Rail Equip Struck Highway User	Car	1,265	42.7	357	285	36	13	146	419	-	9
	Truck	276	9.3	57	64	5	1	37	108	1	3
	Trk& Trail	316	10.7	70	71	7	5	40	118	1	4
	Pickup Trk	286	9.7	53	52	7	3	39	130	1	1
	Van	72	2.4	18	17	2	1	7	26	-	1
	Bus	3	0.1	2	-	-	-	-	1	-	-
	School Bus	3	0.1	1	1	-	-	-	1	-	-
	Motorcycle	1	0.0	-	-	-	-	-	1	-	-
	Oth Mtr V.	30	1.0	2	3	1	-	3	19	-	2
	-Sub Total	2,252	76.1	560	493	58	23	272	823	3	20
Highway User Struck Rail Equip	Car	412	13.9	81	114	11	12	31	161	-	2
	Truck	96	3.2	14	32	3	1	5	41	-	-
	Trk& Trail	44	1.5	8	17	-	2	4	13	-	-
	Pickup Trk	114	3.9	13	30	1	2	11	57	-	-
	Van	29	1.0	5	5	1	2	-	15	1	-
	School Bus	1	0.0	-	-	-	-	1	-	-	-
	Motorcycle	6	0.2	1	2	-	-	-	3	-	-
	Oth Mtr V.	6	0.2	2	-	-	-	-	4	-	-
	-Sub Total	708	23.9	124	200	16	19	52	294	1	2
Total		2,960	100.0	684	693	74	42	324	1,117	4	22

TABLE 8-15 MOTOR VEHICLE HRC INCIDENTS AT PUBLIC CROSSING, 1998 BY WARNING STATUS FOR ACCIDENTS OCCURING AT CROSSINGS WITH TRAIN ACTIVATED DEVICES BY TYPE VEHICLE

Type| Vehicle			Status of Warning System							
		Total	Unknown	Provided Minimum 20 Secs.	Alleged > 60 Secs.	Alleged < 20 Secs.	Alleged No Warning	Confirm > 60 Secs.	Confirm < 20 Secs.	Confirm No Warning
Rail	Car	678	3	612	51	2	1	5	2	2
Equip	Truck	126	-	107	16	-	1	1	-	1
Struck	Trk& Trail	148	2	125	19	1	-	1	-	-
Highway	Pickup Trk	112	1	90	19	-	-	-	-	2
User	Van	37	-	32	3	-	-	-	-	2
	Bus	2	-	2	-	-	-	-	-	-
	School Bus	2	-	2	-	-	-	-	-	-
	Oth Mtr V.	6	-	5	1	-	-	-	-	-
	-Sub Total	1,111	6	975	109	3	2	7	2	7
Highway	Car	206	2	176	15	1	1	4	1	6
User	Truck	49	1	45	1	-	-	-	1	1
Struck	Trk& Trail	25	-	23	1	-	-	-	-	1
Rail	Pickup Trk	44	-	37	5	1	-	-	-	1
Equip	Van	11	-	9	1	-	-	-	-	1
	Motorcycle	3	-	3	-	-	-	-	-	-
	Oth Mtr V.	2	-	2	-	-	-	-	-	-
	-Sub Total	340	3	295	23	2	1	4	2	10
Total		1,451	9	1,270	132	5	3	11	4	17

CHAPTER 9

HIGHWAY-RAIL CROSSING INVENTORY

The Federal-Aid Highway Act of 1973 (Section 203) required that each State highway agency maintain an inventory of all crossings. According to the implementing instructions contained in the Federal-Aid Policy Guide, maintaining the National Inventory will satisfy the legislative requirement for a State Inventory. A primary purpose of the National Inventory is to provide for the existence of a uniform inventory data base which can be merged with accident/incident files and used to analyze information for planning and implementation of crossing improvement programs.

Railroads, with direction and guidance from the Association of American Railroads and the American Short Line Association, were assigned the responsibility for making a site-specific inventory of each highway-rail crossing and for installing a unique identifying number at each location. The railroads were also identified as being responsible for periodic updating of certain inventory information and maintenance of the crossing number.

The State highway-departments assisted in the project by providing site-specific highway location and use data. State public utility commissions and other State and local governmental agencies also participated in the project. The responsibility for the updating of certain highway information data items was determined to be the responsibility of the State and/or local governmental agencies.

The Inventory Data File is a record of grade crossing location, physical, and operational characteristics to provide information for the administration and statistical analysis of crossings. This information is reported on a voluntary basis to the FRA on the U.S. DOT-AAR Crossing Inventory Form.

The information contained on highway-rail incident reports is routinely merged with inventory data and the consolidated file is used for the development of Federal programs, funding alternatives for crossing improvement, studies related to railroad safety programs, effectiveness of warning devise, and for other safety programs and issues.

Although the inventory contains information on grade separated crossings, the counts appearing in this section are only for at-grade crossings, i.e., the locations where the potential exists for an impact between a rail and a highway user.

