

Section E

Railroad

Table 2-35 Railroad and Grade-Crossing Fatalities by Victim Class

	1980	1985	1990	1995	1996	1997	1998	1999
Passengers on trains	4	3	3	0	12	6	4	14
Railroad only	4	3	3	0	12	6	2	3
Grade crossing only	0	0	0	0	0	0	2	11
Employees on duty	97	46	40	34	33	37	27	31
Railroad only	97	44	35	32	32	37	23	29
Grade crossing only	0	2	5	2	1	0	4	2
Employees not on duty	4	2	0	2	0	0	2	0
Railroad only	3	2	0	2	0	0	2	0
Grade crossing only	1	0	0	0	0	0	0	0
Contractor employees	a	a	a	7	9	11	5	12
Railroad only	a	a	a	7	9	11	5	11
Grade crossing only	a	a	a	0	0	0	0	1
Nontrespassers^b	746	511	554	443	365	363	326	302
Railroad only	81	14	18	32	27	15	9	8
Grade crossing only	665	497	536	411	338	348	317	294
Trespassers	566	474	700	660	620	646	644	572
Railroad only	460	391	543	494	471	533	536	479
Grade crossing only	106	83	157	166	149	113	108	93
Volunteer employees	N	N	N	N	N	0	0	0
Railroad only	N	N	N	N	N	0	0	0
Grade crossing only	N	N	N	N	N	0	0	0
Railroad only	645	454	599	567	551	602	577	530
Grade crossing only	772	582	698	579	488	461	431	402
Motor vehicles	N	521	614	508	415	419	369	345
Nonmotor vehicles	N	61	84	71	73	42	62	57
Total	1,417	1,036	1,297	1,146	1,039	1,063	1,008	932

^a Prior to 1995, contractor employees were included with nontrespassers. They include 7 in 1980, 4 in 1985, and 3 in 1990.

^b Beginning in 1997, nontrespassers off railroad property are also included.

NOTES: "Railroad only" includes fatalities from train accidents, train incidents, and nontrain incidents (excludes highway-rail grade crossings). This table includes information for both freight and passenger railroad operations.

SOURCES: 1980-90: U.S.

Department of Transportation, Federal Railroad Administration, *Highway-Rail Crossing Accident/ Incident and Inventory Bulletin* (Washington, DC: Annual issues), and the *Accident/Incident Bulletin* (Washington DC: Annual issues).

1995-99: Ibid., Internet site

<http://safetydata.fra.dot.gov/objects/bull99.pdf> as of Nov. 28, 2000.

KEY: N = data do not exist

Table 2-36 Railroad and Grade-Crossing Injured Persons by Victim Class

	1980	1985	1990	1995	1996	1997	1998	1999
Passengers on trains	593	657	473	573	513	601	535	481
Railroad only	569	646	462	543	489	558	516	438
Grade crossing only	24	11	11	30	24	43	19	43
Employees on duty	56,331	29,822	20,970	10,777	9,199	8,295	8,398	8,622
Railroad only	56,201	29,667	20,801	10,654	9,120	8,184	8,276	8,482
Grade crossing only	130	155	169	123	79	111	122	140
Employees not on duty	671	419	326	252	228	263	219	216
Railroad only	671	418	324	248	226	260	216	215
Grade crossing only	0	1	2	4	2	3	3	1
Contractor employees	b	b	b	269	208	334	380	384
Railroad only	b	b	b	268	208	333	379	384
Grade crossing only	b	b	b	1	0	1	1	0
Nontrespassers^a	3,923	2,672	2,581	1,869	1,660	1,540	1,236	1,342
Railroad only	775	394	589	372	431	370	243	335
Grade crossing only	3,148	2,278	1,992	1,497	1,229	1,170	993	1,007
Trespassers	728	734	793	700	750	728	677	650
Railroad only	480	492	560	461	474	516	513	445
Grade crossing only	248	242	233	239	276	212	164	205
Volunteer employees	N	N	N	N	N	6	14	5
Railroad only	N	N	N	N	N	6	13	5
Grade crossing only	N	N	N	N	N	0	1	0
Railroad only	58,696	31,617	22,736	12,546	10,948	10,227	10,156	10,509
Grade crossing only	3,550	2,687	2,407	1,894	1,610	1,540	1,303	1,396
Motor vehicles	N	2,561	2,332	1,825	1,545	1,494	1,257	1,338
Nonmotor vehicles	N	126	75	69	65	46	46	58
Total	62,246	34,304	25,143	14,440	12,558	11,767	11,459	11,905

^a Beginning in 1997, nontrespassers off railroad property are also included.

