

*Thomas P. Wolf*



U.S. Department  
of Transportation  
**Federal Railroad  
Administration**

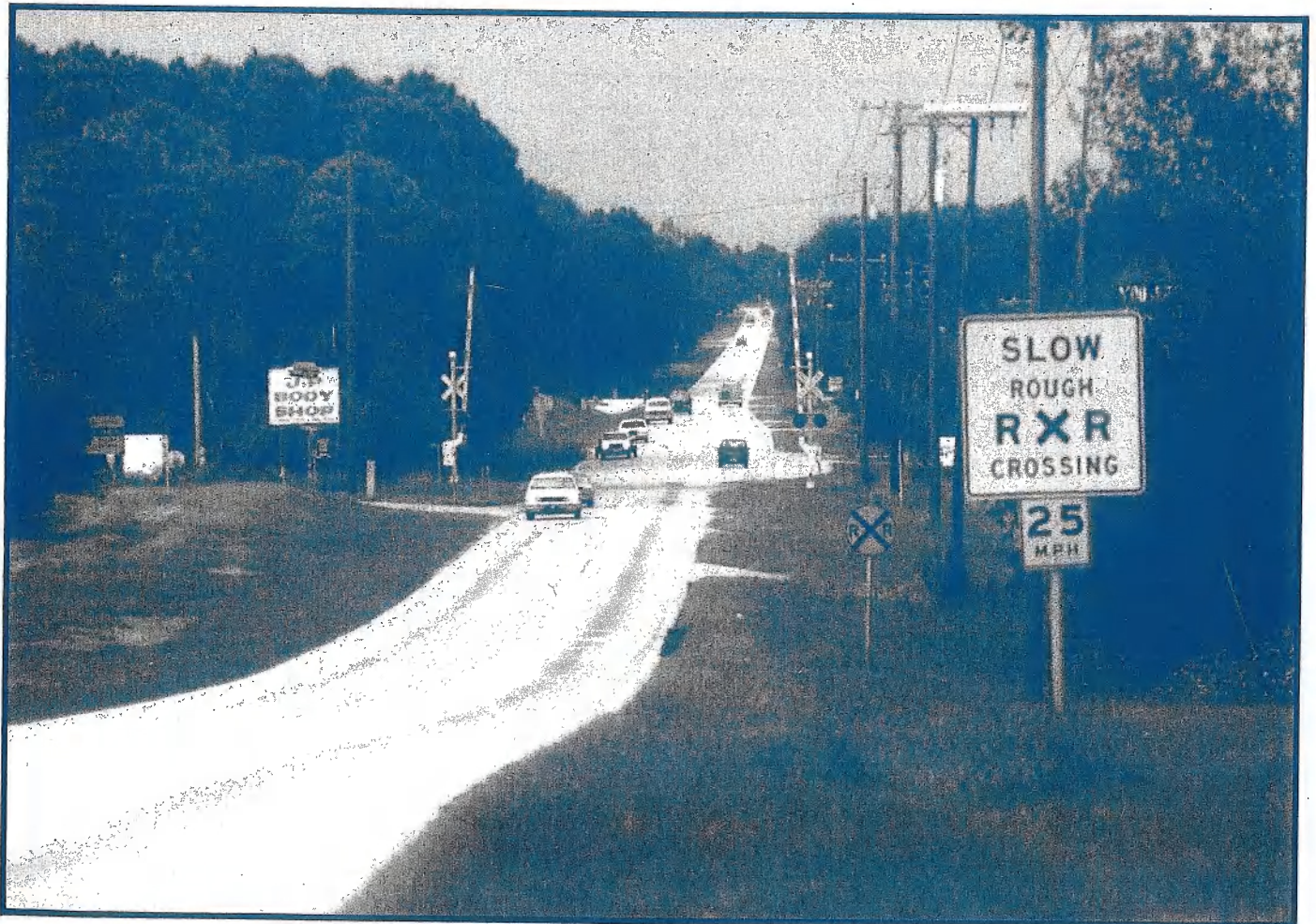
Office of Safety

# **HIGHWAY-RAIL CROSSING ACCIDENT/INCIDENT AND INVENTORY BULLETIN**

## **No. 16**

**July 1994**

## **Calendar Year 1993**



## **NOTICE**

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400 Seventh Street, S.W.  
Washington, D.C. 20590**

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## LIST OF ABBREVIATIONS

ACC/INC	-	Accident/Incident
A/I	-	Accident/Incident
CONT	-	Contractor Employee
ENOD	-	Employee Not On Duty
EOD	-	Employee On Duty
FA	-	Federal Aid
HWY	-	Highway
INJ	-	Injury or Casualty
K	-	Thousands
KLD	-	Killed
LOCO(S)	-	Locomotive
MUTCD	-	Manual on Uniform Traffic Control Devices
MV	-	Motor Vehicle
NONT	-	Non-Trespasser
PSGR	-	Passenger
SIG	-	Signal
TRES	-	Trespasser
VEH REG	-	Vehicles Registered





## INTRODUCTION

The sixteenth annual report, issued by the Federal Railroad Administration (FRA) Office of Safety, combines highway-rail crossing accident/incident statistics with the National highway-rail crossing inventory. Accident/incident data is compiled from monthly reports filed by railroads. The National highway-rail crossing inventory contains sight-survey data about individual crossings and is provided voluntarily by states and railroads.

The Federal Railroad Safety Act of 1970 (P.L. 91-458) and the Accident Reports Act (45 U.S.C. 38-34) require railroads to file accident/incident reports with the FRA. The National highway-rail crossing inventory was developed in response to the Federal Railroad Safety Act of 1970 and the Federal Highway Safety Acts of 1970 and 1973, which require the Secretary of Transportation to work towards improving safety at highway-rail crossings.

\* \* \* \* \*

This format of this year's bulletin has been slightly modified and graphical presentations occur before numerical tabulation. Tables and figures retain the number identification used in prior years. Information on accidents/incidents and crossings is presented in the following sequence:

Historical data on highway-rail crossing accidents/incidents at public crossings.

Summary of 1993 accidents/incidents that occurred at public crossing sites.

Physical and operational statistics for all public at-grade highway-rail crossings as described in the inventory on July 8, 1994.

Summary of 1993 accidents/incidents occurring at private highway-rail crossings and tabulations of private crossings in the inventory.

The tables and figures in Sections 1, 2, 3, 4, and Appendix C furnish data on public highway-rail crossings; although tables 33 and 34 in Section 4 include counts of the number of private crossings. The majority of the accident tables and charts shown in this bulletin provide information on motor vehicle accidents. Those tables and figures that do not refer to motor vehicle in their title contain data for all accidents/incidents.

**1992/3 ACCIDENT PREDICTION AND  
RESOURCE ALLOCATION PROCEDURE CONSTANTS**

The U.S. DOT Highway-Rail Crossing Resource Allocation Procedure, described in the Rail-Highway Crossing Resource Allocation Procedure User's Guide, Third Edition, DOT/FRA/OS-87/10, August 1987, uses three "normalizing constants" in the accident prediction formulas, Formula A, Section 3.2.4, Page 17. These constants have been adjusted periodically in order to keep the formulas matched with current accident trends. The last readjustment was made for Calendar Year 1992 and was published in Bulletin No. 14.

The process of determining the three (3) new normalizing constants for 1992 was performed so that the sum of the December 1991, predictions using only accident history data for Calendar Years 1986 to 1990 for the top 20 percent of each of the three classes of crossings (gates, flashing lights, passive) for the respective three formulas is made equal to the actual number of accidents that occurred for those same crossings in 1991. This process was performed for each of the three warning device groups, (1) passive, (2) flashing lights, and (3) gates.

These constants were redetermined for the "national" model using the crossings in the inventory as of December 31, 1991. Organizations using the "DOT Model" should update their models by replacing the old constants with the recalculated constants. The constants referenced here are located in the computer program ACPD.NEW as shown in the coding at the top of page A-4, Appendix A1 of the User's Guide Third Edition and in RESAL.NEW on page B-3, Appendix B1.

These constants will be used in fulfilling requests for accident prediction and resource allocation procedure listings. The table below lists the current and prior constants.

**ACCIDENT PREDICTION AND RESOURCE ALLOCATION  
PROCEDURE NORMALIZING CONSTANTS**

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

The Resource Allocation Procedure is currently being reviewed and, if merited, may be revised. (This project is one of 55 actions identified within the Department of Transportation's recently released Highway-Rail Crossing Safety Action Plan.) As such, recalculation of the "normalizing constants" for the existing accident prediction formulas has been deferred until this review is complete. Users of the "DOT Model" should continue to use the 1992 constants detailed above.

**TABLE-S. SUMMARY OF HIGHWAY-RAIL CROSSING ACCIDENT STATISTICS FOR THE NATION**

	TOTAL			MOTOR VEHICLES			NON-MOTOR VEHICLES		
	ACCI	FATAL	INJ	ACCI	FATAL	INJ	ACCI	FATAL	INJ
<b>1988</b>									
PUBLIC	6,025	652	2,417	5,820	594	2,344	205	58	73
PRIVATE	590	37	172	555	34	163	35	3	9
TOTAL	6,615	689	2,589	6,375	628	2,507	240	61	82
<b>1989</b>									
PUBLIC	5,979	757	2,683	5,772	682	2,615	207	75	68
PRIVATE	546	44	185	524	43	176	22	1	9
TOTAL	6,525	801	2,868	6,296	725	2,791	229	76	77
<b>1990</b>									
PUBLIC	5,233	648	2,254	5,022	568	2,186	211	80	68
PRIVATE	480	50	153	458	46	146	22	4	7
TOTAL	5,713	698	2,407	5,480	614	2,332	233	84	75
<b>1991</b>									
PUBLIC	4,861	565	1,923	4,677	497	1,866	184	68	57
PRIVATE	525	43	171	495	38	163	30	5	8
TOTAL	5,386	608	2,094	5,172	535	2,029	214	73	65
<b>1992</b>									
PUBLIC	4,465	536	1,830	4,269	466	1,752	196	70	78
PRIVATE	445	43	145	415	40	139	30	3	6
TOTAL	4,910	579	1,975	4,684	506	1,891	226	73	84
<b>1993</b>									
PUBLIC	4,437	584	1,744	4,240	517	1,677	197	67	67
PRIVATE	455	42	93	421	37	83	34	5	10
TOTAL	4,892	626	1,837	4,661	554	1,760	231	72	77

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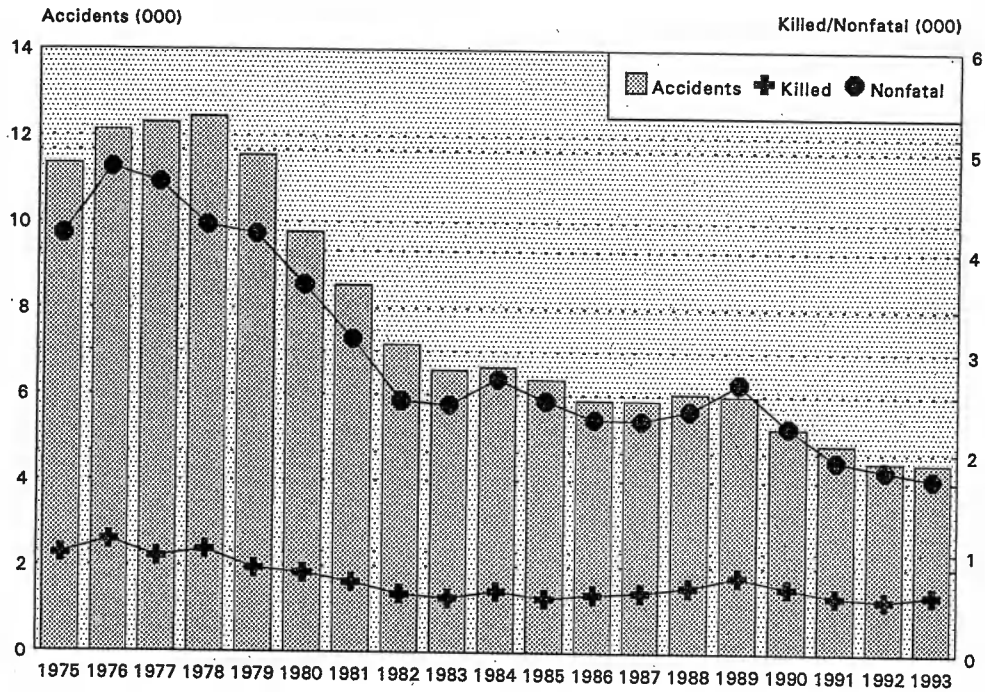
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**HISTORICAL ACCIDENT TRENDS**  
**FOR**  
**PUBLIC CROSSINGS ONLY**

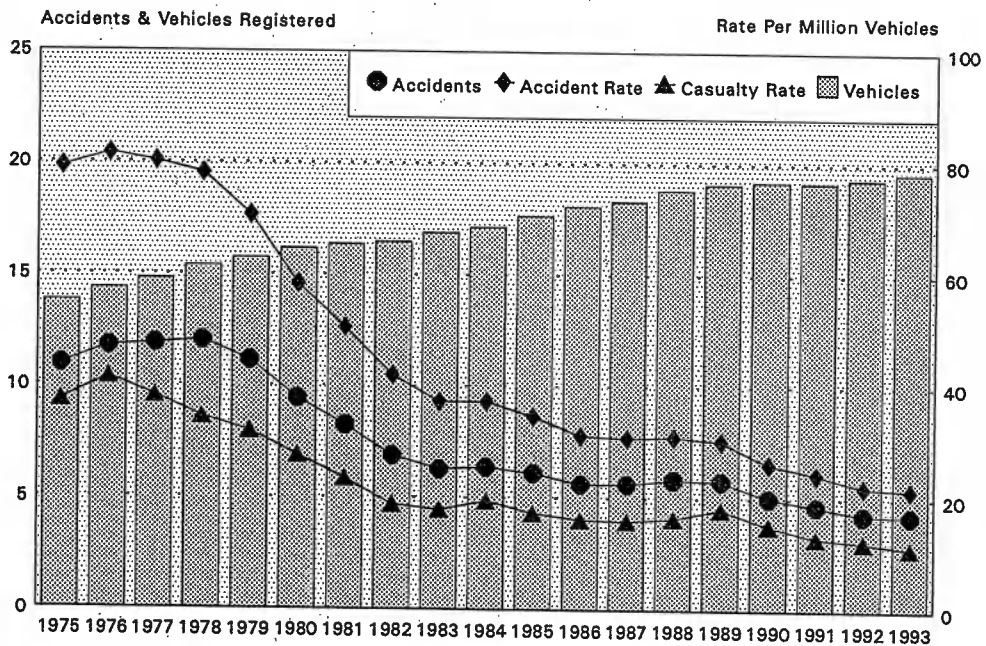


**FIGURE 1. SUMMARY OF ACCIDENTS/INCIDENTS AND CASUALTIES AT PUBLIC HIGHWAY-RAIL CROSSINGS**



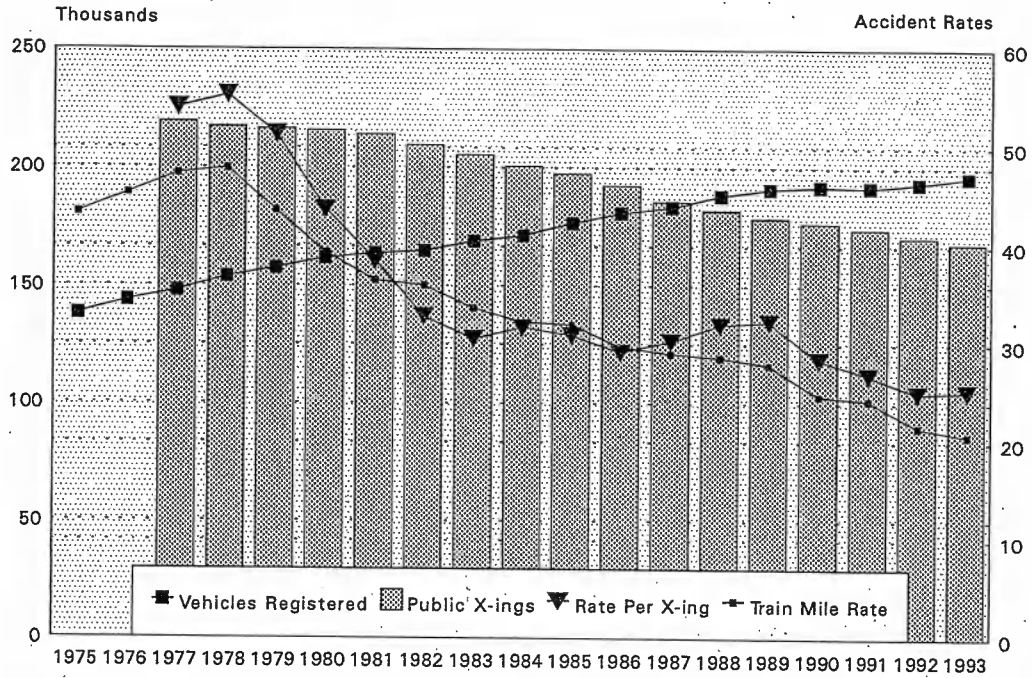
For accidents use scale on left axis, casualties use scale on right axis.