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CHAPTER 9

HIGHWAY-RAIL CROSSING INVENTORY

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Tables

9–1 PUBLIC CROSSINGS BY PROTECTION TYPE

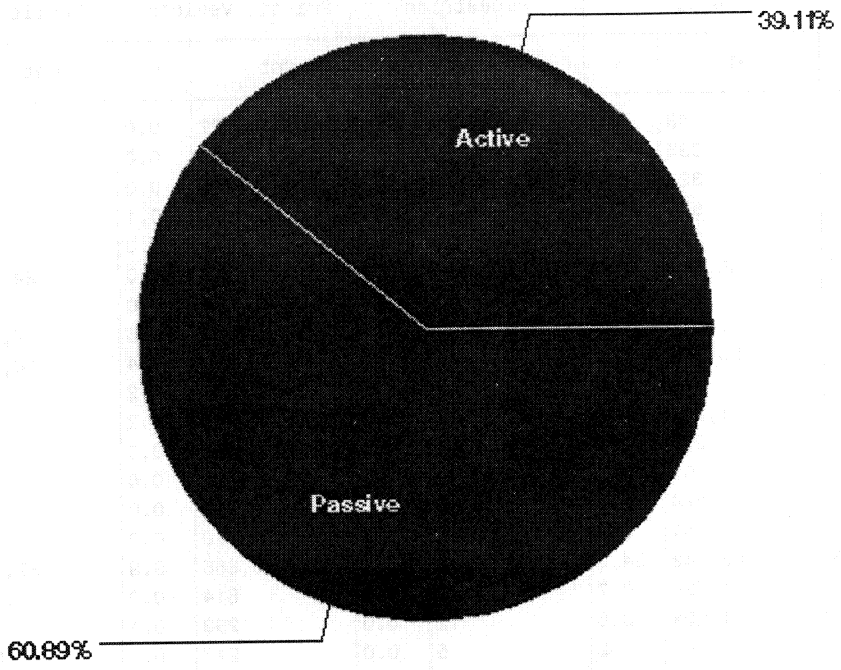

TABLE 9-1 AT-GRADE HIGHWAY-RAIL CROSSINGS BY RAILROAD

	Total		Pedestrian		Private Vehicle		Public Vehicle	
	Cnt	%	Cnt	%	Cnt	%	Cnt	%
ALS	48	0.0	-	-	27	0.0	21	0.0
ARR	333	0.1	8	0.0	104	0.0	221	0.1
ATK	323	0.1	14	0.0	68	0.0	241	0.1
BAR	506	0.2	5	0.0	341	0.1	160	0.1
BLE	238	0.1	2	0.0	96	0.0	140	0.1
BNSF	40,552	15.5	306	0.1	15,792	6.0	24,454	9.4
BRC	114	0.0	-	-	76	0.0	38	0.0
CR	12,040	4.6	106	0.0	4,221	1.6	7,713	3.0
CSX	25,777	9.9	307	0.1	8,825	3.4	16,645	6.4
DH	773	0.3	16	0.0	446	0.2	311	0.1
DME	1,362	0.5	2	0.0	556	0.2	804	0.3
DMIR	270	0.1	1	0.0	129	0.0	140	0.1
DWP	101	0.0	-	-	20	0.0	81	0.0
EJE	274	0.1	5	0.0	81	0.0	188	0.1
FEC	851	0.3	12	0.0	110	0.0	729	0.3
GRP3	63,442	24.3	449	0.2	25,886	9.9	37,107	14.2
GRS	1,799	0.7	13	0.0	614	0.2	1,172	0.4
GTW	1,203	0.5	12	0.0	299	0.1	892	0.3
GWWR	586	0.2	5	0.0	247	0.1	334	0.1
IC	5,991	2.3	77	0.0	2,328	0.9	3,586	1.4
IHB	132	0.1	2	0.0	45	0.0	85	0.0
IMRL	430	0.2	3	0.0	155	0.1	272	0.1
KCS	4,597	1.8	11	0.0	1,825	0.7	2,761	1.1
LI	402	0.2	9	0.0	83	0.0	310	0.1
MNCW	122	0.0	-	-	60	0.0	62	0.0
MRL	1,112	0.4	3	0.0	681	0.3	428	0.2
NICD	155	0.1	7	0.0	25	0.0	123	0.0
NIRC	85	0.0	-	-	10	0.0	75	0.0
NJTR	455	0.2	22	0.0	90	0.0	343	0.1
NS	33,203	12.7	144	0.1	12,735	4.9	20,324	7.8
PAL	446	0.2	3	0.0	186	0.1	257	0.1
PATH	2	0.0	-	-	2	0.0	-	-
PTRA	164	0.1	1	0.0	98	0.0	65	0.0
SCAX	299	0.1	11	0.0	39	0.0	249	0.1
SEPA	326	0.1	10	0.0	53	0.0	263	0.1
SOO	5,039	1.9	57	0.0	1,912	0.7	3,070	1.2
TM	425	0.2	-	-	195	0.1	230	0.1
TRRA	149	0.1	-	-	12	0.0	137	0.1
UP	51,890	19.9	334	0.1	20,233	7.7	31,323	12.0
URR	59	0.0	6	0.0	39	0.0	14	0.0
WC	4,233	1.6	54	0.0	1,517	0.6	2,662	1.0
WE	958	0.4	9	0.0	389	0.1	560	0.2
	261,266	100.0	2,026	0.8	100,650	38.5	158,590	60.7

TABLE 9-2 AT-GRADE HIGHWAY-RAIL CROSSINGS BY STATE

	Total		Pedestrian		Private Vehicle		Public Vehicle	
	Cnt	%	Cnt	%	Cnt	%	Cnt	%
Alabama	5,434	2.1	20	0.0	1,919	0.7	3,495	1.3
Alaska	337	0.1	8	0.0	104	0.0	225	0.1
Arizona	1,630	0.6	7	0.0	682	0.3	941	0.4
Arkansas	4,652	1.8	8	0.0	1,479	0.6	3,165	1.2
California	12,848	4.9	153	0.1	4,831	1.8	7,864	3.0
Colorado	3,256	1.2	22	0.0	1,298	0.5	1,936	0.7
Connecticut	633	0.2	-	-	261	0.1	372	0.1
Delaware	455	0.2	2	0.0	148	0.1	305	0.1
Dist Of Columbia	42	0.0	11	0.0	8	0.0	23	0.0
Florida	5,279	2.0	59	0.0	1,310	0.5	3,910	1.5
Georgia	8,385	3.2	38	0.0	2,509	1.0	5,838	2.2
Hawaii	6	0.0	-	-	-	-	6	0.0
Idaho	2,643	1.0	12	0.0	1,241	0.5	1,390	0.5
Illinois	15,746	6.0	299	0.1	5,502	2.1	9,945	3.8
Indiana	9,188	3.5	67	0.0	2,638	1.0	6,483	2.5
Iowa	9,487	3.6	48	0.0	4,204	1.6	5,235	2.0
Kansas	11,122	4.3	32	0.0	4,182	1.6	6,908	2.6
Kentucky	4,993	1.9	39	0.0	2,482	0.9	2,472	0.9
Louisiana	6,716	2.6	35	0.0	3,152	1.2	3,529	1.4
Maine	1,680	0.6	8	0.0	834	0.3	838	0.3
Maryland	1,375	0.5	7	0.0	690	0.3	678	0.3
Massachusetts	1,748	0.7	18	0.0	538	0.2	1,192	0.5
Michigan	8,429	3.2	107	0.0	2,633	1.0	5,689	2.2
Minnesota	8,244	3.2	51	0.0	3,087	1.2	5,106	2.0
Mississippi	4,872	1.9	16	0.0	2,034	0.8	2,822	1.1
Missouri	8,101	3.1	59	0.0	3,251	1.2	4,791	1.8
Montana	3,521	1.3	15	0.0	2,050	0.8	1,456	0.6
Nebraska	6,767	2.6	14	0.0	2,804	1.1	3,949	1.5
Nevada	570	0.2	3	0.0	266	0.1	301	0.1
New Hampshire	622	0.2	6	0.0	214	0.1	402	0.2
New Jersey	2,495	1.0	45	0.0	592	0.2	1,858	0.7
New Mexico	1,362	0.5	1	0.0	594	0.2	767	0.3
New York	6,518	2.5	67	0.0	3,170	1.2	3,281	1.3
N. Carolina	7,859	3.0	54	0.0	3,235	1.2	4,570	1.7
North Dakota	6,812	2.6	19	0.0	2,178	0.8	4,615	1.8
Ohio	9,585	3.7	30	0.0	3,178	1.2	6,377	2.4
Oklahoma	6,045	2.3	13	0.0	1,638	0.6	4,394	1.7
Oregon	5,215	2.0	89	0.0	2,816	1.1	2,310	0.9
Pennsylvania	9,054	3.5	123	0.0	3,389	1.3	5,542	2.1
Rhode Island	199	0.1	-	-	71	0.0	128	0.0
S. Carolina	4,288	1.6	10	0.0	1,248	0.5	3,030	1.2
South Dakota	3,503	1.3	5	0.0	1,361	0.5	2,137	0.8
Tennessee	5,014	1.9	24	0.0	1,821	0.7	3,169	1.2
Texas	18,509	7.1	31	0.0	6,200	2.4	12,278	4.7
Utah	1,780	0.7	4	0.0	789	0.3	987	0.4
Vermont	1,192	0.5	46	0.0	650	0.2	496	0.2
Virginia	4,863	1.9	40	0.0	2,754	1.1	2,069	0.8
Washington	5,975	2.3	95	0.0	3,014	1.2	2,866	1.1
West Virginia	3,562	1.4	62	0.0	1,919	0.7	1,581	0.6
Wisconsin	7,228	2.8	103	0.0	2,690	1.0	4,435	1.7
Wyoming	1,427	0.5	1	0.0	992	0.4	434	0.2
	261,266	100.0	2,026	0.8	100,650	38.5	158,590	60.7