^b Prior to 1995, contractor employees were included with nontrespassers: they include 74 in 1980, 110 in 1985, and 242 in 1990.

NOTES: "Railroad only" includes fatalities from train accidents, train incidents, and nontrain incidents (excludes highway-rail grade crossings). This table includes information for both freight and passenger railroad operations.

SOURCES: 1980-90: U.S.

Department of Transportation, Federal Railroad Administration, *Highway-Rail Crossing Accident/Incident and Inventory Bulletin* (Washington, DC: Annual issues), and *Accident/Incident Bulletin* (Washington, DC: Annual Issues).

1995-99: Ibid., Internet site

<http://safetydata.fra.dot.gov/objects/bull99.pdf>, as of Nov. 28, 2000.

KEY: N = data do not exist

Table 2-37

Train Fatalities, Injuries, and Accidents by Type of Accident^a

	1980	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Fatalities												
Derailments	8	2	2	10	2	53	2	2	6	2	1	U
Collisions	20	6	8	5	1	14	8	7	16	9	1	U
Other	1	0	0	4	3	0	2	5	3	6	2	U
Total	29	8	10	19	6	67	12	14	25	17	4	9
Injuries												
Derailments	286	197	272	174	71	179	120	90	98	111	61	U
Collisions	341	223	139	103	59	87	118	151	146	51	32	U
Other	38	56	40	49	41	42	24	53	37	21	36	U
Total	665	476	451	326	171	308	262	294	281	183	129	130
Accidents												
Derailments	6,442	2,495	2,146	1,936	1,734	1,930	1,825	1,742	1,816	1,741	1,757	1,961
Collisions	1,201	366	315	261	207	205	240	235	205	202	168	205
Other	562	414	418	461	418	476	439	482	422	454	650	602
Total	8,205	3,275	2,879	2,658	2,359	2,611	2,504	2,459	2,443	2,397	2,575	2,768

^a Excludes highway-rail grade crossing accidents.

NOTE: Train accidents only. This table includes information for both freight and passenger railroad operations.

SOURCES: 1980-96: U.S. Department of Transportation, Federal Railroad Administration, *Highway-Rail Crossing Accident/Incident and Inventory Bulletin* (Washington, DC: Annual issues), tables 1-1, 1-3.

1997-98: Ibid., *Railroad Safety Statistics Annual Report 1998* (Washington, DC: September 1998), table 1-1, 1-3, 5-6.

1999: Ibid., Internet site

<http://safetydata.fra.dot.gov/OfficeofSafety/Prelim/1999/r01.htm>, as of July 10, 2000.

KEY: U = data are unavailable

Table 2-38 Railroad Passenger Safety Data

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Passenger fatalities	3	8	3	58	5	0	12	6	4	14
Injured persons	473	382	411	559	497	573	513	601	535	481
Train-miles, passenger trains (millions)	72	74	74	75	75	76	^R 77	78	78	U
Fatalities per 100 million passenger train-miles	4	11	4	77	7	0	^R 16	8	5	U
Injuries per 100 million passenger train-miles	660	520	560	750	660	750	^R 663	770	683	U

KEY: R = revised; U = data are not available

NOTE: A train-mile is the movement of a train (which can consist of many cars) the distance of 1 mile. A train-mile differs from a vehicle-mile, which is the movement of 1 car (vehicle) the distance of 1 mile. A 10-car (vehicle) train traveling 1 mile would be measured as 1 train-mile and 10 vehicle-miles. Caution should be used when comparing train-miles to vehicle miles.