**FIGURE 2. SUMMARY OF MOTOR VEHICLE ACCIDENTS/INCIDENTS AND RATES AT PUBLIC HIGHWAY-RAIL CROSSINGS**



The number of accidents are shown in thousands using left axis.  
 The number of registered vehicles are shown in ten thousands using left axis.  
 Accident and casualty rates use right axis.

**FIGURE 2A. SUMMARY OF MOTOR VEHICLE ACCIDENTS/INCIDENTS AT PUBLIC HIGHWAY-RAIL CROSSINGS AND NUMBER OF CROSSINGS**



**PUBLIC AT GRADE CROSSINGS**

Accident rates are shown in terms of the frequency per 1,000 public at grade crossings, and the frequency per 3,000,000 train miles operated.

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**HISTORICAL ACCIDENT TRENDS**

**FOR**

**PUBLIC CROSSINGS ONLY**

**TABLE 1. SUMMARY OF ACCIDENTS/INCIDENTS AND CASUALTIES  
AT HIGHWAY-RAIL PUBLIC CROSSINGS**

YEAR	NUMBER OF ACCIDENTS	.....TOTAL.....			CASUALTIES PER ACCIDENT
		KILLED	INJURED	CASUALTIES	
1988	6,025	652	2,417	3,069	0.51
1989	5,979	757	2,683	3,440	0.58
1990	5,233	648	2,254	2,902	0.55
1991	4,861	565	1,923	2,488	0.51
1992	4,465	536	1,830	2,366	0.52
1993	4,437	584	1,744	2,328	0.52

**TABLE 2. SUMMARY OF ACCIDENTS/INCIDENTS AND ACCIDENT RATES AT  
HIGHWAY-RAIL PUBLIC CROSSINGS INVOLVING MOTOR VEHICLES**

YEAR	ACCIDENTS	MOTOR VEHICLES REGISTERED (000) <sup>1</sup>	ACCIDENTS PER MILLION VEHICLES
1989	5,772	190,940	30.23
1990	5,022	192,123	26.14
1991	4,677	191,743	24.39
1992	4,269	193,430	22.07
1993	4,240	196,067 <sup>2</sup>	21.63

<sup>1</sup>Figures supplied by the Federal Highway Administration

<sup>2</sup>1993 MOTOR VEHICLE NUMBERS ARE PRELIMINARY.  
Registration figures for Hawaii are omitted because it does not have any reporting railroads.



( G R A P H S )

**CURRENT YEAR ACCIDENTS**

**AT**

**PUBLIC CROSSINGS ONLY**

FIGURE 3A. ACCIDENTS BY HIGHWAY USER

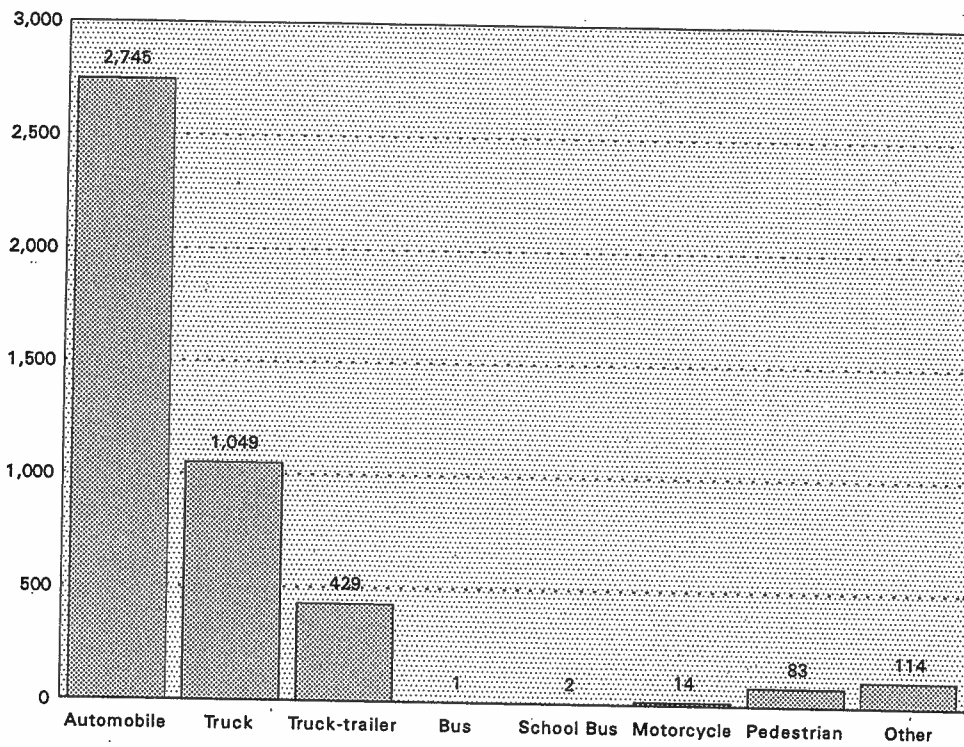
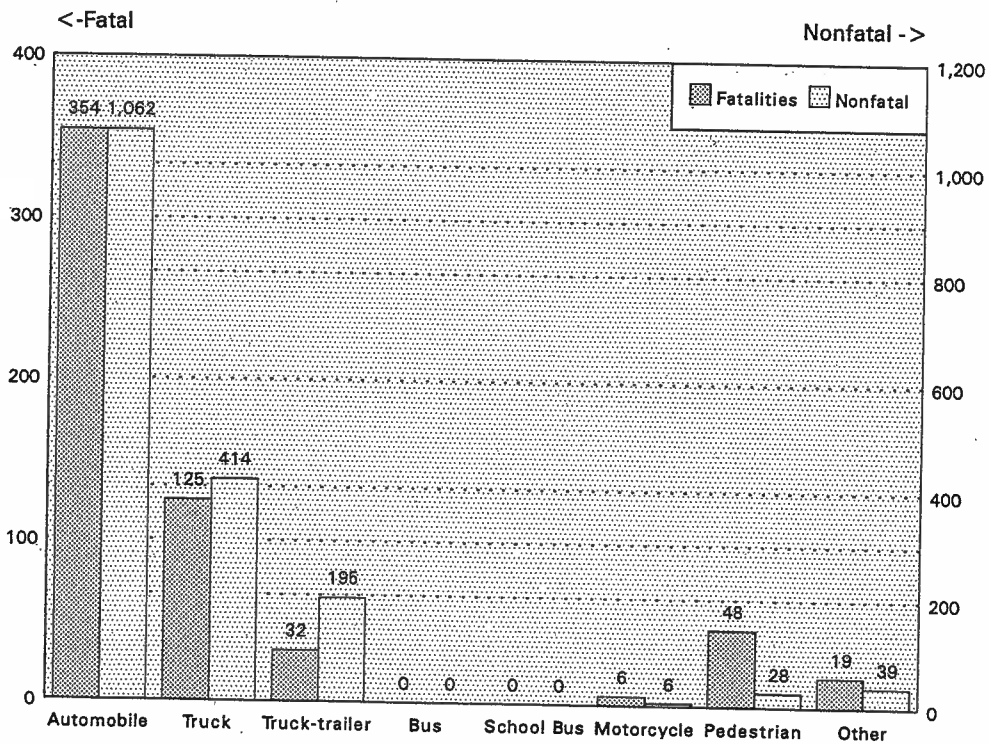
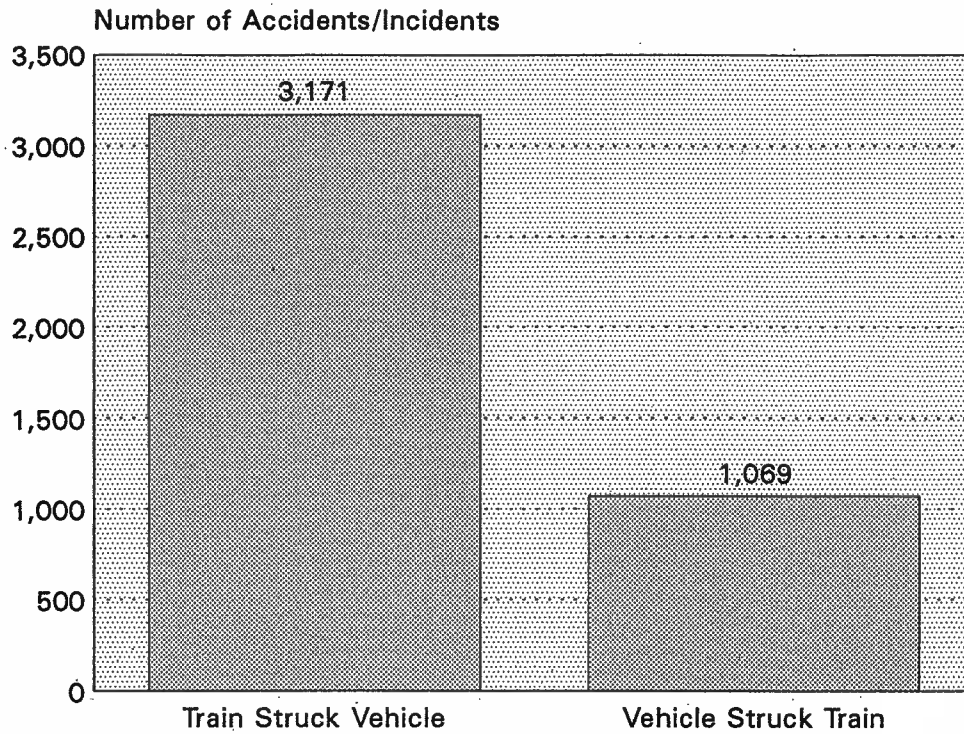


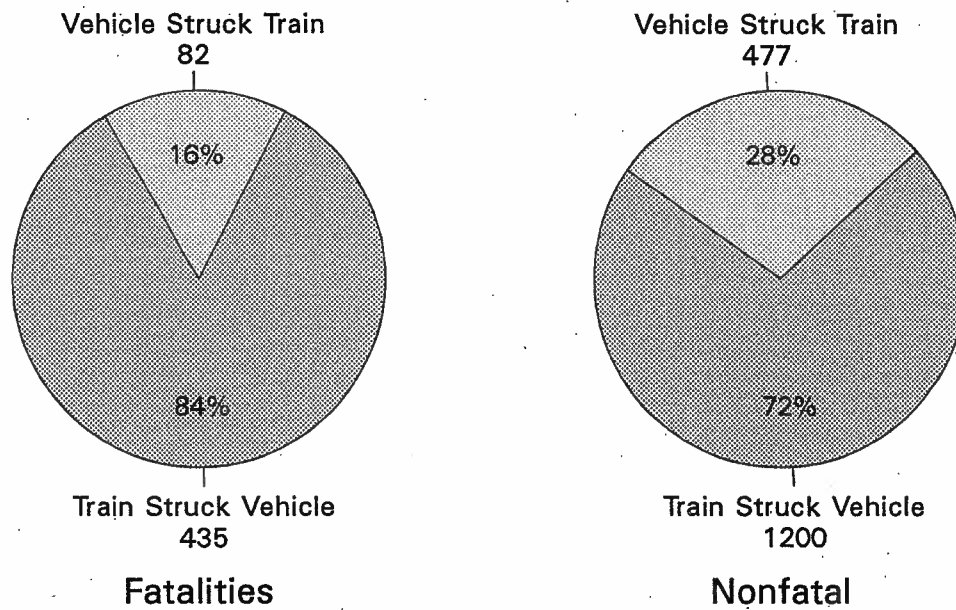
FIGURE 3B. CASUALTIES BY HIGHWAY USER



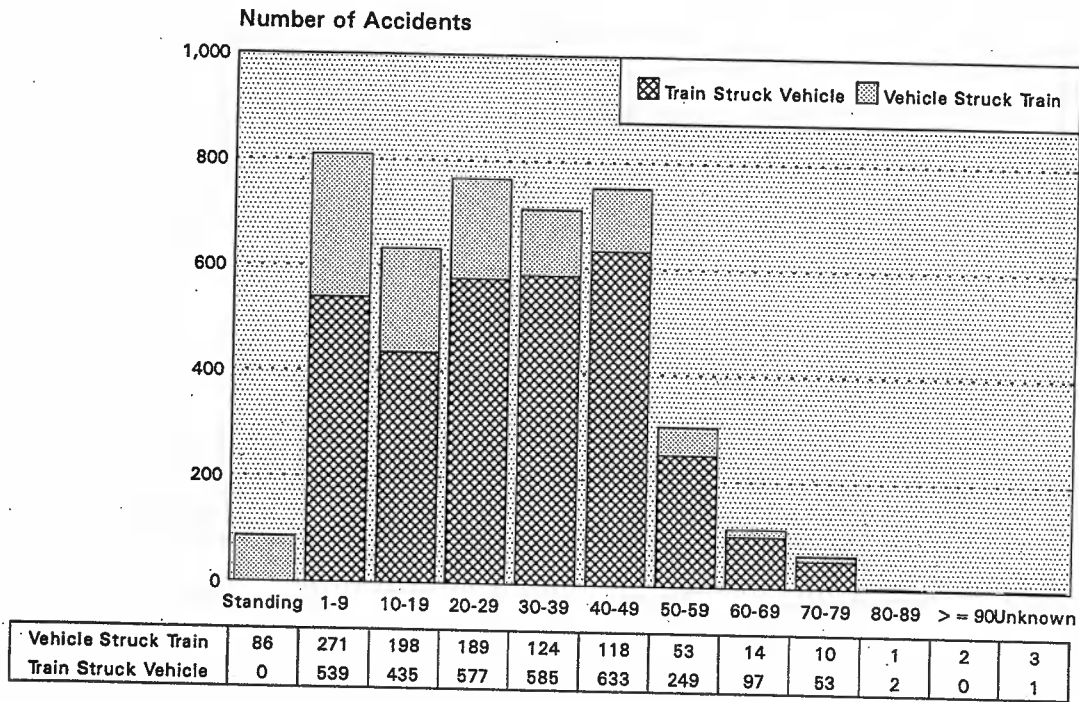
# FIGURE 4A. MOTOR VEHICLE ACCIDENTS/INCIDENTS