TABLE 9-3 PUBLIC AT GRADE BY WARNING DEVICE AND RAILROAD, 1997

	Total		Unknown	Other	Cross bucks	Stop signs	Special warning	HWTS,WW-,Bells	Flashing lights	Gates
	Cnt	%								
ALS	21	0.01	1	-	6	-	1	-	7	6
ARR	221	0.14	8	-	99	26	7	-	35	46
ATK	241	0.15	7	3	9	6	5	-	9	202
BAR	160	0.10	-	-	56	5	8	-	86	5
BLE	140	0.09	2	-	70	-	2	-	29	37
BNSF	24,454	15.42	459	20	14,162	1,110	473	150	3,162	4,918
BRC	38	0.02	1	-	18	-	1	-	8	10
CR	7,713	4.86	518	153	2,279	218	856	129	1,979	1,581
CSX	16,644	10.50	477	12	5,362	1,492	317	122	3,614	5,248
DH	311	0.20	2	5	71	3	1	3	83	143
DME	804	0.51	30	-	600	46	-	2	112	14
DMIR	140	0.09	-	2	74	32	2	-	20	10
DWP	81	0.05	-	-	43	15	1	-	10	12
EJE	188	0.12	-	-	31	4	9	2	63	79
FEC	729	0.46	9	-	46	3	27	-	30	614
GRP3	37,106	23.40	1,309	161	21,435	3,109	1,175	448	6,355	3,114
GRS	1,172	0.74	47	2	281	43	194	19	348	238
GTW	892	0.56	2	-	88	186	35	4	201	376
GWWR	334	0.21	-	-	189	11	-	18	90	26
IC	3,586	2.26	185	4	1,527	383	85	26	852	524
IHB	85	0.05	3	-	10	-	17	-	24	31
IMRL	272	0.17	3	-	162	41	11	-	50	5
KCS	2,761	1.74	127	1	1,616	189	3	6	492	327
LI	310	0.20	-	-	9	-	-	1	-	300
MNCW	62	0.04	3	-	3	-	1	1	35	19
MRL	428	0.27	6	-	253	46	-	1	62	60
NICD	123	0.08	1	-	5	27	-	7	42	41
NIRC	75	0.05	1	-	-	-	1	1	5	67
NJTR	343	0.22	7	-	28	1	10	1	79	217
NS	20,324	12.82	649	87	7,779	1,596	490	103	4,041	5,579
PAL	257	0.16	3	-	118	10	-	3	103	20
PTRA	65	0.04	5	-	27	1	-	-	11	21
SCAX	249	0.16	-	-	8	1	-	-	1	239
SEPA	263	0.17	45	2	32	17	19	21	77	50
SOO	3,070	1.94	149	-	1,834	240	37	12	355	443
TM	230	0.15	7	-	146	6	10	-	59	2
TRRA	137	0.09	2	-	15	2	54	-	19	45
UP	31,323	19.75	1,323	40	15,448	1,753	314	394	4,641	7,410
URR	14	0.01	-	-	-	-	-	10	1	3
WC	2,662	1.68	20	-	1,331	259	24	32	762	234
WE	560	0.35	10	-	288	22	1	3	146	90
	158,588	100.0	5,421	492	75,558	10,903	4,191	1,519	28,098	32,406

TABLE 9-4 PUBLIC AT GRADE BY WARNING DEVICE AND STATE

	Total		Unknown	Other	Cross bucks	Stop signs	Special warning	HWTS,WW-,Bells	Flashing lights	Gates	AADT
	Cnt	%									
AK	225	0.14	9	-	102	26	7	-	35	46	461,644
AL	3,495	2.20	125	9	1,502	736	25	13	638	447	6,918,365
AR	3,165	2.00	130	-	1,974	189	69	24	445	334	3,821,594
AZ	941	0.59	26	-	327	93	53	4	72	366	2,888,911
CA	7,864	4.96	173	14	2,816	321	115	284	968	3,173	41,098,397
CO	1,936	1.22	62	3	902	252	52	37	244	384	3,972,724
CT	372	0.23	19	-	32	50	24	5	140	102	1,256,800
DC	23	0.01	2	-	1	2	12	2	4	-	179,150
DE	305	0.19	15	-	48	4	20	1	168	49	1,069,672
FL	3,910	2.47	51	6	892	128	89	13	548	2,183	18,809,383
GA	5,838	3.68	165	7	2,547	1,026	113	23	318	1,639	8,603,463
HI	6	0.00	-	-	5	1	-	-	-	-	8,000
IA	5,235	3.30	79	1	3,010	407	45	30	1,016	647	5,452,565
ID	1,389	0.88	27	-	506	540	5	5	182	124	1,781,706
IL	9,945	6.27	341	2	4,364	72	197	113	2,610	2,246	21,114,215
IN	6,483	4.09	122	6	2,405	887	67	96	1,570	1,330	13,559,003
KS	6,908	4.36	142	12	4,717	244	148	48	621	976	5,012,526
KY	2,472	1.56	118	-	1,059	52	46	17	784	396	3,866,253
LA	3,529	2.23	221	12	1,782	247	37	29	676	525	7,206,247
MA	1,192	0.75	51	3	230	5	212	31	463	197	4,364,201
MD	678	0.43	32	2	250	40	26	22	205	101	2,270,262
ME	838	0.53	1	-	281	14	75	-	395	72	1,935,389
MI	5,689	3.59	75	4	2,177	959	111	38	1,457	868	14,850,880
MN	5,106	3.22	100	2	3,035	705	17	8	614	625	6,166,658
MO	4,791	3.02	217	1	2,755	133	94	59	975	557	5,050,565
MS	2,822	1.78	195	10	1,128	695	47	16	531	200	4,233,233
MT	1,456	0.92	26	-	970	99	11	5	166	179	1,284,113
NC	4,570	2.88	215	6	2,087	55	160	21	700	1,326	9,168,479
ND	4,615	2.91	168	-	3,901	78	1	1	118	348	1,285,169
NE	3,949	2.49	114	-	2,675	267	14	12	299	568	2,486,928
NH	402	0.25	2	3	110	40	80	11	126	30	996,253
NJ	1,858	1.17	121	2	398	19	234	17	656	411	10,999,700
NM	767	0.48	7	4	420	12	7	8	81	228	890,091
NV	301	0.19	6	-	130	10	4	1	23	127	895,781
NY	3,281	2.07	74	24	823	18	244	63	636	1,399	7,823,625
OH	6,377	4.02	76	6	2,801	174	77	32	1,200	2,011	13,904,609
OK	4,394	2.77	60	7	2,881	123	111	23	670	519	4,771,594
OR	2,310	1.46	121	44	873	435	90	44	136	567	4,538,576
PA	5,542	3.49	449	276	1,888	140	645	111	1,292	741	16,547,534
RI	128	0.08	22	-	9	5	22	22	33	15	606,675
SC	3,029	1.91	21	-	1,190	426	145	-	511	736	5,342,237
SD	2,137	1.35	76	-	1,835	28	-	2	178	18	1,231,769
TN	3,169	2.00	236	1	1,523	169	173	36	666	365	6,567,020
TX	12,278	7.74	527	8	6,672	293	99	64	1,811	2,804	28,947,875
UT	987	0.62	71	5	424	58	86	5	166	172	1,798,176
VA	2,069	1.30	53	-	551	13	69	10	496	877	6,018,152
VT	496	0.31	2	-	199	25	44	3	196	27	702,703
WA	2,866	1.81	264	2	1,507	100	50	29	409	505	5,377,101
WI	4,435	2.80	75	-	1,961	438	100	70	1,283	508	9,519,127
WV	1,581	1.00	132	10	711	27	18	7	449	227	1,757,192
WY	434	0.27	5	-	172	23	1	4	118	111	427,027
	158,588	100.0	5,421	492	75,558	10,903	4,191	1,519	28,098	32,406	329,839,312

TABLE 9-5 PRIVATE AT GRADE CROSSINGS BY DEVELOPMENT AND RAILROAD, 1997

	Total						
	Cnt	%	Not reported	Farm	Residential	Recreational	Industrial
ALS	27	0.03	-	8	5	-	14
ARR	104	0.10	-	4	14	5	81
ATK	68	0.07	1	35	13	3	16
BAR	341	0.34	-	148	33	45	115
BLE	96	0.10	-	38	12	2	44
BNSF	15,799	15.69	3	11,144	1,161	162	3,329
BRC	76	0.08	-	-	-	-	76
CR	4,221	4.19	-	2,239	464	126	1,392
CSX	8,826	8.77	396	4,648	1,667	148	1,967
DH	446	0.44	-	305	49	37	55
DME	556	0.55	-	480	8	1	67
DMIR	129	0.13	-	24	17	1	87
DWP	20	0.02	-	4	4	7	5
EJE	81	0.08	-	39	1	-	41
FEC	112	0.11	85	4	3	-	20
GRP3	25,894	25.72	155	15,751	3,328	543	6,117
GRS	615	0.61	-	207	65	21	322
GTW	299	0.30	-	207	19	5	68
GWWR	247	0.25	-	217	2	1	27
IC	2,328	2.31	-	1,597	235	13	483
IHB	45	0.04	-	-	2	-	43
IMRL	155	0.15	-	87	39	6	23
KCS	1,825	1.81	-	1,202	253	11	359
LI	83	0.08	-	67	4	3	9
MNCW	60	0.06	-	12	8	7	33
MRL	681	0.68	-	466	62	15	138
NICD	25	0.02	-	8	2	-	15
NIRC	10	0.01	-	3	3	1	3
NJTR	90	0.09	-	35	16	5	34
NS	12,735	12.65	917	7,015	2,318	167	2,318
PAL	186	0.18	-	118	30	1	37
PATH	2	0.00	-	1	-	-	1
PTRA	98	0.10	-	1	-	-	97
SCAX	39	0.04	-	13	6	3	17
SEPA	53	0.05	-	22	12	2	17
SOO	1,912	1.90	-	1,471	114	22	305
TM	195	0.19	1	117	18	2	57
TRRA	12	0.01	-	3	-	-	9
UP	20,234	20.10	188	13,104	1,617	218	5,107
URR	39	0.04	-	-	-	-	39
WC	1,518	1.51	-	906	145	39	428
WE	389	0.39	-	216	36	5	132
	100,671	100.0	1,746	61,966	11,785	1,627	23,547