SOURCES:

Fatalities and Injuries: 1990-96: U.S. Department of Transportation, Federal Railroad Administration, Office of Policy and Program Development, *Accident/Incident Bulletin* (Washington, DC: Annual issues), tables 5, 14, 15, and 36.

1997-98: Ibid., *Railroad Safety Statistics Annual Report 1998* (Washington, DC: September 1999), table 1-1.

Train-miles, passenger trains: 1990-96: U.S. Department of Transportation, Bureau of Transportation Statistics calculations (sum of all commuter rail train-miles reported to USDOT, Federal Transit Administration, plus Amtrak train-miles).

1997-98: U.S. Department of Transportation, Federal Railroad Administration, Office of Policy and Program Development, *Railroad Safety Statistics Annual Report 1998* (Washington, DC: September 1999), table 2-4.

Table 2-39

Railroad System Safety and Property Damage Data (Excludes highway-rail grade-crossing accidents)

	1970	1975	1980	1985	1990	1995	1996	1997	1998	1999
Fatalities	785	575	584	454	599	567	551	602	577	530
Injured Persons	^d 17,934	50,138	58,696	31,617	22,736	12,546	10,948	10,227	10,156	10,304
Accidents^a	8,095	8,041	8,205	3,275	2,879	2,459	2,443	2,397	2,575	2,768
Train-miles (millions)^{b,c}	839	755	718	571	609	670	671	677	683	712
Rates per 100 million train-miles										
Fatalities	94	76	81	80	98	85	82	89	84	74
Injuries	N	6,640	8,180	5,540	3,740	1,870	1,630	1,511	1,487	1,446
Accidents	970	1,070	1,140	570	470	370	360	354	377	389
Property damage (current \$ millions)	121.6	177.4	267.4	179.3	198.7	189.2	212.3	210.4	^R 233.1	242.3

^a Train accidents only; excludes highway-rail grade-crossing accidents.

^b Train-miles in this table differ from train-miles in the vehicle-miles table in Chapter 1. Train-miles reported in Chapter 1 include only Class I rail (see glossary for definition), while this table includes Class I rail, Group II rail, and other rail. For example, in 1999 Group II rail accounted for 75 million train-miles, and other rail for 25 million train-miles. Moreover, the vehicle-miles table in Chapter 1 includes only train-miles between terminals and/or stations, thus excluding yard and switching miles. In 1999, Class I yard/switching train-miles totaled 70 million train-miles. Note that commuter rail safety data are reported in the rail mode and the transit mode. Commuter rail train-miles are included in Class I rail and Group II rail in this table.

^c A train-mile is the movement of a train (which can consist of many cars) the distance of 1 mile. A train-mile differs from a vehicle-mile, which is the movement of 1 car (vehicle) the distance of 1 mile. A 10-car (vehicle) train traveling 1 mile would be measured as 1 train-mile and 10 vehicle-miles. Caution should be used when comparing train-miles to vehicle-miles.

^d 1970 injuries not comparable to later years due to change in reporting system.

NOTE: This table includes information for both freight and passenger railroad operations.

SOURCES:

KEY: N = data do not exist; R = revised

Fatalities, injuries, accidents, and property damage:

1970-96: U.S. Department of Transportation, Federal Railroad Administration, Office of Policy and Program Development, *Accident/Incident Bulletin* (Washington, DC: Annual issues), tables 14 and 15.

1997-98: Ibid., *Railroad Safety Statistics Annual Report 1998* (Washington, DC: July 1999).

1999: Ibid., Internet site <http://safetydata.fra.dot.gov/objects/bull99.pdf>, as of Nov. 28, 2000.

Train-miles:

1970-90: U.S. Department of Transportation, Federal Transit Administration, *National Transit Database* (Washington, DC: Annual issues), form 406.

1990-99: U.S. Department of Transportation, Federal Railroad Administration, Internet site <http://safetydata.fra.dot.gov/OfficeofSafety/Prelim/1999/r02.htm>, as of July 10, 2000.