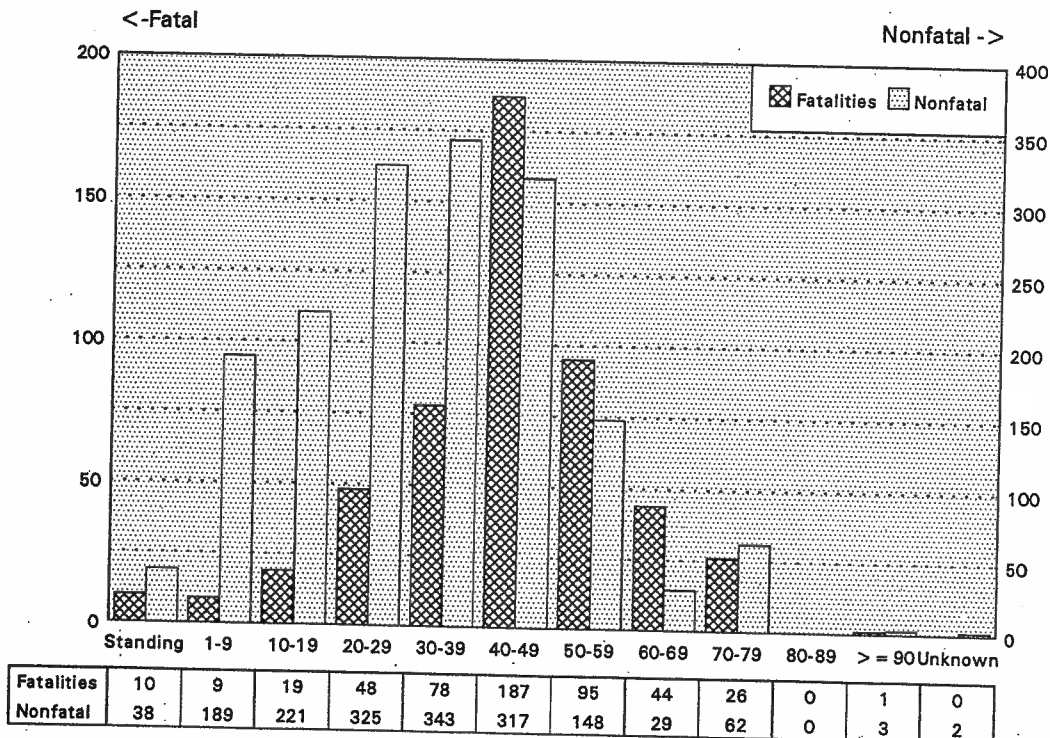
# FIGURE 4B. CASUALTIES IN MOTOR VEHICLE ACCIDENT/INCIDENTS



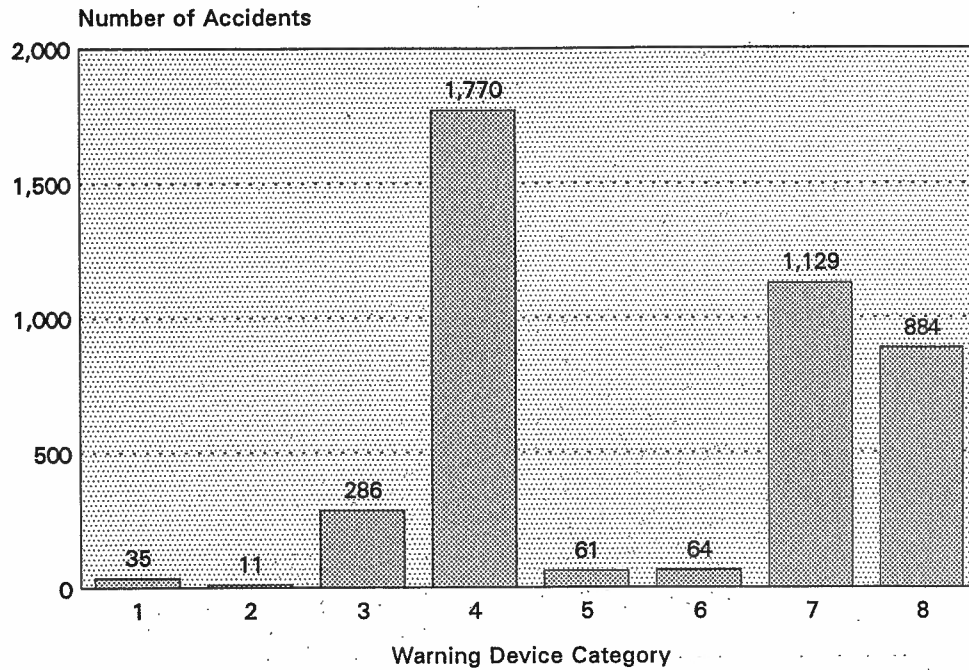
**FIGURE 5A. MOTOR VEHICLE ACCIDENTS/INCIDENTS BY RAIL CONSIST SPEED**



**FIGURE 5B. CASUALTIES BY RAIL CONSIST SPEED**



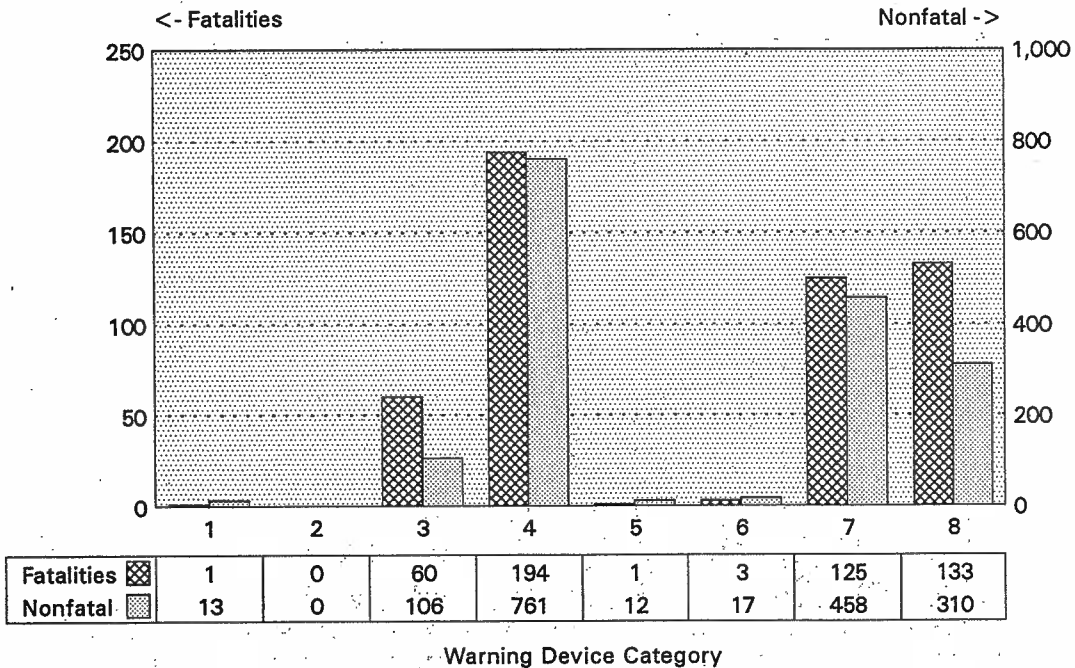
**FIGURE 6A. ACCIDENTS BY WARNING DEVICE CATEGORY**



Motor vehicle accidents

1 = No signs or signals; 2 = Other signs; 3 = Stop Signs; 4 = Crossbucks; 5 = Special warning; 6 = Highway signals, wigwags, bells; 7 = Flashing lights; 8 = Gates

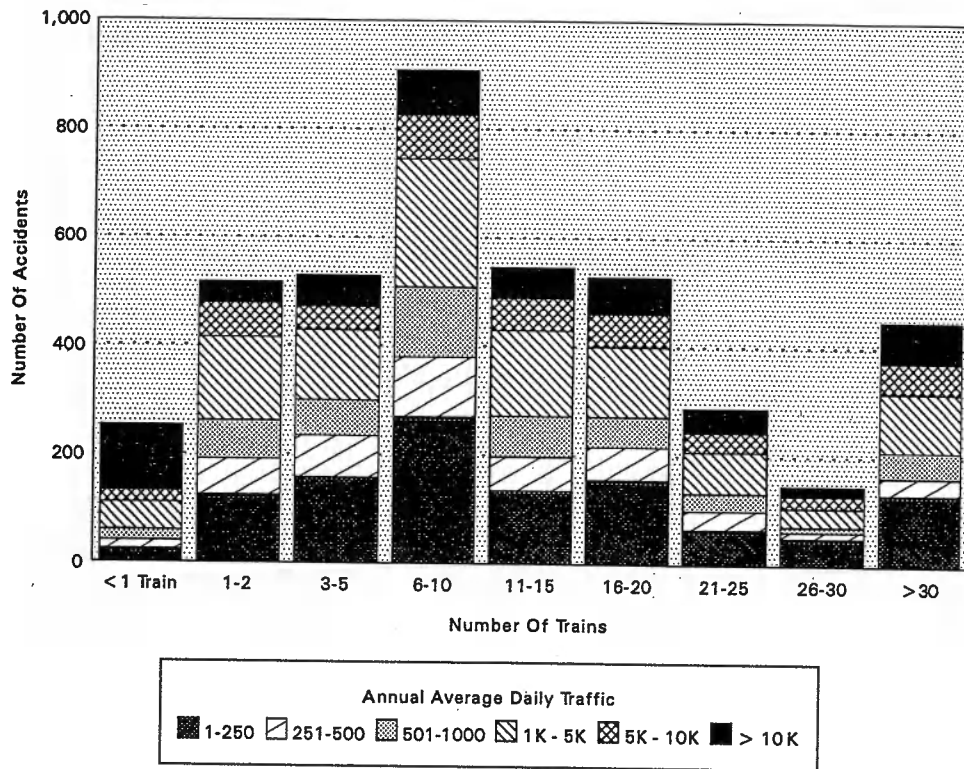
**FIGURE 6B. CASUALTIES BY WARNING DEVICE CATEGORY**



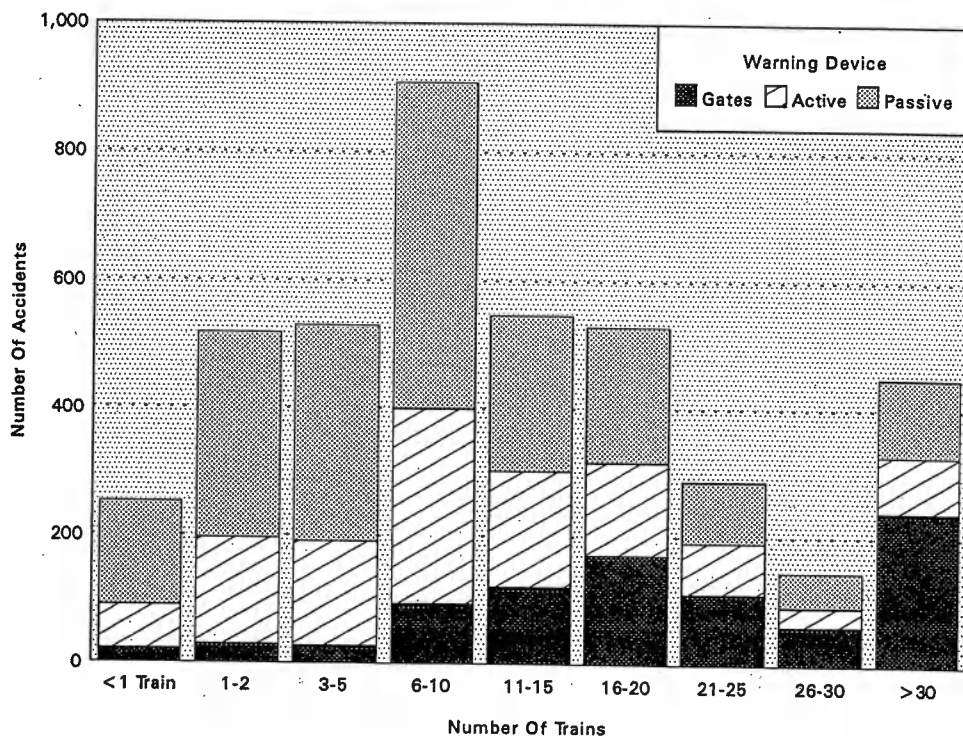
Motor vehicle accidents

1 = No signs or signals; 2 = Other signs; 3 = Stop Signs; 4 = Crossbucks; 5 = Special warning; 6 = Highway signals, wigwags, bells; 7 = Flashing lights; 8 = Gates