TABLE 9-6 PRIVATE AT GRADE CROSSINGS BY TYPE DEVELOPMENT AND STATE, 1997

	Total						
	Cnt	%	Not reported	Farm	Residential	Recreational	Industrial
AK	104	0.10	-	4	14	5	81
AL	1,919	1.91	-	1,102	343	30	444
AR	1,479	1.47	-	982	214	17	266
AZ	682	0.68	-	392	24	13	253
CA	4,832	4.80	9	2,129	341	123	2,230
CO	1,298	1.29	2	775	247	16	258
CT	261	0.26	1	49	30	32	149
DC	8	0.01	-	-	-	-	8
DE	148	0.15	-	82	37	5	24
FL	1,320	1.31	226	467	181	26	420
GA	2,509	2.49	-	1,373	609	31	496
IA	4,204	4.18	1	3,139	327	48	689
ID	1,241	1.23	-	774	60	11	396
IL	5,503	5.47	-	3,625	489	75	1,314
IN	2,637	2.62	3	1,741	313	29	551
KS	4,182	4.15	-	3,558	202	8	414
KY	2,482	2.47	-	1,452	673	17	340
LA	3,152	3.13	-	1,704	493	21	934
MA	538	0.53	-	169	68	39	262
MD	690	0.69	-	395	74	15	206
ME	834	0.83	-	348	112	73	301
MI	2,634	2.62	-	1,332	398	130	774
MN	3,088	3.07	-	2,222	238	50	578
MO	3,251	3.23	1	2,320	333	26	571
MS	2,034	2.02	-	1,357	401	7	269
MT	2,051	2.04	-	1,619	107	24	301
NC	3,235	3.21	1	1,596	826	30	782
ND	2,178	2.16	-	1,949	26	10	193
NE	2,805	2.79	-	2,474	83	12	236
NH	215	0.21	-	111	28	20	56
NJ	592	0.59	1	198	63	12	318
NM	594	0.59	-	442	30	4	118
NV	266	0.26	191	28	3	7	37
NY	3,170	3.15	-	2,144	336	99	591
OH	3,178	3.16	-	2,083	285	38	772
OK	1,638	1.63	-	1,233	150	10	245
OR	2,818	2.80	-	1,353	335	41	1,089
PA	3,389	3.37	-	1,445	512	156	1,276
RI	71	0.07	-	7	18	9	37
SC	1,248	1.24	2	632	291	19	304
SD	1,361	1.35	-	1,143	81	3	134
TN	1,821	1.81	-	1,067	384	24	346
TX	6,200	6.16	3	4,136	502	35	1,524
UT	789	0.78	-	524	46	14	205
VA	2,754	2.74	1,304	969	189	18	274
VT	650	0.65	-	450	62	29	109
WA	3,016	3.00	-	1,446	402	56	1,112
WI	2,691	2.67	-	1,762	204	68	657
WV	1,919	1.91	1	835	584	41	458
WY	992	0.99	-	829	17	1	145
	100,671	100.0	1,746	61,966	11,785	1,627	23,547

CHAPTER 10

TRESPASSERS, NOT AT HIGHWAY-RAIL CROSSINGS

A "trespasser" is defined as any person who is on that part of railroad property used in railroad operation and whose presence is prohibited, forbidden, or unlawful. Employees who are trespassing on railroad property are to be reported as "Trespassers" (Class E).

A person on a highway-rail crossing should not be classified as a trespasser unless the crossing is protected by gates, or other similar barriers that were closed when the person went on the crossing, or unless the person attempted to pass over, under, or between cars or locomotives of a consist occupying the crossing. Although these individuals are identified as "trespassers" on form FRA F 6180.55a, they are excluded from this chapter because the incident is defined as a highway-rail incident. These casualties can be found in Chapters 7 and 8 that summarize highway-rail crossing incidents.