Table 2-40 Fatalities and Injuries of On-Duty Railroad Employees

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Employee fatalities										
Accidents/incidents, total	40	35	34	47	31	34	33	37	27	31
Grade-crossing accidents and incidents	5	1	2	3	1	2	1	0	4	2
Train accidents and incidents only (grade-crossing excluded)	20	22	23	32	25	27	24	U	U	U
Employees injured										
Accidents/incidents, total	20,970	19,626	17,755	15,363	13,080	10,777	9,199	8,295	8,398	8,622
Grade-crossing accidents and incidents	169	147	157	143	126	123	79	111	122	140
Train accidents and incidents only (grade-crossing excluded)	3,282	3,003	2,274	1,832	1,703	1,500	1,303	U	U	U
Employee hours (millions)	N	530.7	517.0	519.7	518.6	510.3	504.6	^R503.9	514.9	510.0
Fatality rates per million employee hours										
All accidents/incidents	N	0.07	0.07	0.09	0.06	0.07	0.07	0.07	0.05	0.06
Grade-crossing accidents and incidents	N	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.00	0.01	<0.01
Train accidents and incidents only (grade-crossing excluded)	N	0.04	0.04	0.06	0.05	0.05	0.05	U	U	U
Injury rates per million employee hours										
All accidents/incidents	N	37.0	34.3	29.6	25.2	21.1	18.2	16.5	16.3	16.9
Grade-crossing accidents and incidents	N	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3
Train accidents and incidents only (grade-crossing excluded)	N	5.7	4.4	3.5	3.3	2.9	2.6	U	U	U
Train-miles (millions)^a	609	577	594	614	655	670	671	677	683	712
Fatality rates per million train-miles										
All accidents/incidents	0.07	0.06	0.06	0.08	0.05	0.05	0.05	0.05	0.04	0.04
Grade-crossing accidents and incidents	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	0.01	<0.01
Train accidents and incidents only (grade-crossing excluded)	0.03	0.04	0.04	0.05	0.04	0.04	0.04	U	U	U
Injury rates per million train-miles										
All accidents/incidents	34.4	34.0	29.9	25.0	20.0	16.1	13.7	12.3	12.3	12.1
Grade-crossing accidents and incidents	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.2	0.2
Train accidents and incidents only (grade-crossing excluded)	5.4	5.2	3.8	3.0	2.6	2.2	1.9	U	U	U

KEY: N = data do not exist; U = data are unavailable; R = revised

Continued next page

Table 2-40
Cont'd

Fatalities and Injuries of On-Duty Railroad Employees

^a Train-miles in this table differ from train-miles in the vehicle-miles table in Chapter 1. Train-miles reported in Chapter 1 include only Class I rail (see glossary for definition), while this table includes Class I rail, Group II rail, and other rail. In 1999, Group II rail accounted for 75 million train-miles, and other rail for 25 million train-miles. Moreover, the vehicle-miles table in Chapter 1 includes only train-miles between terminals and/or stations, thus excluding yard and switching miles. In 1999, Class I yard/switching train miles totaled 70 million train-miles. Note that commuter rail safety data are reported in the rail mode and in the transit mode. Commuter rail train-miles are included in Class I rail and Group II rail in this table.

^b A train-mile is the movement of a train (which can consist of many cars) the distance of 1 mile. A train-mile differs from a vehicle-mile, which is the movement of 1 car (vehicle) the distance of 1 mile. A 10-car (vehicle) train traveling 1 mile would be measured as 1 train-mile and 10 vehicle-miles. Caution should be used when comparing train-miles to vehicle miles.

NOTE: This table includes information for both freight and passenger railroad operations.

SOURCES: 1990-96: U.S. Department of Transportation, Federal Railroad Administration, *Highway-Rail Crossing Accident/ Incident and Inventory Bulletin* (Washington, DC: Annual issues).

1997: Ibid., *Railroad Safety Statistics Annual Report 1997* (Washington, DC: September 1998), table 1-1, 1-3.

1998-99: Ibid., Internet site
<http://safetydata.fra.dot.gov/OfficeofSafety/Prelim/1999/r01.htm>, r02.htm, and r03.htm, as of June 23, 2000.

1999: U.S. Department of Transportation, Federal Railroad Administration, Office of Safety Analysis, personal communications, July 20, 2000.