**FIGURE 7A. ACCIDENTS/INCIDENTS BY NUMBER OF TRAINS PER DAY AND ANNUAL AVERAGE DAILY TRAFFIC**

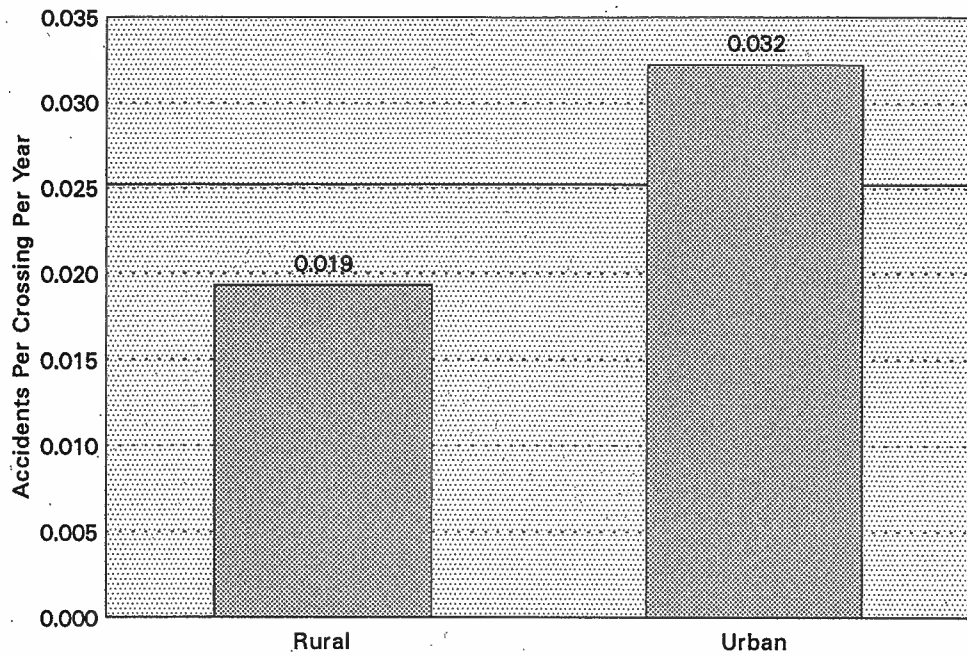


**FIGURE 7B. ACCIDENTS/INCIDENTS BY NUMBER OF TRAINS PER DAY AND WARNING DEVICE CATEGORY**



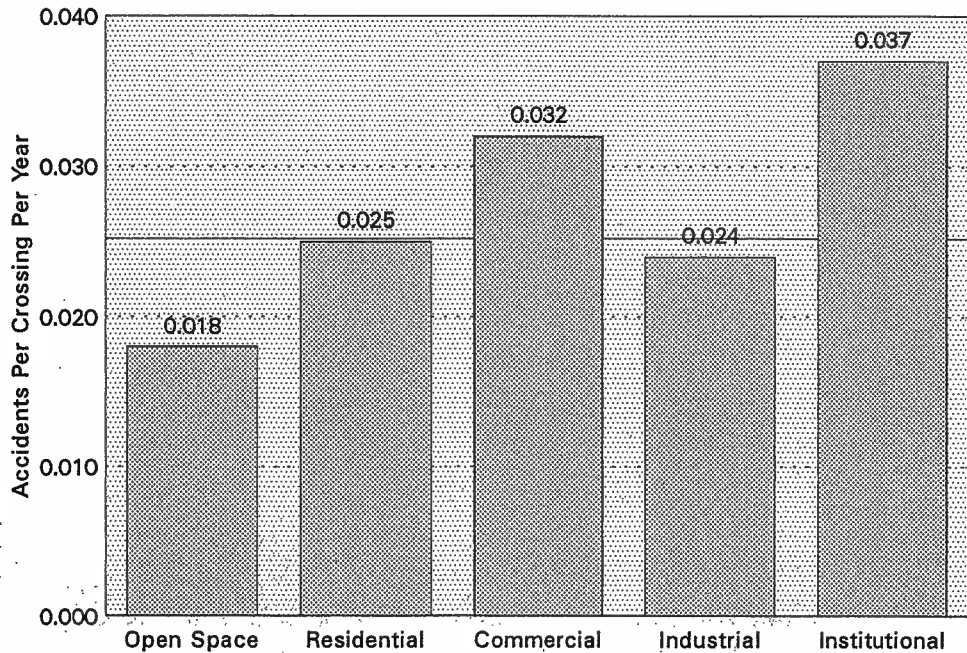


**FIGURE 8. CROSSING ACCIDENT RATE BY LOCATION**



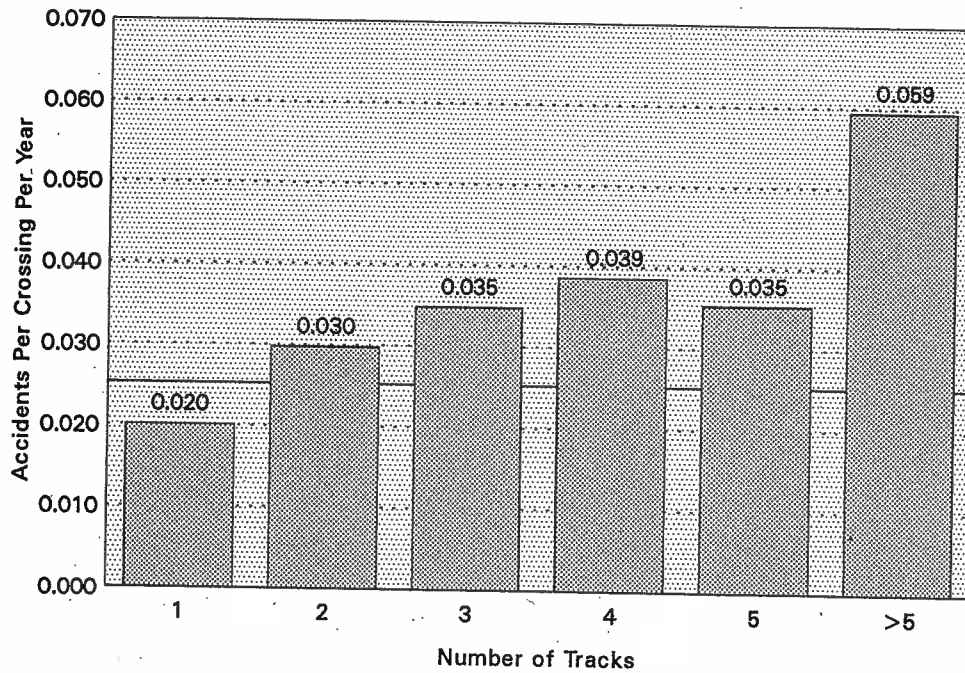
National average .02522

**FIGURE 9. CROSSING ACCIDENT RATE BY TYPE DEVELOPMENT**



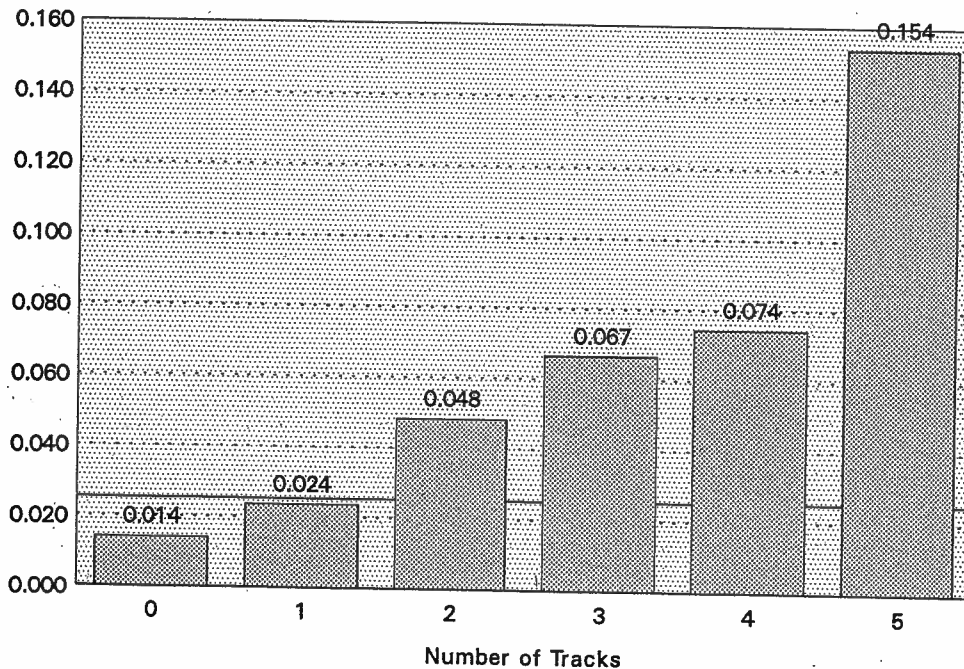
National average .02522

**FIGURE 10. CROSSING ACCIDENT RATE BY NUMBER OF TRACKS**



National average .02522

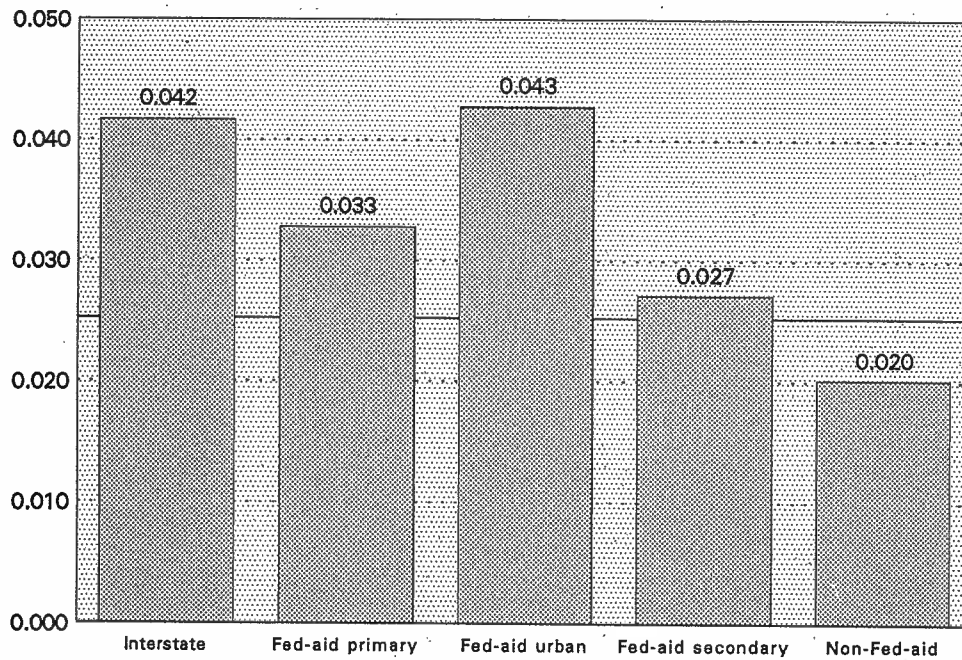
**FIGURE 11. CROSSING ACCIDENT RATE BY NUMBER OF MAINLINE TRACKS**



National average .02522

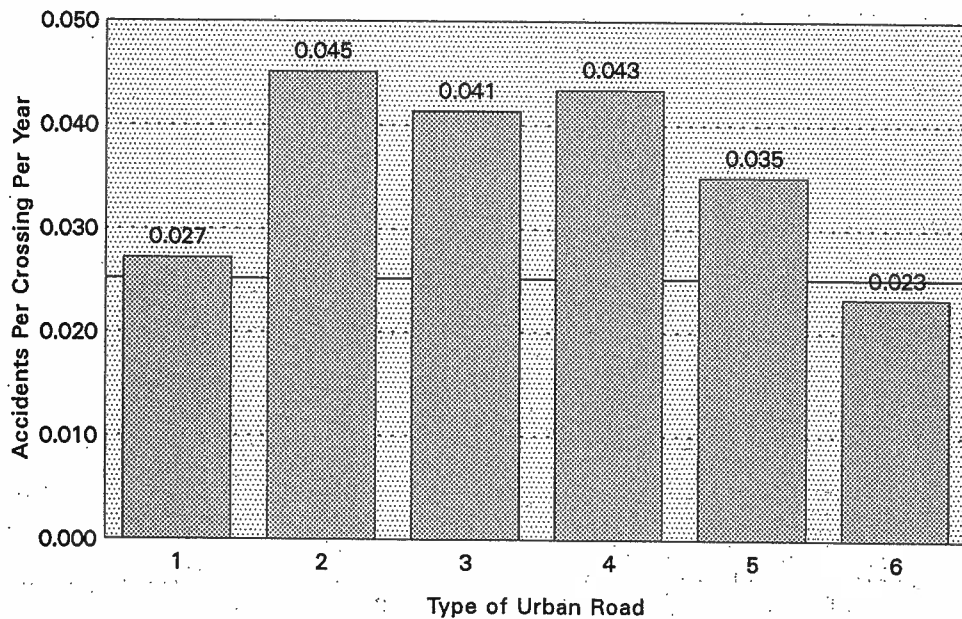


**FIGURE 12. CROSSING ACCIDENT RATE BY HIGHWAY SYSTEM**



National average .02522

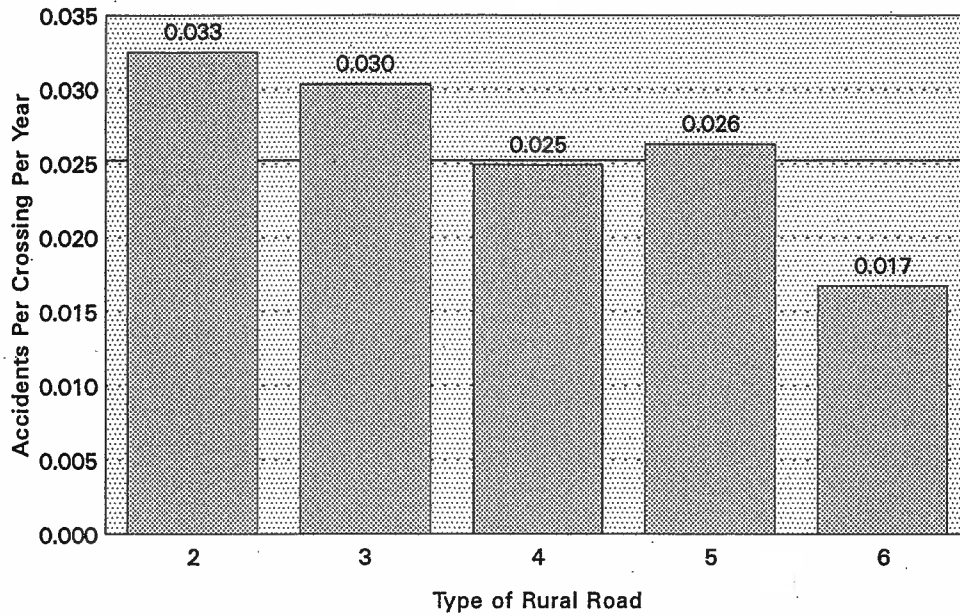
**FIGURE 13. CROSSING ACCIDENT RATE BY TYPE OF URBAN ROAD**



National average .02522

1 = Interstate; 2 = Other freeway or expressway; 3 = Other principal arterial;  
4 = Minor arterial; 5 = Collector; 6 = Local

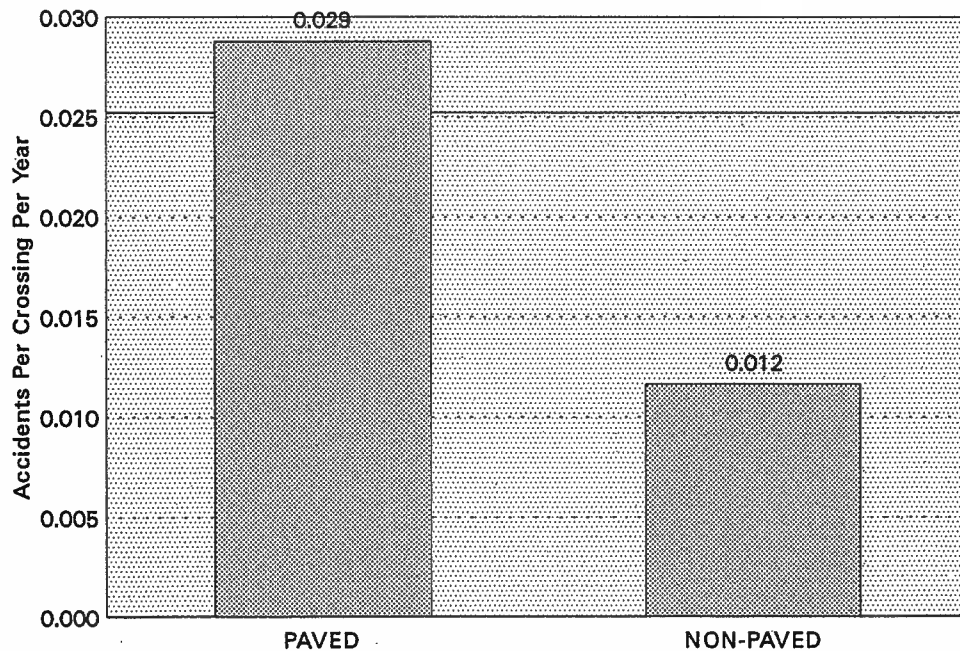
**FIGURE 14. CROSSING ACCIDENT RATE BY TYPE OF RURAL ROAD**