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CHAPTER 10

TRESPASSERS, NOT AT HIGHWAY-RAIL CROSSINGS

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Tables

10—1 TRESPASSER CASES, 1998

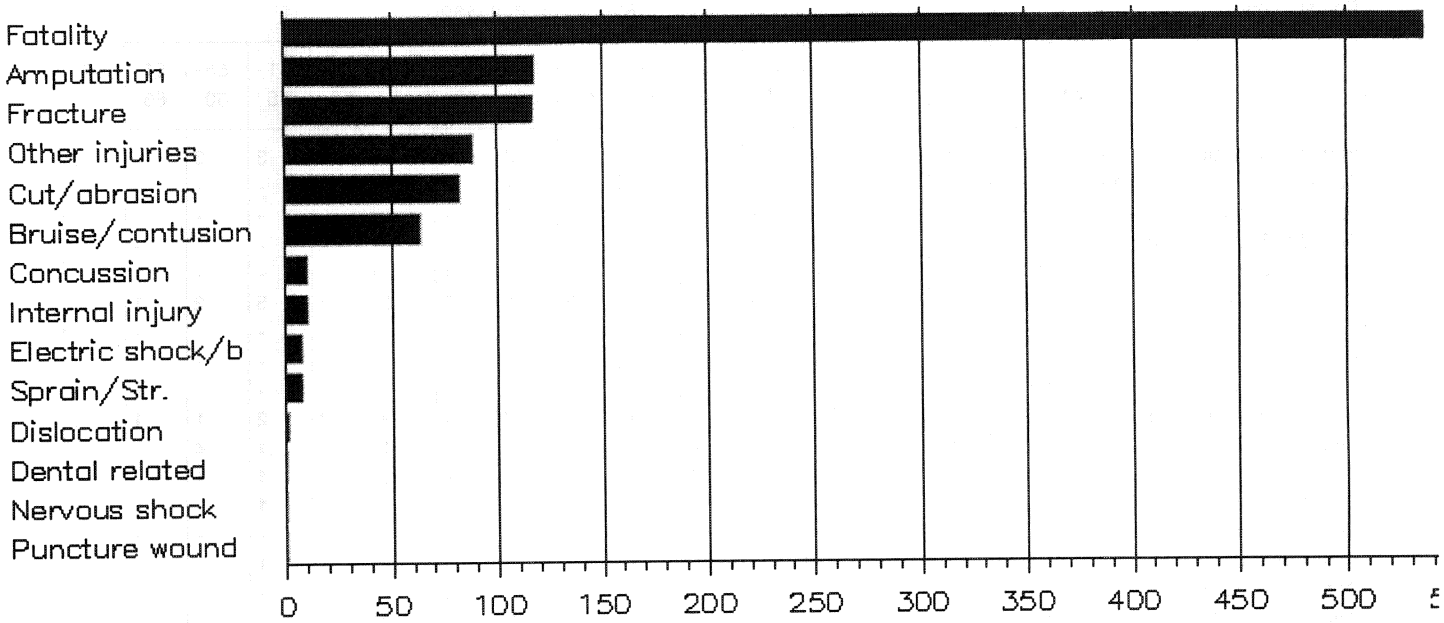

TABLE 10-1 REPORTABLE CONDITIONS TO TRESPASSERS NOT AT HRC, 1998

Condition	Total		Age of Trespasser														
	Cnt	%	Oth-er	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
Bruise/contusion	64	6.1	21	-	1	3	6	4	6	3	6	5	1	3	3	-	2
Sprain/Str.,leg/foot	3	0.3	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-
Sprain/Str.,head/fac	1	0.1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Sprain/Str.,torso	2	0.2	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
Sprain/Str., other	2	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Cut/abrasion	82	7.8	11	2	1	8	12	6	9	8	9	5	3	5	2	1	-
Puncture wound	1	0.1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Electric shock/burn	8	0.8	-	-	1	4	-	2	-	1	-	-	-	-	-	-	-
Dislocation	2	0.2	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Fracture,arm/hand	26	2.5	3	-	-	2	2	1	1	2	4	2	3	2	1	1	2
Fracture,leg/foot	53	5.1	11	-	-	5	4	1	11	7	7	1	1	1	4	-	-
Fracture,head/face	11	1.0	-	-	1	1	1	2	1	2	-	1	-	1	1	-	-
Fracture,torso	22	2.1	1	-	-	-	4	7	-	3	3	2	1	1	-	-	-
Fracture,multiple	3	0.3	1	-	-	1	-	-	-	-	1	-	-	-	-	-	-
Fracture,other	2	0.2	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Dental related	1	0.1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amputation,arm/hand	20	1.9	-	-	-	1	5	3	1	3	3	2	2	-	-	-	-
Amputation,leg/foot	95	9.1	10	1	3	6	11	14	13	9	12	6	10	-	-	-	-
Amputation,other	3	0.3	-	-	-	-	-	1	1	-	1	-	-	-	-	-	-
Fatality	536	51	100	4	5	16	60	70	61	45	68	42	30	13	12	6	4
Concussion	11	1.0	2	-	-	-	-	2	1	-	1	4	-	-	1	-	-
Nervous shock	1	0.1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Internal injury	11	1.0	4	-	-	-	-	1	1	-	-	-	2	1	1	-	1
All other injuries	89	8.5	20	-	2	4	6	13	12	8	11	4	3	1	3	1	1
ALL	1049	100	186	7	14	51	114	128	121	92	129	74	56	29	28	9	11

TABLE 10-2 TRESPASSER FATALITIES, BY RAILROAD AND AGE, NOT AT HRC, 1998

RR	Cnt	%	Age of Trespasser														
			Oth-er	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
ARR	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
ATK	67	12.5	33	-	1	1	4	1	3	5	9	7	3	-	-	-	-
BNSF	104	19.4	5	2	2	1	16	20	17	10	15	8	4	1	2	1	-
CR	23	4.3	-	-	-	3	1	3	2	3	4	1	3	1	-	1	1
CSX	64	11.9	2	1	-	-	7	23	9	5	4	5	3	3	2	-	-
DWP	1	0.2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
FEC	9	1.7	1	-	-	-	1	-	1	1	1	-	2	1	-	-	1
GRP3	5	0.9	2	-	-	-	-	-	-	-	1	1	1	-	-	-	-
GRS	2	0.4	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-
GWWR	1	0.2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
IC	2	0.4	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-
KCS	4	0.7	-	1	-	-	1	-	1	-	-	1	-	-	-	-	-
LI	6	1.1	4	-	-	-	-	1	1	-	-	-	-	-	-	-	-
MBTA	1	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
MNCW	4	0.7	2	-	-	-	1	-	-	1	-	-	-	-	-	-	-
NIRC	4	0.7	2	-	-	-	1	-	-	-	-	-	1	-	-	-	-
NJTR	18	3.4	1	-	-	-	1	5	2	2	2	3	-	1	1	-	-
NS	63	11.8	-	-	1	5	11	8	7	7	12	1	6	3	2	-	-
PAL	1	0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PCMZ	3	0.6	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-
SCAX	2	0.4	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
SEPA	3	0.6	-	-	1	-	1	-	-	-	-	-	-	-	1	-	-
SOO	1	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
UP	146	27.2	46	-	-	6	10	9	16	11	17	14	5	3	3	4	2
WC	1	0.2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
ALL	536	100	100	4	5	16	60	70	61	45	68	42	30	13	12	6	4

TABLE 10-3 TRESPASSERS F FATALITIES, BY STATE AND AGE, NOT AT HRC, 1998

ST			Age of Trespasser														
	Cnt	%	Oth-er	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
AL	13	2.4	-	-	-	1	1	1	-	2	3	-	3	1	1	-	-
AK	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
AZ	15	2.8	9	-	-	-	2	1	1	-	1	-	-	-	-	1	-
AR	12	2.2	5	-	1	1	1	1	1	-	-	2	-	-	-	-	-
CA	79	14.7	19	1	1	2	8	9	9	9	6	8	4	-	3	-	-
CO	8	1.5	1	-	-	-	-	2	3	1	-	-	-	-	1	-	-
CT	3	0.6	1	-	-	-	1	-	-	1	-	-	-	-	-	-	-
DE	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
DC	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
FL	23	4.3	2	-	-	-	4	3	2	1	3	2	4	1	-	-	1
GA	16	3.0	1	-	-	1	-	4	2	3	2	1	-	1	1	-	-
ID	4	0.7	1	-	-	-	1	1	-	-	1	-	-	-	-	-	-
IL	34	6.3	7	-	-	1	5	5	2	-	7	2	5	-	-	-	-
IN	5	0.9	1	-	-	1	1	-	-	-	1	-	1	-	-	-	-
IA	3	0.6	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-
KS	7	1.3	2	-	-	-	1	-	1	-	-	1	-	1	-	1	-
KY	5	0.9	1	-	-	-	-	3	-	-	-	-	-	1	-	-	-
LA	7	1.3	1	-	-	-	2	2	-	-	-	1	1	-	-	-	-
ME	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
MD	4	0.7	-	-	-	-	-	1	1	-	1	1	-	-	-	-	-
MA	4	0.7	-	-	-	-	1	-	-	1	2	-	-	-	-	-	-
MI	5	0.9	2	-	-	-	1	1	1	-	-	-	-	-	-	-	-
MN	8	1.5	-	-	-	-	4	-	-	2	-	-	1	-	-	-	1
MS	3	0.6	-	-	-	-	-	1	-	1	-	-	-	1	-	-	-
MO	19	3.5	3	1	-	-	4	3	3	-	3	1	-	-	-	-	1
MT	3	0.6	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-
NE	2	0.4	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-
NV	5	0.9	2	-	-	-	-	-	1	-	1	1	-	-	-	-	-
NH	1	0.2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
NJ	23	4.3	2	-	-	-	1	6	3	2	2	2	2	1	1	-	1
NM	7	1.3	1	-	-	-	1	3	1	-	-	1	-	-	-	-	-
NY	25	4.7	12	-	1	-	1	1	2	2	3	2	-	-	-	1	-
NC	24	4.5	4	-	-	-	3	5	2	4	4	-	1	1	-	-	-
ND	1	0.2	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
OH	12	2.2	1	-	-	2	1	-	3	2	1	1	1	-	-	-	-
OK	7	1.3	-	-	-	-	1	1	1	-	2	1	-	-	1	-	-
OR	15	2.8	2	-	-	-	-	1	4	3	2	-	2	1	-	-	-
PA	16	3.0	1	-	1	2	2	2	1	-	4	1	-	1	1	-	-
RI	2	0.4	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-
SC	17	3.2	3	1	-	1	2	4	-	1	2	1	-	1	1	-	-
TN	10	1.9	-	-	-	-	2	2	5	-	-	-	1	-	-	-	-
TX	50	9.3	15	-	-	2	3	1	6	6	8	6	-	2	-	1	-
UT	1	0.2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
VT	1	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
VA	10	1.9	-	-	1	-	2	2	1	3	-	-	-	-	1	-	-
WA	13	2.4	-	1	-	1	-	-	2	-	2	3	3	-	-	1	-
WV	5	0.9	-	-	-	-	1	2	1	-	1	-	-	-	-	-	-
WI	4	0.7	-	-	-	1	1	-	1	-	1	-	-	-	-	-	-
WY	1	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
ALL	536	100	100	4	5	16	60	70	61	45	68	42	30	13	12	6	4