National average .02522

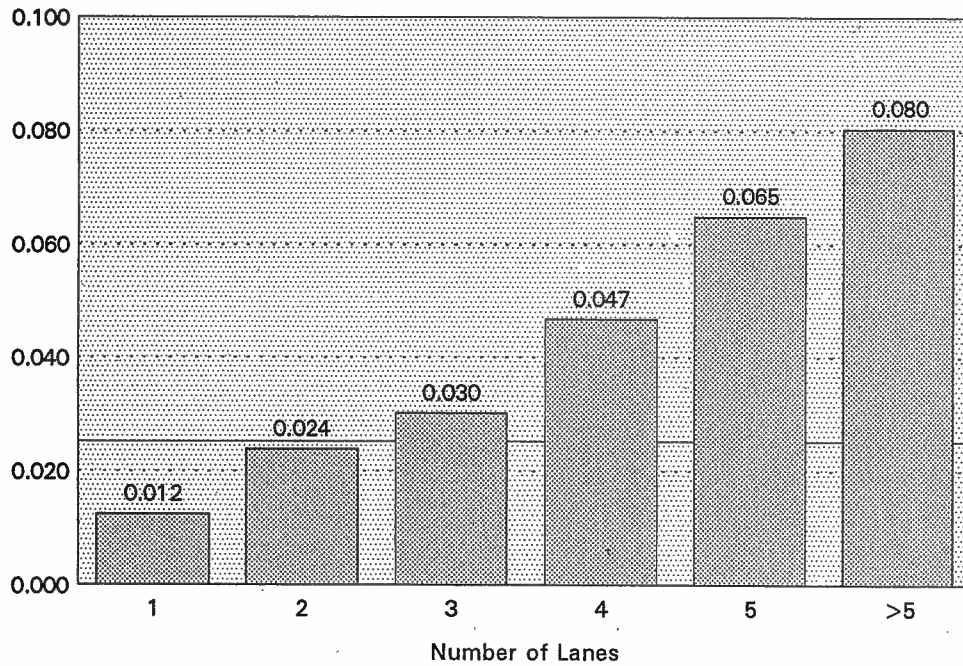
1 = Interstate; 2 = Other freeway or expressway; 3 = Other principal arterial;  
4 = Minor arterial; 5 = Collector; 6 = Local

**FIGURE 15. CROSSING ACCIDENT RATE BY PAVED OR NON-PAVED ROAD SURFACE**



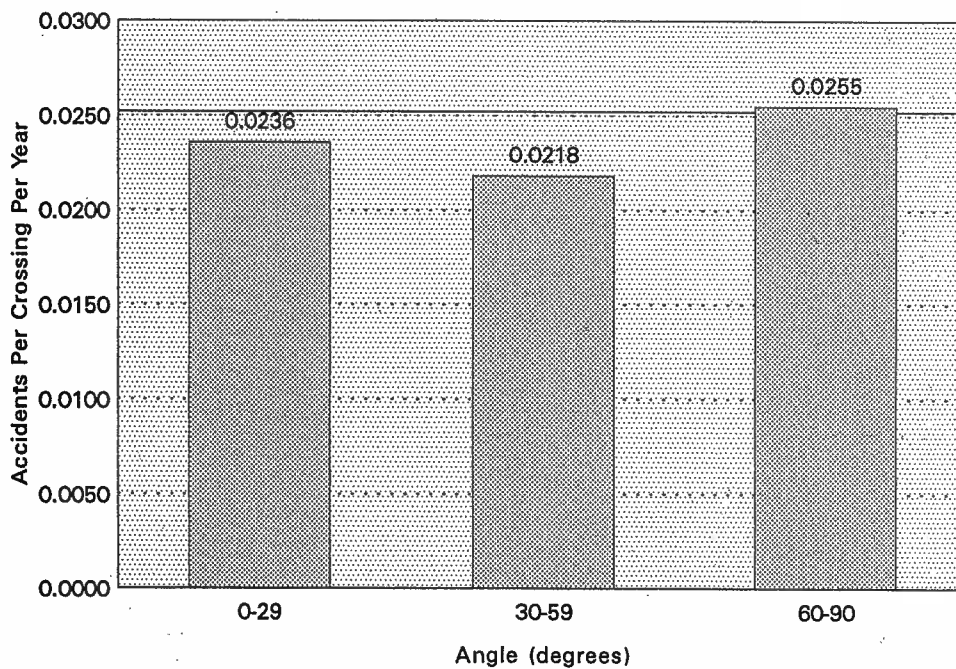
National average .02522

FIGURE 16. CROSSING ACCIDENT RATE BY NUMBER OF TRAFFIC LANES



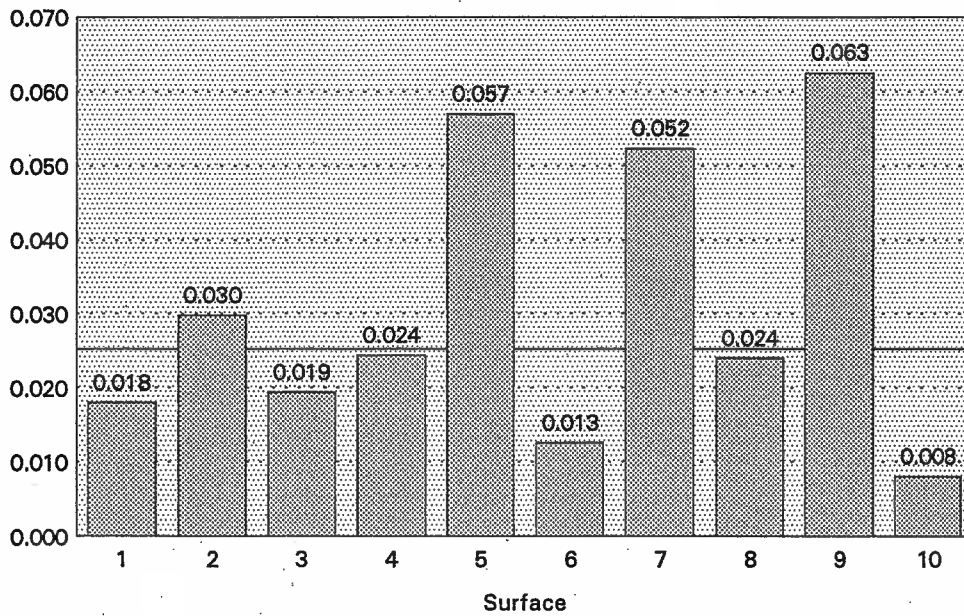
National average .02522

FIGURE 17. CROSSING ACCIDENT RATE BY SMALLEST CROSSING ANGLE



National average .02522

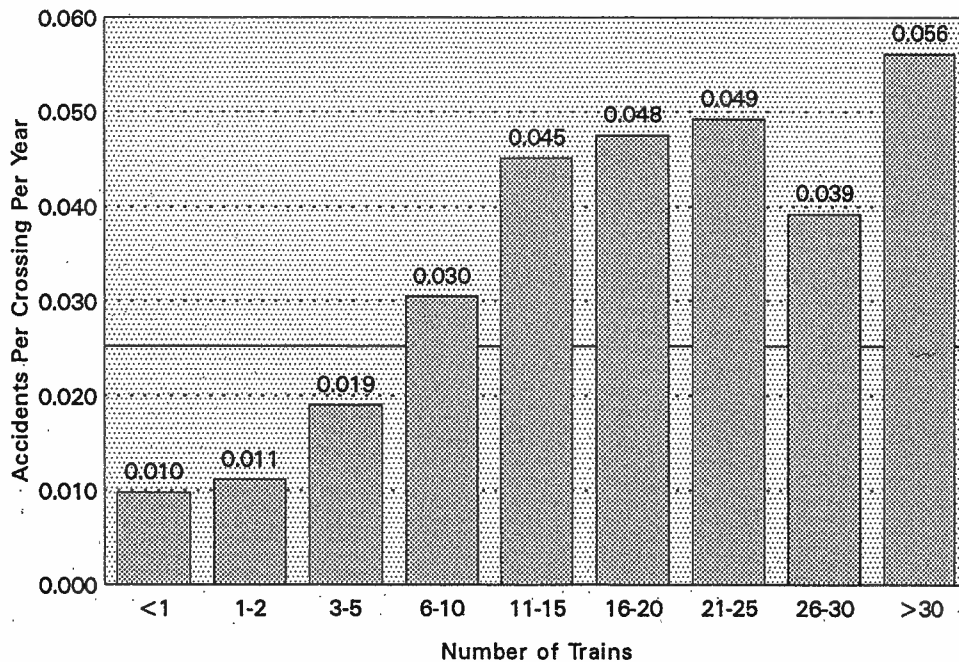
**FIGURE 18. CROSSING ACCIDENT RATE BY CROSSING SURFACE**



National average .02522

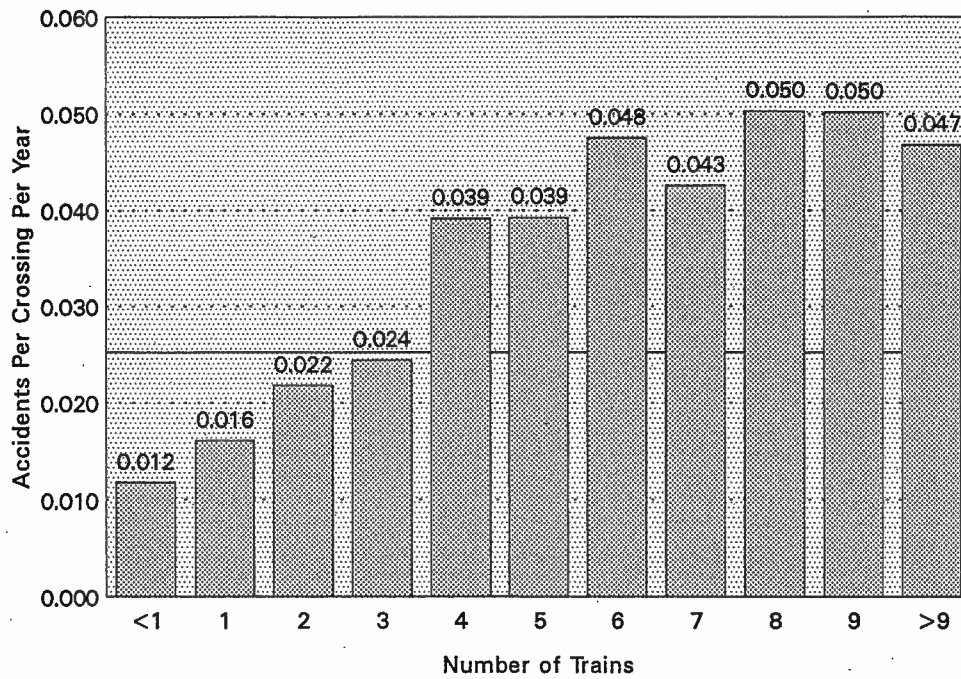
1 = Section timber; 2 = Full wood plank; 3 = Asphalt; 4 = Concrete slab; 5 = Concrete pavement; 6 = Rubber; 7 = Metal sections; 8 = Other metal; 9 = Unconsolidated; 10 = Other

**FIGURE 19. CROSSING ACCIDENT RATE BY NUMBER OF TRAINS PER DAY**



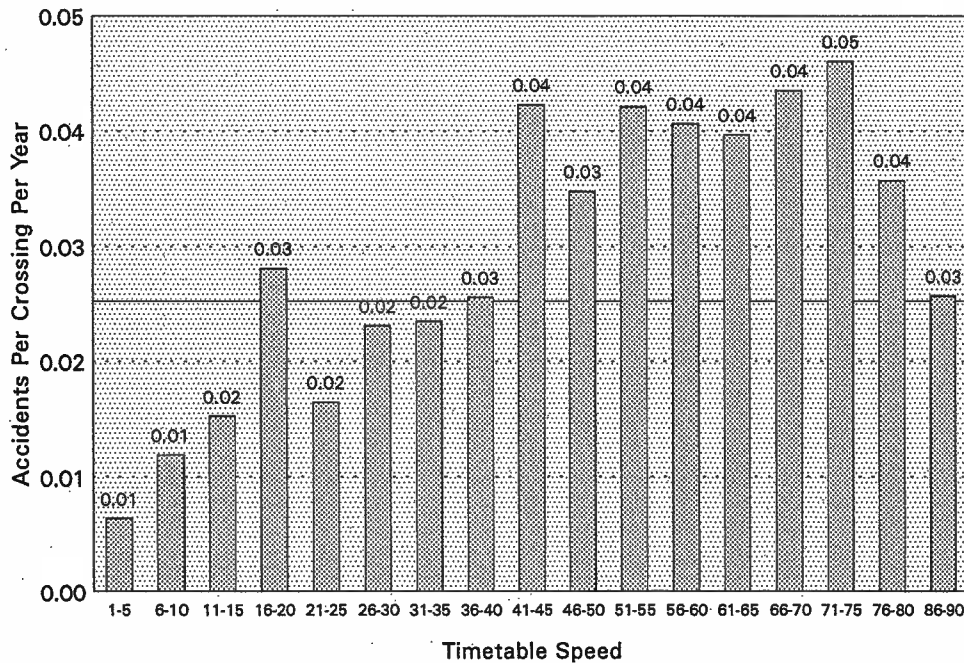
National average .02522

**FIGURE 20. CROSSING ACCIDENT RATE BY NUMBER OF THRU-TRAINS DURING DAYLIGHT HOURS (6am to 6pm)**



National average .02522

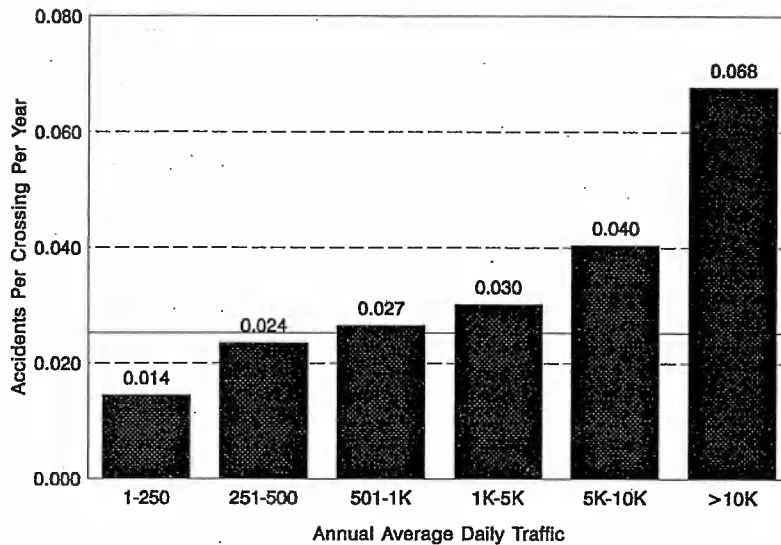
**FIGURE 21. CROSSING ACCIDENT RATE BY MAXIMUM TIMETABLE SPEED**



National average .02522



**FIGURE 22. CROSSING ACCIDENT RATE BY ANNUAL AVERAGE DAILY TRAFFIC**

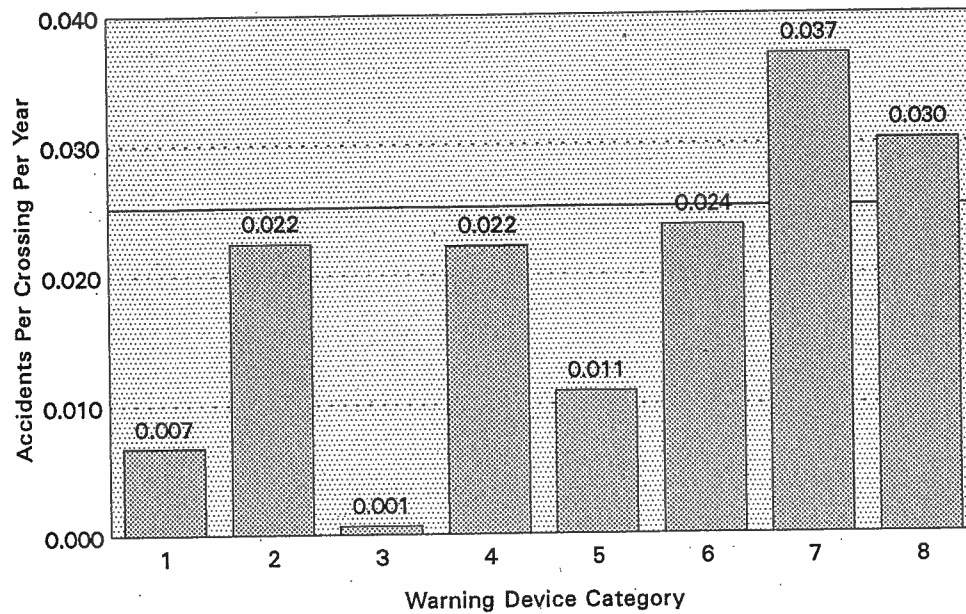


National average .02522

**FIGURE 23. CROSSING ACCIDENT RATE BY NUMBER OF TRAINS AND ANNUAL AVERAGE DAILY TRAFFIC**

Number Of Trains	-----Annual Average Daily Traffic-----					
	1-250	251-500	501-1K	1K-5K	5K-10K	>10K
<1	.002228	.005175	.006361	0.00887	0.01174	.091813
1-2	.005429	.012231	.014042	.017488	.024768	.021476
3-5	.012291	.023369	.021495	.022663	0.02669	.041146
6-10	.019951	.030505	.037885	.038669	.044751	.059723
11-15	.025675	.047112	.055804	0.05753	.073229	.091514
16-20	0.03342	0.0466	.042081	.051766	.075871	.118794
21-25	.029626	.051471	.046852	.053786	.074153	.112532
26-30	.031888	.026906	.025126	.040915	.082143	.083744
>30	.039565	.039312	.059119	.061086	0.07619	.130435

# FIGURE 24. CROSSING ACCIDENT RATE BY WARNING DEVICE CATEGORY



National average .02522

1 = No signs or signals; 2 = Other signs; 3 = Stop Signs; 4 = Crossbucks; 5 = Special warning;  
6 = Highway signals, wigwags, bells; 7 = Flashing lights; 8 = Gates

**LEFT**

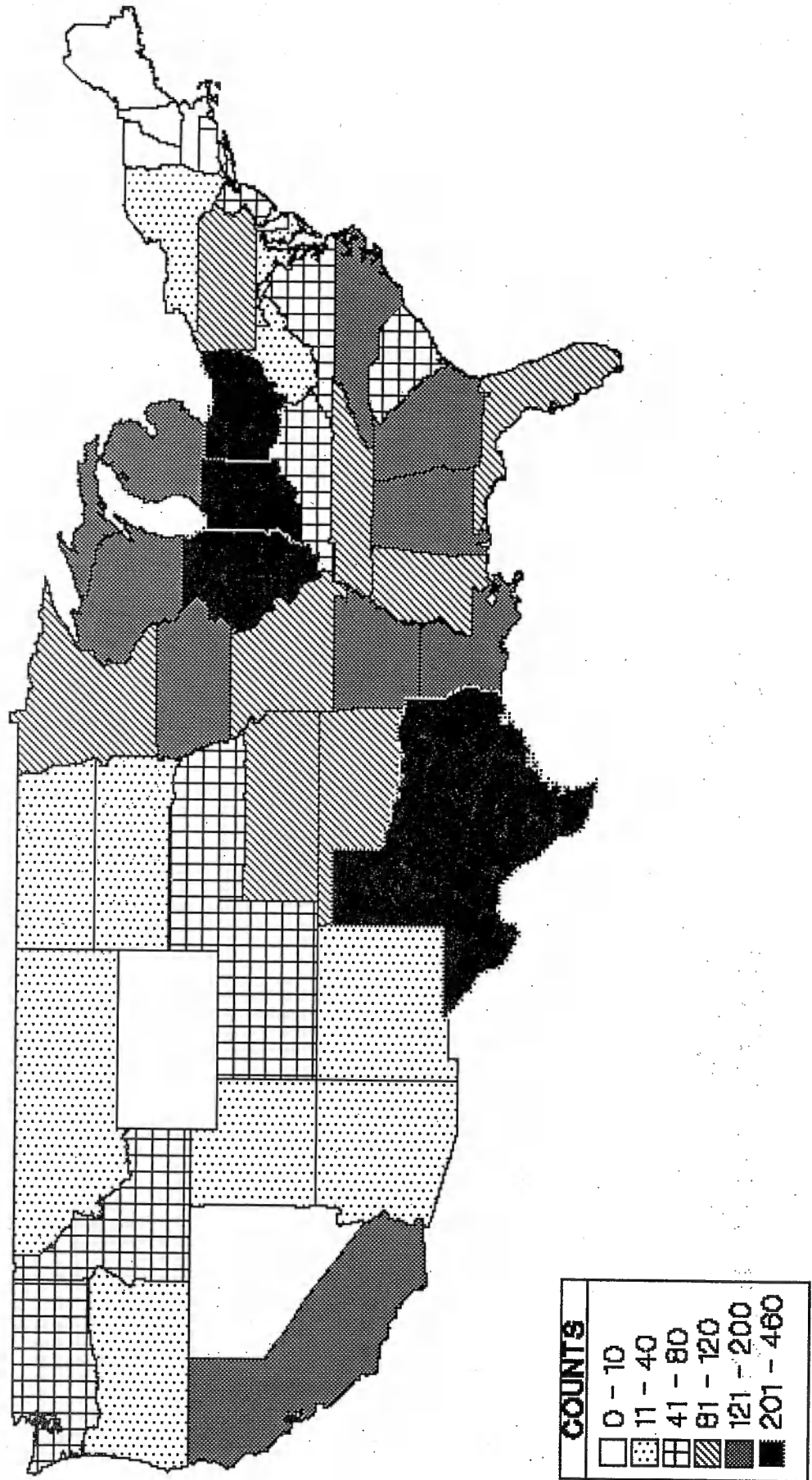
**BLANK**

**INTENTIONALLY**

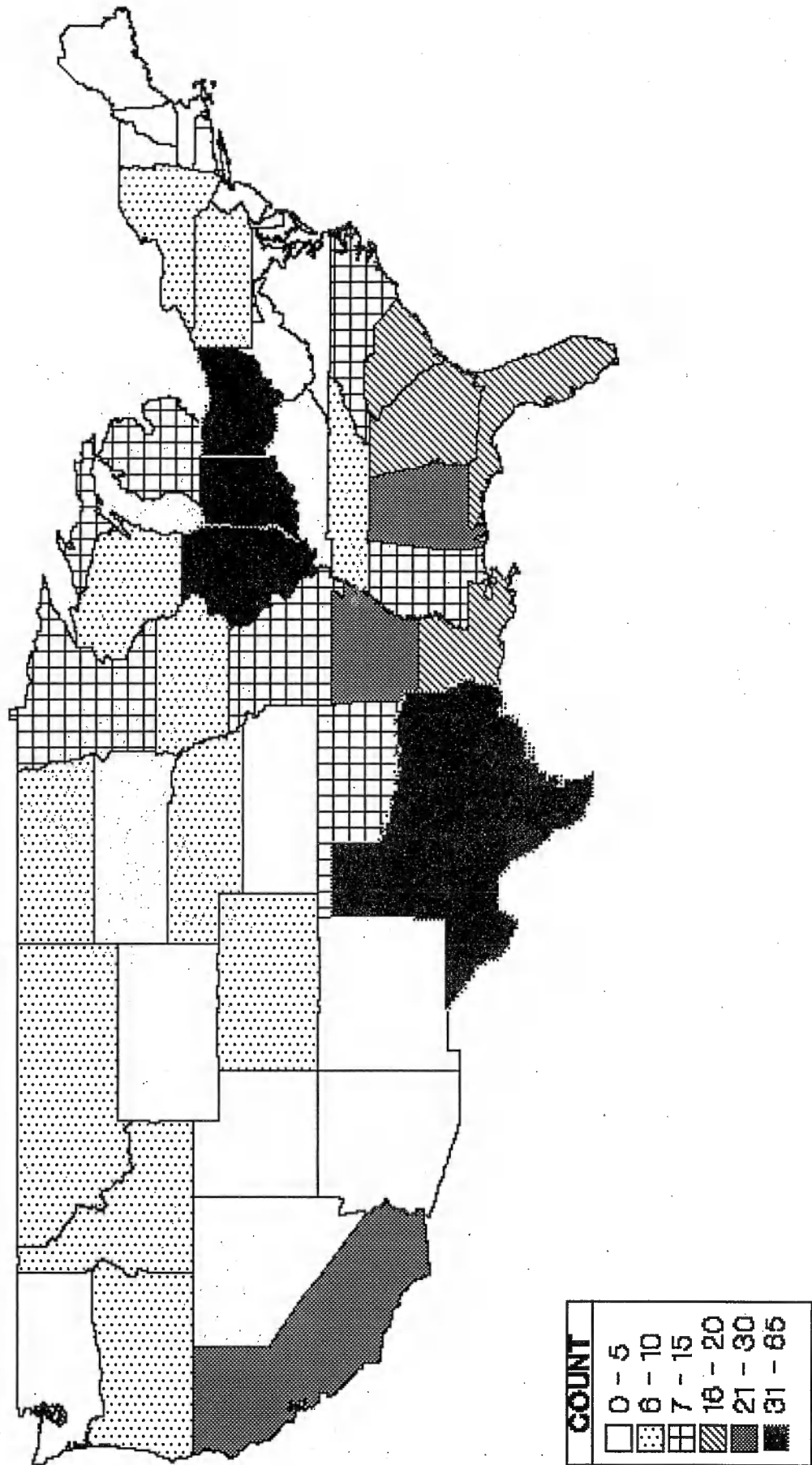


**(M A P S )**  
**CURRENT YEAR ACCIDENTS**  
**AT**  
**PUBLIC CROSSINGS ONLY**

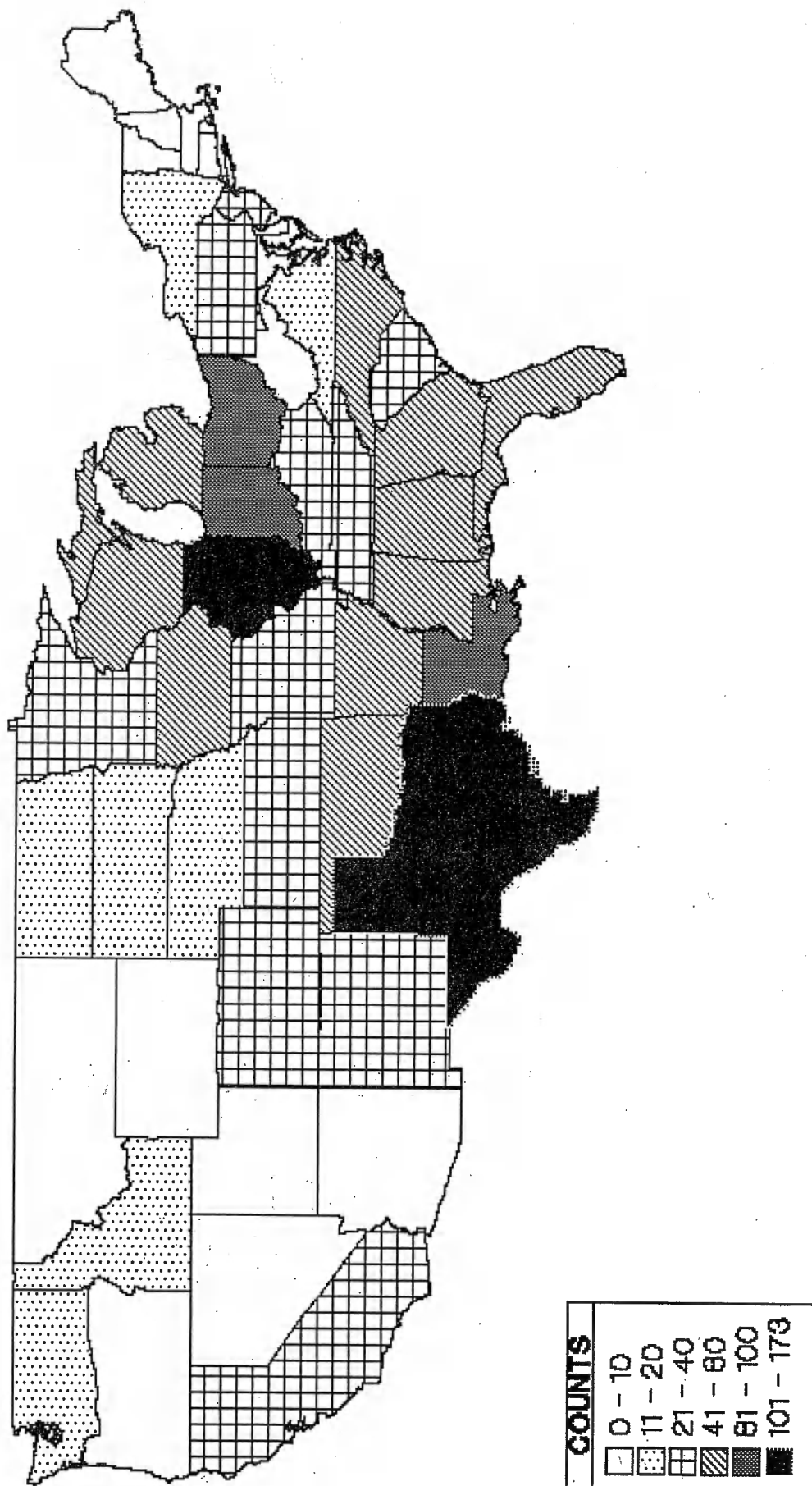
**FIGURE 25A. MOTOR VEHICLE ACCIDENTS/INCIDENTS AT  
PUBLIC HIGHWAY-RAIL CROSSINGS, 1993**