TABLE 10-4 TRESPASSERS INJURED, BY RAILROAD AND AGE, NOT AT HRC, 1998

RR	Cnt	%	Age of Trespasser														
			Oth-er	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
ATK	30	5.8	14	-	-	4	-	1	1	-	4	1	2	1	2	-	-
BNSF	70	13.6	2	-	-	1	10	13	11	9	8	7	1	2	2	2	2
CR	30	5.8	4	-	-	3	4	3	1	2	5	2	2	1	3	-	-
CSX	55	10.7	-	-	1	4	3	12	5	8	10	7	3	1	1	-	-
DH	2	0.4	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-
FEC	16	3.1	1	-	-	2	1	-	2	4	2	1	1	2	-	-	-
GRP3	24	4.7	7	-	-	2	5	3	-	1	3	-	1	-	1	-	1
GRS	3	0.6	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-
IC	4	0.8	-	-	-	-	-	-	1	2	-	-	1	-	-	-	-
IHB	1	0.2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
IMRL	2	0.4	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
KCS	11	2.1	-	-	-	-	1	1	3	1	1	2	1	-	1	-	-
LI	10	1.9	-	-	1	3	-	4	-	-	1	-	1	-	-	-	-
MBTA	1	0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MNCW	2	0.4	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-
NIRC	9	1.8	1	-	-	-	-	1	2	1	3	1	-	-	-	-	-
NJTR	2	0.4	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
NS	58	11.3	-	1	2	5	8	3	11	4	9	4	3	4	3	-	1
PAL	1	0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PATH	2	0.4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
PCMZ	6	1.2	2	1	-	-	-	-	1	-	-	-	1	-	1	-	-
SCAX	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
SEPA	12	2.3	3	-	1	2	-	2	-	-	1	1	1	-	-	-	1
SOO	6	1.2	-	-	1	-	2	-	-	-	2	1	-	-	-	-	-
TM	1	0.2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
UP	151	29.4	48	1	3	6	18	15	21	10	11	4	6	5	1	1	1
WC	3	0.6	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-
ALL	513	100	86	3	9	35	54	58	60	47	61	32	26	16	16	3	7

TABLE 10-5 TRESPASSERS INJURED, BY STATE AND AGE, NOT AT HRC, 1998

ST			Age of Trespasser														
	Cnt	%	Oth-er	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70
AL	5	1.0	-	-	-	1	2	1	1	-	-	-	-	-	-	-	-
AK	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
AZ	10	1.9	3	-	-	-	1	2	2	1	-	-	1	-	-	-	-
AR	7	1.4	-	-	-	2	1	2	-	-	1	-	-	1	-	-	-
CA	56	10.9	15	1	-	1	9	8	6	2	3	3	3	-	3	1	1
CO	10	1.9	1	-	-	-	-	3	-	2	2	1	1	-	-	-	-
CT	1	0.2	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
DE	1	0.2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
DC	1	0.2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
FL	35	6.8	2	-	-	3	1	3	2	8	6	4	3	3	-	-	-
GA	17	3.3	-	-	-	1	1	3	3	-	3	-	1	2	3	-	-
ID	4	0.8	-	-	1	1	-	-	-	1	-	-	1	-	-	-	-
IL	24	4.7	6	-	1	-	1	3	4	2	4	2	1	-	-	-	-
IN	10	1.9	1	1	-	-	3	1	1	-	1	-	-	-	1	-	1
IA	6	1.2	1	-	1	-	1	-	-	1	1	-	1	-	-	-	-
KS	9	1.8	1	-	-	-	2	1	1	-	-	2	-	1	-	-	1
KY	12	2.3	1	-	-	-	1	2	-	4	4	-	-	-	-	-	-
LA	11	2.1	1	-	-	1	-	1	2	-	1	2	2	-	1	-	-
MD	7	1.4	1	-	-	1	-	1	-	-	2	2	-	-	-	-	-
MA	8	1.6	3	-	-	3	1	-	-	-	1	-	-	-	-	-	-
MI	7	1.4	1	-	-	1	1	1	-	-	1	-	-	1	1	-	-
MN	10	1.9	-	-	-	-	3	-	2	-	4	1	-	-	-	-	-
MS	6	1.2	-	-	-	-	-	-	1	2	-	3	-	-	-	-	-
MO	7	1.4	-	-	-	1	1	1	1	2	1	-	-	-	-	-	-
NE	4	0.8	-	-	-	-	-	1	-	-	1	1	-	-	1	-	-
NV	4	0.8	2	-	-	-	-	-	1	-	-	-	-	1	-	-	-
NH	6	1.2	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NJ	3	0.6	1	-	-	-	-	-	-	1	1	-	-	-	-	-	-
NM	8	1.6	-	-	-	-	2	1	1	1	1	2	-	-	-	-	-
NY	23	4.5	1	-	1	5	1	4	-	2	3	-	3	-	2	-	1
NC	14	2.7	-	-	-	-	-	2	5	1	3	1	1	1	-	-	-
ND	2	0.4	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
OH	21	4.1	-	-	-	2	2	3	2	3	3	2	1	1	2	-	-
OK	5	1.0	-	-	-	-	-	1	3	-	-	-	-	-	-	1	-
OR	10	1.9	-	1	-	-	2	1	3	1	1	1	-	-	-	-	-
PA	28	5.5	4	-	1	5	3	3	1	1	2	3	2	1	1	-	1
RI	1	0.2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SC	6	1.2	1	-	1	-	2	-	1	-	1	-	-	-	-	-	-
TN	5	1.0	-	-	-	1	-	-	1	2	1	-	-	-	-	-	-
TX	78	15.2	30	-	-	2	7	7	11	6	7	1	3	4	-	-	-
UT	1	0.2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
VT	2	0.4	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
VA	3	0.6	1	-	-	1	-	-	-	-	-	-	1	-	-	-	-
WA	7	1.4	1	-	-	-	1	-	-	2	1	-	-	-	1	1	-
WV	6	1.2	-	-	1	-	-	1	3	-	-	-	1	-	-	-	-
WI	9	1.8	-	-	2	3	2	-	-	2	-	-	-	-	-	-	-
WY	2	0.4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
ALL	513	100	86	3	9	35	54	58	60	47	61	32	26	16	16	3	7