**FIGURE 25B. MOTOR VEHICLE ACCIDENTS/INCIDENTS KILLED  
AT PUBLIC HIGHWAY-RAIL CROSSINGS, 1993**



**FIGURE 25C. MOTOR VEHICLE ACCIDENTS/INCIDENTS/INCIDENTS INJURED  
AT PUBLIC HIGHWAY-RAIL CROSSINGS, 1993**



**( D A T A )**  
**OVERVIEW**  
**OF CURRENT**  
**YEAR**  
**AT**  
**PUBLIC CROSSINGS**  
**ONLY**

**TABLE 3. ACCIDENTS/INCIDENTS AT HIGHWAY-RAIL CROSSINGS,  
BY STATE, 1993**

*Public  
over*

State	No. Of Acc/Inc	---Killed---		---Injured---		Total -Casualties--	
		No.	%	No.	%	No.	%
Alabama.....	167	24	4.11	53	3.04	77	3.31
Alaska.....	10	---	---	5	.29	5	.21
Arizona.....	28	2	.34	11	.63	13	.56
Arkansas.....	141	22	3.77	56	3.21	78	3.35
California.....	165	36	6.16	44	2.52	80	3.44
Colorado.....	57	8	1.37	21	1.20	29	1.25
Connecticut.....	10	1	.17	4	.23	5	.21
Delaware.....	10	---	---	6	.34	6	.26
Dist. of Columbia	---	---	---	---	---	---	---
Florida.....	110	21	3.60	70	4.01	91	3.91
Georgia.....	148	19	3.25	62	3.56	81	3.48
Idaho.....	43	6	1.03	13	.75	19	.82
Illinois.....	280	54	9.25	107	6.14	161	6.92
Indiana.....	286	36	6.16	95	5.45	131	5.63
Iowa.....	132	13	2.23	46	2.64	59	2.53
Kansas.....	100	5	.86	34	1.95	39	1.68
Kentucky.....	72	7	1.20	38	2.18	45	1.93
Louisiana.....	206	21	3.60	98	5.62	119	5.11
Maine.....	4	---	---	1	.06	1	.04
Maryland.....	12	---	---	4	.23	4	.17
Massachusetts.....	9	---	---	---	---	---	---
Michigan.....	153	14	2.40	79	4.53	93	3.99
Minnesota.....	124	16	2.74	44	2.52	60	2.58
Mississippi.....	121	13	2.23	63	3.61	76	3.26
Missouri.....	103	13	2.23	36	2.06	49	2.10
Montana.....	22	8	1.37	6	.34	14	.60
Nebraska.....	82	11	1.88	24	1.38	35	1.50
Nevada.....	1	1	.17	---	---	1	.04
New Hampshire.....	3	---	---	---	---	---	---
New Jersey.....	48	4	.68	29	1.66	33	1.42
New Mexico.....	24	4	.68	24	1.38	28	1.20
New York.....	42	9	1.54	15	.86	24	1.03
North Carolina..	155	15	2.57	48	2.75	63	2.71
North Dakota.....	36	7	1.20	16	.92	23	.99
Ohio.....	259	43	7.36	94	5.39	137	5.88
Oklahoma.....	122	13	2.23	63	3.61	76	3.26
Oregon.....	40	7	1.20	8	.46	15	.64
Pennsylvania.....	98	8	1.37	38	2.18	46	1.98
Rhode Island.....	---	---	---	---	---	---	---
South Carolina...	81	20	3.42	35	2.01	55	2.36
South Dakota.....	30	---	---	15	.86	15	.64
Tennessee.....	100	9	1.54	25	1.43	34	1.46
Texas.....	464	67	11.47	186	10.67	253	10.87
Utah.....	26	6	1.03	5	.29	11	.47
Vermont.....	3	1	.17	4	.23	5	.21
Virginia.....	71	5	.86	18	1.03	23	.99
Washington.....	55	4	.68	11	.63	15	.64
West Virginia...	29	2	.34	8	.46	10	.43
Wisconsin.....	151	8	1.37	80	4.59	88	3.78
Wyoming.....	4	1	.17	2	.11	3	.13
Unknown.....	---	---	---	---	---	---	---
Total.....	4,437	584	100.00	1,744	100.00	2,328	100.00

**TABLE 4. (MV) ACCIDENTS/INCIDENTS AT HIGHWAY-RAIL CROSSINGS,  
BY STATE, 1993**

State	No. Of Acc/Inc	-----Casualties-----			Vehicles Registered	--Per 10,000 Registration--		
		Kld	Inj	Total		Acc/Inc	Kld	Inj
Alabama.....	164	23	53	76	34,020	48.21	6.76	15.58
Alaska.....	9	---	4	4	5,120	17.58	---	7.81
Arizona.....	26	2	10	12	28,610	9.09	.70	3.50
Arkansas.....	136	21	54	75	15,380	88.43	13.65	35.11
California.....	152	29	39	68	230,820	6.59	1.26	1.69
Colorado.....	53	7	21	28	29,830	17.77	2.35	7.04
Connecticut.....	10	1	4	5	26,050	3.84	.38	1.54
Delaware.....	10	---	6	6	5,670	17.64	---	10.58
Dist. of Columbia	---	---	---	---	2,640	---	---	---
Florida.....	101	16	68	84	106,860	9.45	1.50	6.36
Georgia.....	144	18	61	79	61,790	23.30	2.91	9.87
Idaho.....	43	6	13	19	10,650	40.38	5.63	12.21
Illinois.....	257	41	102	143	81,920	31.37	5.00	12.45
Indiana.....	270	33	88	121	47,170	57.24	7.00	18.66
Iowa.....	125	10	44	54	28,980	43.13	3.45	15.18
Kansas.....	97	5	32	37	20,120	48.21	2.49	15.90
Kentucky.....	66	5	36	41	30,590	21.58	1.63	11.77
Louisiana.....	199	19	93	112	31,780	62.62	5.98	29.26
Maine.....	4	---	1	1	10,050	3.98	---	1.00
Maryland.....	12	---	4	4	38,140	3.15	---	1.05
Massachusetts....	9	---	---	---	36,840	2.44	---	---
Michigan.....	151	14	78	92	75,380	20.03	1.86	10.35
Minnesota.....	116	15	38	53	36,590	31.70	4.10	10.39
Mississippi.....	120	13	62	75	20,250	59.26	6.42	30.62
Missouri.....	100	12	36	48	41,250	24.24	2.91	8.73
Montana.....	22	8	6	14	9,550	23.04	8.38	6.28
Nebraska.....	74	10	20	30	13,920	53.16	7.18	14.37
Nevada.....	---	---	---	---	9,700	---	---	---
New Hampshire.....	3	---	---	---	9,140	3.28	---	---
New Jersey.....	44	2	29	31	57,640	7.63	.35	5.03
New Mexico.....	22	4	22	26	14,050	15.66	2.85	15.66
New York.....	37	6	15	21	99,660	3.71	.60	1.51
North Carolina...	149	12	47	59	54,710	27.23	2.19	8.59
North Dakota.....	36	7	16	23	6,840	52.63	10.23	23.39
Ohio.....	252	40	92	132	94,130	26.77	4.25	9.77
Oklahoma.....	116	12	61	73	28,440	40.79	4.22	21.45
Oregon.....	39	6	8	14	27,130	14.38	2.21	2.95
Pennsylvania.....	92	7	35	42	84,760	10.85	.83	4.13
Rhode Island.....	---	---	---	---	6,360	---	---	---
South Carolina...	74	17	33	50	26,130	28.32	6.51	12.63
South Dakota.....	29	---	15	15	7,530	38.51	---	19.92
Tennessee.....	96	9	22	31	48,270	19.89	1.86	4.56
Texas.....	452	65	184	249	130,320	34.68	4.99	14.12
Utah.....	25	5	5	10	13,010	19.22	3.84	3.84
Vermont.....	2	---	4	4	4,830	4.14	---	8.28
Virginia.....	69	4	17	21	54,550	12.65	.73	3.12
Washington.....	55	4	11	15	45,560	12.07	.88	2.41
West Virginia....	28	1	8	9	12,970	21.59	.77	6.17
Wisconsin.....	147	8	78	86	39,850	36.89	2.01	19.57
Wyoming.....	3	---	2	2	5,120	5.86	---	3.91
Unknown.....	---	---	---	---	---	---	---	---
Total.....	4,240	517	1,677	2,194	1,960,670	21.63	2.64	8.55

Note: Vehicle registration figures are for 1993 and were supplied by the Federal Highway Administration. Registration figures for Hawaii are omitted because it does not have any reporting railroads.

TABLE 5. ACCIDENTS/INCIDENTS AT HIGHWAY-RAIL CROSSINGS,  
BY TYPE OF MOTOR VEHICLE, 1993

State	---Automobile---			----Truck----			-Truck Trailer-			---Bus---			---School Bus---			---Motorcycle---		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
Alabama.....	109	18	37	32	4	11	23	1	5	---	---	---	---	---	---	---	---	---
Alaska.....	2	---	1	7	---	3	---	---	---	---	---	---	---	---	---	---	---	---
Arizona.....	14	1	7	10	1	3	2	---	---	---	---	---	---	---	---	---	---	---
Arkansas.....	75	14	27	39	6	17	22	1	10	---	---	---	---	---	---	---	---	---
California.....	107	23	29	26	4	4	17	2	5	---	---	---	---	---	---	2	---	1
Colorado.....	30	6	10	13	1	6	9	---	5	---	---	---	1	---	---	---	---	---
Connecticut.....	10	1	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Delaware.....	7	---	3	3	---	3	---	---	---	---	---	---	---	---	---	---	---	---
Dist. of Columbia	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Florida.....	74	9	18	17	1	9	10	6	41	---	---	---	---	---	---	---	---	---
Georgia.....	90	14	32	32	4	22	21	---	6	---	---	---	---	---	---	1	---	1
Idaho.....	22	2	7	14	2	6	7	2	---	---	---	---	---	---	---	---	---	---
Illinois.....	186	33	74	48	6	11	21	---	17	---	---	---	---	---	---	2	2	---
Indiana.....	197	23	60	57	6	19	14	2	8	---	---	---	---	---	---	2	2	1
Iowa.....	79	6	35	30	2	8	16	2	1	---	---	---	---	---	---	---	---	---
Kansas.....	53	3	19	31	2	6	13	---	7	---	---	---	---	---	---	---	---	---
Kentucky.....	42	3	24	13	2	5	11	---	7	---	---	---	---	---	---	---	---	---
Louisiana.....	115	11	56	62	5	30	22	3	7	---	---	---	---	---	---	---	---	---
Maine.....	3	---	1	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---
Maryland.....	8	---	3	2	---	1	2	---	---	---	---	---	---	---	---	---	---	---
Massachusetts.....	8	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---
Michigan.....	106	11	62	28	3	10	16	---	5	---	---	---	---	---	---	1	---	1
Minnesota.....	77	11	24	27	4	11	12	---	3	---	---	---	---	---	---	---	---	---
Mississippi.....	73	4	39	40	9	20	7	---	3	---	---	---	---	---	---	---	---	---
Missouri.....	64	6	16	28	4	18	8	2	2	---	---	---	---	---	---	---	---	---
Montana.....	8	4	3	12	4	3	2	---	---	---	---	---	---	---	---	---	---	---
Nebraska.....	42	4	11	24	5	8	7	1	---	---	---	---	---	---	---	1	---	1
Nevada.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New Hampshire.....	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
New Jersey.....	35	1	25	4	---	1	5	1	3	---	---	---	---	---	---	---	---	---
New Mexico.....	14	1	19	7	3	3	1	---	---	---	---	---	---	---	---	---	---	---
New York.....	23	5	11	9	---	3	4	---	1	---	---	---	---	---	---	1	1	---
North Carolina...	103	10	33	25	1	7	21	1	7	---	---	---	---	---	---	---	---	---
North Dakota.....	20	4	5	13	3	8	3	---	3	---	---	---	---	---	---	---	---	---
Ohio.....	176	30	66	53	7	18	21	2	8	---	---	---	---	---	---	2	1	---
Oklahoma.....	59	6	32	48	6	24	9	---	5	---	---	---	---	---	---	---	---	---
Oregon.....	24	6	3	12	---	3	3	---	2	---	---	---	---	---	---	---	---	---
Pennsylvania.....	60	7	23	23	---	6	9	---	6	---	---	---	---	---	---	---	---	---
Rhode Island.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
South Carolina...	44	14	17	16	2	9	14	1	7	---	---	---	---	---	---	---	---	---
South Dakota.....	20	---	9	8	---	3	1	---	3	---	---	---	---	---	---	---	---	---
Tennessee.....	83	7	21	8	2	1	5	---	---	---	---	---	---	---	---	---	---	---
Texas.....	260	39	109	151	24	62	39	2	13	1	---	---	1	---	---	---	---	---
Utah.....	12	3	3	9	---	1	4	2	1	---	---	---	---	---	---	---	---	---
Vermont.....	---	---	---	2	---	4	---	---	---	---	---	---	---	---	---	---	---	---
Virginia.....	49	3	12	10	1	3	10	---	2	---	---	---	---	---	---	---	---	---
Washington.....	31	3	7	16	1	3	7	---	---	---	---	---	---	---	---	1	---	1
West Virginia.....	22	1	7	5	---	---	1	---	1	---	---	---	---	---	---	---	---	---
Wisconsin.....	104	7	58	34	---	19	9	1	1	---	---	---	---	---	---	---	---	---
Wyoming.....	2	---	---	1	---	2	---	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total.....	2,745	354	1,062	1,049	125	414	429	32	195	1	---	---	2	---	---	14	6	6