TABLE 10-6 TRESPASSERS NOT AT HRC BY STATE AND AGE GROUP, 1998

	Fatal						Nonfatal Cases					
	Age Group				Total		Age Group				Total	
	Unk	< 16	16-21	> 21	Cnt	%	Unk	< 16	16-21	> 21	Cnt	%
AL	-	1	2	10	13	2.4	-	1	3	1	5	1.0
AK	-	-	-	1	1	0.2	-	-	-	1	1	0.2
AZ	8	-	2	5	15	2.8	3	-	1	6	10	1.9
AR	5	2	2	3	12	2.2	-	2	1	4	7	1.4
CA	19	4	12	44	79	14.7	15	2	10	29	56	10.9
CO	-	-	-	8	8	1.5	-	-	3	7	10	1.9
CT	1	-	1	1	3	0.6	-	-	-	1	1	0.2
DE	-	-	-	1	1	0.2	-	-	1	-	1	0.2
DC	-	-	-	1	1	0.2	-	-	-	1	1	0.2
FL	1	-	6	16	23	4.3	1	3	4	27	35	6.8
GA	1	1	3	11	16	3.0	-	1	3	13	17	3.3
ID	1	-	2	1	4	0.7	-	2	-	2	4	0.8
IL	6	1	5	22	34	6.3	3	1	2	18	24	4.7
IN	-	1	1	3	5	0.9	1	1	3	5	10	1.9
IA	-	-	1	2	3	0.6	1	1	1	3	6	1.2
KS	2	-	1	4	7	1.3	1	-	3	5	9	1.8
KY	1	-	1	3	5	0.9	1	-	2	9	12	2.3
LA	-	-	3	4	7	1.3	1	1	1	8	11	2.1
ME	-	-	-	1	1	0.2	-	-	-	-	0	-
MD	-	-	-	4	4	0.7	1	1	1	4	7	1.4
MA	-	-	1	3	4	0.7	3	3	1	1	8	1.6
MI	1	-	1	3	5	0.9	1	1	2	3	7	1.4
MN	-	-	4	4	8	1.5	-	-	3	7	10	1.9
MS	-	-	1	2	3	0.6	-	-	-	6	6	1.2
MO	1	1	5	12	19	3.5	-	1	1	5	7	1.4
MT	-	-	-	3	3	0.6	-	-	-	-	0	-
NE	-	-	1	1	2	0.4	-	-	1	3	4	0.8
NV	1	-	-	4	5	0.9	2	-	-	2	4	0.8
NH	-	-	1	-	1	0.2	6	-	-	-	6	1.2
NJ	1	-	2	20	23	4.3	1	-	-	2	3	0.6
NM	1	-	2	4	7	1.3	-	-	2	6	8	1.6
NY	10	1	1	13	25	4.7	1	6	1	15	23	4.5
NC	3	-	8	13	24	4.5	-	-	-	14	14	2.7
ND	-	-	-	1	1	0.2	-	-	-	2	2	0.4
OH	1	2	1	8	12	2.2	-	2	3	16	21	4.1
OK	-	-	2	5	7	1.3	-	-	-	5	5	1.0
OR	1	-	1	13	15	2.8	-	1	3	6	10	1.9
PA	1	3	2	10	16	3.0	4	6	3	15	28	5.5
RI	-	-	1	1	2	0.4	1	-	-	-	1	0.2
SC	3	2	6	6	17	3.2	1	1	2	2	6	1.2
TN	-	-	2	8	10	1.9	-	1	-	4	5	1.0
TX	15	2	3	30	50	9.3	29	2	7	40	78	15.2
UT	-	-	-	1	1	0.2	-	-	1	-	1	0.2
VT	-	-	-	1	1	0.2	1	-	1	-	2	0.4
VA	-	1	4	5	10	1.9	1	1	-	1	3	0.6
WA	-	2	-	11	13	2.4	1	-	1	5	7	1.4
WV	-	-	3	2	5	0.9	-	1	-	5	6	1.2
WI	-	1	1	2	4	0.7	-	5	2	2	9	1.8
WY	-	-	-	1	1	0.2	-	-	-	2	2	0.4
ALL	84	25	95	332	536	100.0	80	47	73	313	513	100.0

TABLE 10-7 TRESPASSERS CASUALTIES, BY MONTH AND DAY, NOT AT HRC, 1998

Cond	Month	Total		Day Of The Week							Age of Person			
		Cnt	%	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Unk	< 16	16-21	> 21
Ftl	Jan	36	3.4	5	6	6	6	1	4	8	9	-	4	23
	Feb	29	2.8	4	7	6	4	1	3	4	5	1	6	17
	Mar	27	2.6	4	4	2	2	5	6	4	6	-	4	17
	Apr	32	3.1	7	4	3	6	3	4	5	3	4	4	21
	May	60	5.7	11	10	7	12	4	10	6	16	3	8	33
	Jun	54	5.1	6	7	12	10	6	8	5	9	3	8	34
	Jul	71	6.8	8	12	16	12	8	7	8	5	4	16	46
	Aug	46	4.4	3	9	11	9	7	4	3	6	3	7	30
	Sep	49	4.7	9	9	9	4	7	5	6	7	3	11	28
	Oct	56	5.3	13	7	13	7	4	8	4	10	1	11	34
	Nov	41	3.9	7	5	7	6	5	9	2	5	1	10	25
	Dec	35	3.3	7	1	7	2	2	9	7	3	2	6	24
	Total	536	51.1	84	81	99	80	53	77	62	84	25	95	332
Nonf	Jan	34	3.2	1	4	7	9	5	5	3	4	2	4	24
	Feb	35	3.3	9	6	3	6	4	3	4	5	3	9	18
	Mar	32	3.1	3	4	10	8	3	3	1	9	3	5	15
	Apr	31	3.0	9	6	2	4	4	3	3	8	3	2	18
	May	47	4.5	5	8	5	8	9	6	6	3	6	7	31
	Jun	39	3.7	8	6	6	5	3	7	4	7	2	12	18
	Jul	53	5.1	9	5	11	3	10	6	9	12	6	6	29
	Aug	66	6.3	8	9	17	9	12	3	8	6	7	8	45
	Sep	53	5.1	11	2	6	10	7	9	8	8	5	10	30
	Oct	43	4.1	11	3	8	4	5	6	6	4	6	5	28
	Nov	37	3.5	7	3	6	6	1	3	11	7	3	3	24
	Dec	43	4.1	6	4	7	6	3	7	10	7	1	2	33
	Total	513	48.9	87	60	88	78	66	61	73	80	47	73	313
Total		1049	100	171	141	187	158	119	138	135	164	72	168	645

TABLE 10-8 TRESPASSERS CASUALTIES, BY TIME AND DAY, NOT AT HRC, 1998

Time		Total	Day Of The Week													
			Sun		Mon		Tue		Wed		Thu		Fri		Sat	
		Cnt	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf	Ftl	Nonf
AM	1	68	4	5	6	5	5	6	4	5	7	4	5	6	3	3
	2	60	7	3	8	1	6	4	7	5	5	1	3	4	4	2
	3	61	6	4	2	2	12	8	4	4	2	4	2	3	2	6
	4	38	4	3	4	5	1	5	5	2	2	1	1	1	4	-
	5	27	3	2	4	1	5	1	1	1	2	1	-	-	2	4
	6	20	3	-	3	-	3	1	1	1	2	1	1	2	1	1
	7	29	2	1	2	2	5	1	2	2	1	4	1	1	1	4
	8	46	5	2	-	2	7	1	4	3	6	3	6	4	1	2
	9	37	4	3	2	-	5	2	3	3	-	1	8	2	1	3
	10	46	4	3	1	2	4	8	6	6	2	-	4	2	2	2
	11	42	2	7	6	-	3	4	6	5	-	1	4	2	1	1
	12	62	8	2	7	4	3	5	9	5	2	6	1	3	5	2
	Total	536	52	35	45	24	59	46	52	42	31	27	36	30	27	30
PM	1	36	2	1	4	-	1	2	3	-	3	5	3	6	4	2
	2	29	1	4	1	4	-	3	2	1	1	-	4	3	1	4
	3	28	2	5	1	-	3	3	1	1	2	1	2	3	2	2
	4	35	1	2	1	3	5	7	1	3	2	3	2	2	1	2
	5	51	1	8	3	6	6	5	1	7	1	5	2	-	4	2
	6	53	5	8	8	3	4	1	1	3	3	1	6	1	5	4
	7	48	4	2	3	2	5	4	1	7	1	6	6	3	1	3
	8	40	4	4	3	3	2	6	1	1	1	-	5	1	5	4
	9	42	3	1	2	6	4	2	3	1	5	2	3	1	5	4
	10	52	5	9	4	3	4	3	2	3	1	2	3	4	2	7
	11	61	3	5	3	5	5	4	6	4	2	9	3	6	4	2
	12	38	1	3	3	1	1	2	6	5	-	5	2	1	1	7
	Total	513	32	52	36	36	40	42	28	36	22	39	41	31	35	43
Total		1,049	84	87	81	60	99	88	80	78	53	66	77	61	62	73

TABLE 10-9 TRESPASSERS INJURED, BY LOCATION, NOT AT HRC, 1998

Location	Total		Fatal		Nonfatal		Age of Person			
	Cnt	%	Cnt	%	Cnt	%	Unk	< 16	16-21	> 21
Alongside of on-track equipmen	66	6.3	20	3.7	46	9.0	10	6	13	37
Beside track	167	15.9	60	11.2	107	20.9	20	14	29	104
Between tracks	201	19.2	132	24.6	69	13.5	37	5	38	121
Between cars/locomotives	38	3.6	8	1.5	30	5.8	6	5	4	23
In cab or on walkways of locom	2	0.2	-	-	2	0.4	-	-	1	1
In car	9	0.9	2	0.4	7	1.4	1	1	2	5
In/operating vehicle	5	0.5	2	0.4	3	0.6	-	-	-	5
On bridge/trestle	32	3.1	21	3.9	11	2.1	1	9	6	16
On highway-rail crossing	6	0.6	4	0.7	2	0.4	1	-	-	5
On other rail crossing	4	0.4	2	0.4	2	0.4	-	-	1	3
On side of car	25	2.4	-	-	25	4.9	1	6	5	13
On track	425	40.5	268	50.0	157	30.6	79	18	55	273
On end of car	16	1.5	3	0.6	13	2.5	1	1	6	8
On pole/signal mast	3	0.3	-	-	3	0.6	-	1	-	2
On platform	7	0.7	2	0.4	5	1.0	-	2	2	3
On stairs	1	0.1	1	0.2	-	-	-	-	1	-
Other location on locomotive	1	0.1	-	-	1	0.2	-	-	-	1
Under car	22	2.1	9	1.7	13	2.5	1	3	3	15
Under locomotive	3	0.3	-	-	3	0.6	-	-	-	3
Other location	16	1.5	2	0.4	14	2.7	6	1	2	7
ALL	1049	100	536	100	513	100	164	72	168	645

TABLE 10-10 TRESPASSERS INJURED, BY EVENT, NOT AT HRC, 1998

Location	Total		Fatal		Nonfatal		Age of Person			
	Cnt	%	Cnt	%	Cnt	%	Unk	< 16	16-21	> 21
Assaulted by other	1	0.1	1	0.2	-	-	-	-	-	1
Caught in/compressed by other machinery	2	0.2	-	-	2	0.4	-	-	-	2
Caught in/crushed by materials	1	0.1	-	-	1	0.2	-	-	-	1
Collision/impact - auto, truck, bus, van, etc.	12	1.1	3	0.6	9	1.8	-	3	-	9
Committing vandalism/theft	1	0.1	-	-	1	0.2	-	-	1	-
Derailment	4	0.4	1	0.2	3	0.6	-	-	4	-
Electrical shock due to contact with 3rd rail, c	6	0.6	-	-	6	1.2	-	5	-	1
Electrical shock, other (explain in narrative)	2	0.2	-	-	2	0.4	-	-	-	2
Horseplay, practical joke, etc.	12	1.1	3	0.6	9	1.8	-	3	4	5
Lost balance	55	5.2	8	1.5	47	9.2	14	4	5	32
Missed handhold, grabiron, step, etc.	4	0.4	-	-	4	0.8	-	2	-	2
Other impacts - on track equipment	2	0.2	1	0.2	1	0.2	1	-	-	1
Pushed/shoved into/against	1	0.1	-	-	1	0.2	-	-	1	-
Ran into on-track equipment	7	0.7	3	0.6	4	0.8	-	-	-	7
Ran into object/equipment	2	0.2	-	-	2	0.4	1	-	-	1
Slack action, draft, compressive buff/coupling	3	0.3	-	-	3	0.6	-	-	-	3
Slipped,fell,stumbled,etc. due to irregular surf	8	0.8	-	-	8	1.6	3	-	-	5
Slipped, fell, stumbled, etc. due to climatic co	1	0.1	-	-	1	0.2	-	-	-	1
Slipped,fell,stumbled,etc. due to object,ballast	6	0.6	-	-	6	1.2	-	1	-	5
Struck by thrown or propelled object	1	0.1	-	-	1	0.2	-	1	-	-
Struck by object	3	0.3	3	0.6	-	-	1	-	-	2
Struck by on-track equipment	814	77.6	489	91.2	325	63.4	131	38	134	511
Struck by falling object	2	0.2	-	-	2	0.4	-	-	-	2
Struck against object	4	0.4	2	0.4	2	0.4	-	-	-	4
Sudden/unexpected movement of material	1	0.1	-	-	1	0.2	-	-	-	1
Sudden/unexpected movement of on-track equipmen	12	1.1	-	-	12	2.3	1	3	1	7
Sudden/unexpected movement of vehicle	2	0.2	-	-	2	0.4	-	1	-	1
Thrill seeking	28	2.7	8	1.5	20	3.9	2	7	7	12
Caught, crushed, pinched, other	11	1.0	3	0.6	8	1.6	-	1	4	6
On track equipment, other incidents	2	0.2	-	-	2	0.4	-	-	2	-
Slipped, fell, stumbled, other	9	0.9	2	0.4	7	1.4	-	2	2	5
Sudden, unexpected movement, other	1	0.1	1	0.2	-	-	-	-	-	1
Other (describe in narrative)	29	2.8	8	1.5	21	4.1	10	1	3	15
ALL	1049	100	536	100	513	100	164	72	168	645

APPENDIX A

ABBREVIATIONS

%	Percent of total
AADT	Average annual daily traffic
Acc	Accident, events reported on form 6180-54 (Chapter 6)
Avg	Average
Chg	Change
Cls	Class
Cnt	Count
Coll	Collision between ontrack equipment
Comm	Commuter
Der	Derailment
EOD	Railroad employee on duty
Eqp	Equipment
Exp	Exposure
Ftl	Fatality
HRC	Highway-rail crossing
HWTS	Highway traffic signals
Hmn	Human factor
Incs	Incidents
Len	Length
Loco	Locomotive
Mtr V	Motor vehicle
Nonf	Nonfatal cases (injuries and occupational illnesses)
Othr	Other
Psgr	Passenger on train
RR	Railroad
Rng	Range
Sig	Signal
Spd	Speed
Term	Terminated
Trans	Transferred
Tres	Trespasser
Trk	Track
Trn	Train
Unk	Unknown
Veh	Vehicle
WW	Wiwags
w/o	Without

APPENDIX B

ACCIDENT PREDICTION AND RESOURCE ALLOCATION PROCEDURE NORMALIZING CONSTANTS

The U.S. DOT Highway-Rail Crossing Resource Allocation Procedure, as described in the *Rail-Highway Crossing Resource Allocation Procedure User's Guide, Third Edition,* August 1987, DOT/FRA/OS-87/10, uses three "normalizing constants" in the accident prediction formula, Formula A, Section 3.2.4, Page 17. These constants need to be adjusted periodically in order to keep the procedure matched with the current accident trends. The last recalculation and adjustment was made for Calendar Year 1992 and published in Bulletins No. 14 through 19.

The process of determining the three (3) new "normalizing constants" for 1998 is performed such that the 1997 accident prediction sum of the top 20 percent of the crossings is made to equal the sum of the *observed* number of accidents that occurred for those same 20 percent of crossings using the accident data for Calendar Years 1992 to 1996 (to predict 1997). The *observed* accidents are those accident records that are in the data file. Because of inaccurate reporting which results in some mismatched data records, the number of *observed* accidents normally will not be equal to the actual number of accidents which have occurred and as reported in the yearly Bulletin. This process is performed for each of the respective three formulae for the three types of warning device groups, (1) passive, (2) flashing lights, and (3) gates. This process normalizes the calculated prediction for the current trend in accident data (downward) and relative to each of the three types of warning devices.

These constants were redetermined for the "national" model using the crossings in the National Inventory File as of December 1997. Those using the "DOT Model" should update their models by replacing the old constants with the new recalculated values. These "normalizing constants" are located in the computer program ACPD.NEW as shown in the *User's Guide Third Edition* at the top of Page A-4, Appendix A1 and in RESAL.NEW on Page B-3, Appendix B1.

As of August 1998, these new constants will be in the computer program used to fulfill requests for accident prediction and resource allocation listings, as well as in the new 1998 PCAPS Computer Program containing 1997 data. The table below lists the new and prior constants.

ACCIDENT PREDICTION AND RESOURCE ALLOCATION PROCEDURE NORMALIZING CONSTANTS

WARNING DEVICE GROUPS	NEW	PRIOR YEARS			
	1998	1992	1990	1988	1986
(1) Passive	**.7159**	.8239	.9417	.8778	.8644
(2) Flashing Lights	**.5292**	.6935	.8345	.8013	.8887
(3) Gates	**.4921**	.6714	.8901	.8911	.8131