**TABLE 6. (MV) ACCIDENTS/INCIDENTS AT HIGHWAY-RAIL CROSSINGS,  
BY TYPE OF CONSIST, 1993**

State	---Freight---			---Passenger---			-Yard Switching			---Other---		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
Alabama.....	140	23	50	4	---	1	13	---	1	7	---	1
Alaska.....	4	---	2	3	---	2	2	---	---	---	---	---
Arizona.....	18	2	7	---	---	---	5	---	2	3	---	1
Arkansas.....	109	17	48	2	1	---	11	---	---	14	3	6
California.....	100	23	23	26	6	8	13	---	5	13	---	3
Colorado.....	38	7	12	4	---	6	8	---	1	3	---	2
Connecticut.....	4	---	2	5	1	2	---	---	---	1	---	---
Delaware.....	9	---	6	---	---	---	---	---	---	1	---	---
Dist. of Columbia	---	---	---	---	---	---	---	---	---	---	---	---
Florida.....	64	7	18	21	9	46	4	---	---	12	---	4
Georgia.....	118	16	55	3	1	1	10	---	---	13	1	5
Idaho.....	35	6	11	1	---	---	1	---	---	6	---	2
Illinois.....	166	30	60	29	6	29	28	2	2	34	3	11
Indiana.....	209	23	70	27	8	10	13	---	4	21	2	4
Iowa.....	93	10	39	---	---	---	17	---	3	15	---	2
Kansas.....	82	4	29	4	1	---	6	---	1	5	---	2
Kentucky.....	53	4	32	1	---	1	6	1	1	6	---	2
Louisiana.....	139	17	64	5	1	3	27	1	15	28	---	11
Maine.....	4	---	1	---	---	---	---	---	---	---	---	---
Maryland.....	7	---	2	---	---	---	5	---	2	---	---	---
Massachusetts....	4	---	---	4	---	---	1	---	---	---	---	---
Michigan.....	123	14	70	5	---	1	13	---	3	10	---	4
Minnesota.....	84	13	31	1	1	---	17	1	5	14	---	2
Mississippi.....	96	13	53	7	---	2	9	---	4	8	---	3
Missouri.....	78	12	32	3	---	---	12	---	3	7	---	1
Montana.....	20	8	6	1	---	---	1	---	---	---	---	---
Nebraska.....	64	9	18	2	1	1	5	---	---	3	---	1
Nevada.....	---	---	---	---	---	---	---	---	---	---	---	---
New Hampshire....	3	---	---	---	---	---	---	---	---	---	---	---
New Jersey.....	22	2	12	14	---	16	1	---	---	7	---	1
New Mexico.....	20	4	22	---	---	---	---	---	---	2	---	---
New York.....	26	1	9	9	5	5	1	---	---	1	---	1
North Carolina...	127	8	36	4	---	2	8	1	4	10	3	5
North Dakota.....	31	6	16	1	1	---	1	---	---	3	---	---
Ohio.....	221	36	81	4	1	---	10	1	3	17	2	8
Oklahoma.....	92	8	52	---	---	---	9	1	3	15	3	6
Oregon.....	32	6	6	1	---	1	1	---	---	5	---	1
Pennsylvania.....	73	2	26	5	---	3	4	---	1	10	5	5
Rhode Island.....	---	---	---	---	---	---	---	---	---	---	---	---
South Carolina...	64	13	30	1	2	---	3	---	2	6	2	1
South Dakota.....	23	---	15	---	---	---	2	---	---	4	---	---
Tennessee.....	80	8	19	3	1	1	11	---	2	2	---	---
Texas.....	338	59	144	12	4	3	60	1	17	42	1	20
Utah.....	18	3	5	1	2	---	4	---	---	2	---	---
Vermont.....	2	---	4	---	---	---	---	---	---	---	---	---
Virginia.....	53	1	12	4	1	2	3	1	---	9	1	3
Washington.....	30	4	2	3	---	---	14	---	5	8	---	4
West Virginia....	21	1	4	1	---	---	1	---	---	5	---	4
Wisconsin.....	107	6	62	1	---	---	22	1	8	17	1	8
Wyoming.....	2	---	2	---	---	---	---	---	---	1	---	---
Unknown.....	---	---	---	---	---	---	---	---	---	---	---	---
Total.....	3,246	426	1,300	222	53	146	382	11	97	390	27	134

Note: "Other" includes mixed trains, work trains, light locomotives, single car or cut of cars

**TABLE 7. (MV) ACCIDENTS/INCIDENTS AT HIGHWAY-RAIL CROSSINGS,  
BY RAILROAD AND WARNING DEVICE, 1993**

Railroad	Gates	Flashing Lights	Hwy Sig. Wigwags Bells	Special	Cross-Bucks	Stop Signs	Other Signs	No Signs Or Signals	Total
Alaska Railroad Corp.	---	6	---	---	1	1	---	---	8
Alton & Southern Railroad	3	---	---	---	---	---	---	---	3
Amtrak (Nat'l Railroad Passenger Corp.)	72	16	4	---	30	8	2	---	132
Atchison, Topeka And Santa Fe Railway Co.	63	59	1	1	73	---	---	---	197
Bangor & Aroostook Railroad	---	---	---	---	1	---	---	---	1
Belt Railway Company of Chicago	2	1	---	1	---	---	---	---	4
Bessemer & Lake Erie Railroad Co.	---	---	---	---	---	1	---	---	1
Birmingham Southern Railroad Co.	---	1	---	---	---	---	---	---	1
Burlington Northern Railroad Co.	90	78	2	3	178	24	---	1	376
Chicago & North Western Transp.	32	34	4	3	56	7	---	1	137
Chicago, Central & Pacific Railroad Co.	3	12	---	1	7	1	---	---	24
Consolidated Rail Corp.	63	104	5	7	93	15	3	3	293
Cuyahoga Valley Railway Co.	---	---	---	---	---	---	---	---	---
CSX Transportation	85	122	6	4	184	36	1	11	449
Dakota, Minnesota & Eastern Railroad	---	5	---	---	18	1	---	---	24
Delaware & Hudson Railroad Co.	1	2	---	---	3	---	---	---	6
Denver & Rio Grande Western Railroad Co.	4	4	3	1	7	1	---	---	20
Duluth, Missabe & Iron Range Railway Co.	---	---	---	---	2	1	---	---	3
Elgin, Joliet & Eastern Railway Co.	5	1	---	1	3	---	---	---	10
Florida East Coast Railway Co.	18	---	---	---	---	---	---	---	18
Gateway Western Railway	---	4	---	---	1	---	---	---	5
Grand Trunk Western Railroad Co.	22	21	---	1	8	8	1	1	62
Houston Belt & Terminal Railway Co.	3	1	---	---	2	---	---	---	6
Illinois Central Railroad Co.	11	40	---	1	45	---	---	---	97
Indiana Harbor Belt Railroad Co.	7	1	---	---	---	---	---	---	8
Kansas City Southern Railway Co.	8	39	1	---	59	---	---	---	107
Long Island Rail Road	5	---	---	3	---	---	---	1	9
Metro North Commuter Railroad Co.	1	3	---	---	---	---	---	---	4
Midsouth Rail Corporation	---	7	---	---	13	---	---	---	20
Montana Rail Link	1	---	---	---	6	1	---	1	9
New Jersey Transit Rail Operations	8	5	---	---	---	---	---	1	14
Norfolk Southern Corp.	122	203	6	5	308	66	---	6	710
Northeast Illinois Regional Commuter	6	1	---	---	---	---	---	---	7
Northern Indiana Commuter Trans.	---	4	4	---	---	4	---	---	11
Paducah & Louisville Railway Co.	---	1	---	---	4	---	---	---	5
Port Authority Trans Hudson	---	---	---	---	---	---	---	---	---
Port Terminal Railroad Assoc.	2	---	---	---	1	---	---	---	3
Soo Line Railroad Co.	12	25	---	1	38	9	---	---	85
Southeastern Pennsylvania Transp.	1	1	---	---	---	---	---	---	2
Southern Pacific Transp. Co.	73	29	11	5	68	6	---	---	192
Southern Pacific, Chicago-St. Louis	1	4	---	---	2	---	---	---	7
Southrail Corp.	---	5	---	---	17	---	---	---	22
Springfield Terminal Railway Co.	2	4	---	2	---	---	---	---	8
St. Louis Southwestern Railway Co.	15	10	4	---	32	1	---	---	62
Terminal Railroad Assoc. of State Dock	---	---	---	3	2	---	---	---	5
Texas Mexican Railway Co.	---	2	---	---	---	1	---	---	3
Union Pacific Railroad Co.	104	145	4	4	239	60	1	8	561
Union Railroad Company (Pittsburgh)	---	---	---	---	---	---	---	---	---
Wheeling & Lake Erie Railway Co.	1	3	---	---	22	---	---	---	26
Wisconsin Central Ltd.	7	20	1	---	31	4	---	---	63
All Other Railroads.....	31	106	8	14	216	30	3	1	419
<b>Total.....</b>	<b>884</b>	<b>1,129</b>	<b>64</b>	<b>61</b>	<b>1,770</b>	<b>286</b>	<b>11</b>	<b>35</b>	<b>4,200</b>

Note: "Special" are crossings protected by watchmen or members of train crew.

The totals on this table are slightly higher than those shown on other tables. The reporting rules require that when an Amtrak train is being operated by a crew of another railroad, both Amtrak and the operating carrier must make a report of an accident/incident. In all other tables these accidents/incidents are only counted once.

FIGURE 28. CROSSINGS BY NUMBER OF LANES

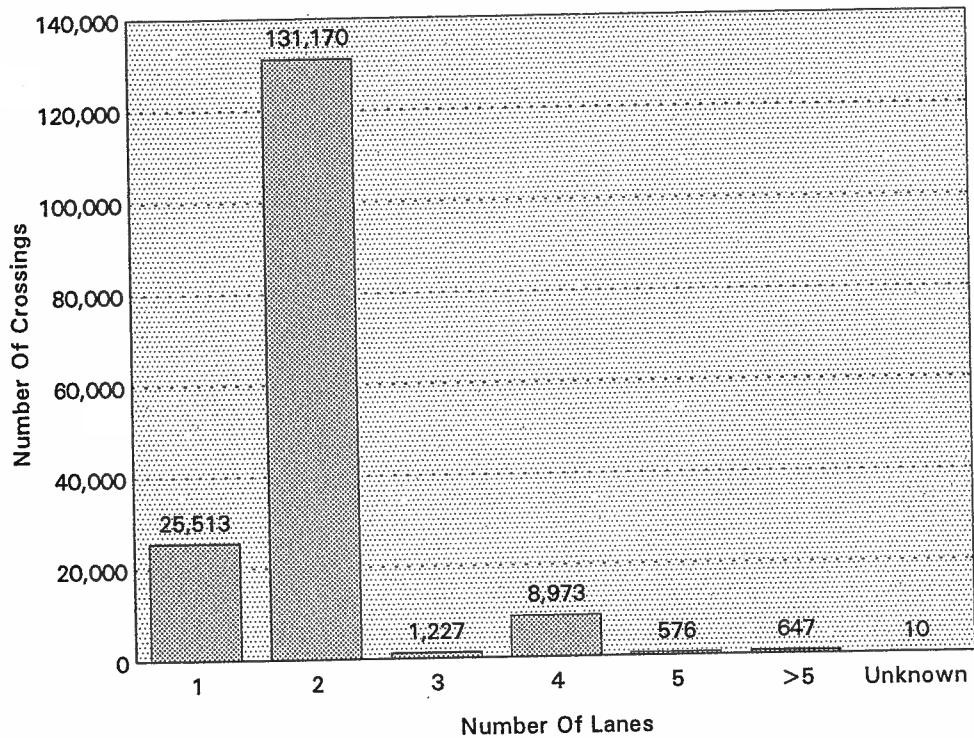
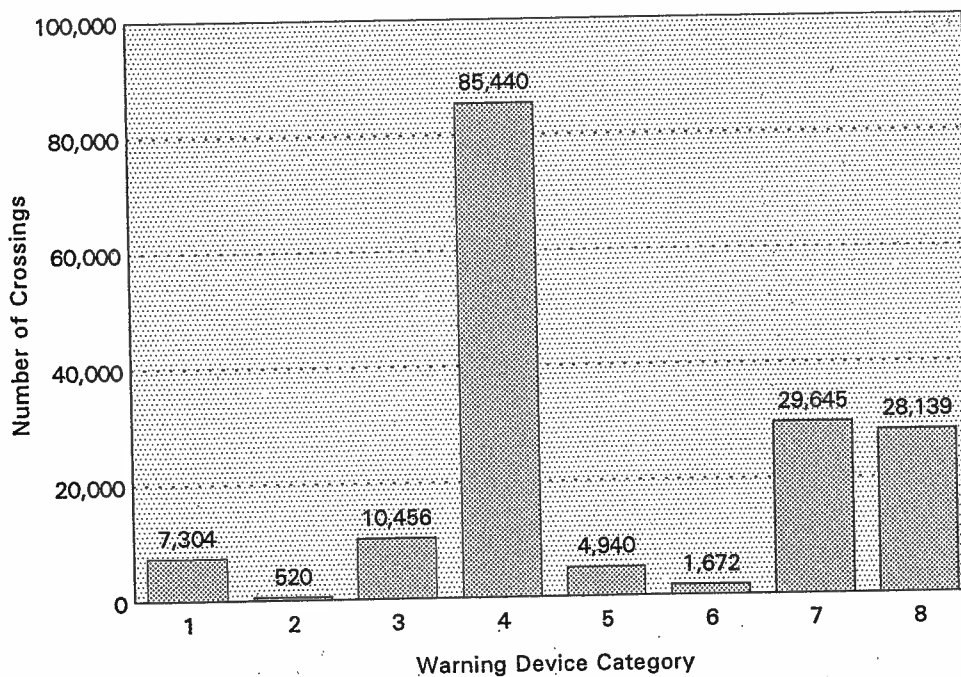


FIGURE 29. CROSSINGS BY WARNING DEVICE CATEGORY



1 = No signs or signals; 2 = Other signs; 3 = Stop Signs; 4 = Crossbucks; 5 = Special warning;  
6 = Highway signals, wigwags, bells; 7 = Flashing lights; 8 = Gates

FIGURE 30. CROSSINGS BY SMALLEST CROSSING ANGLE

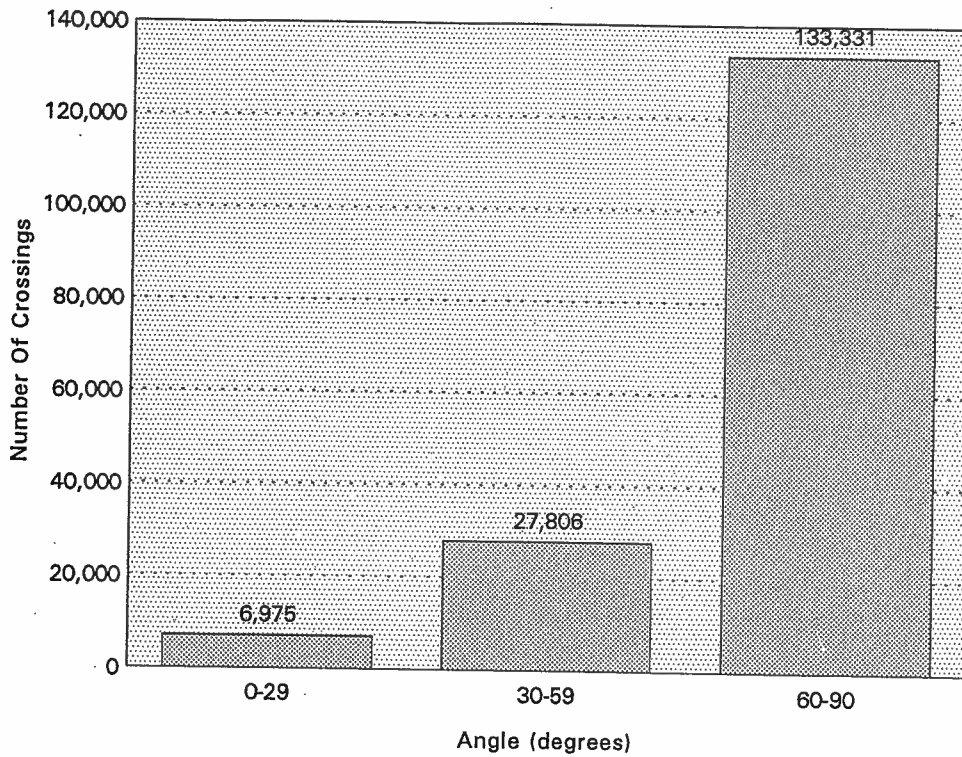
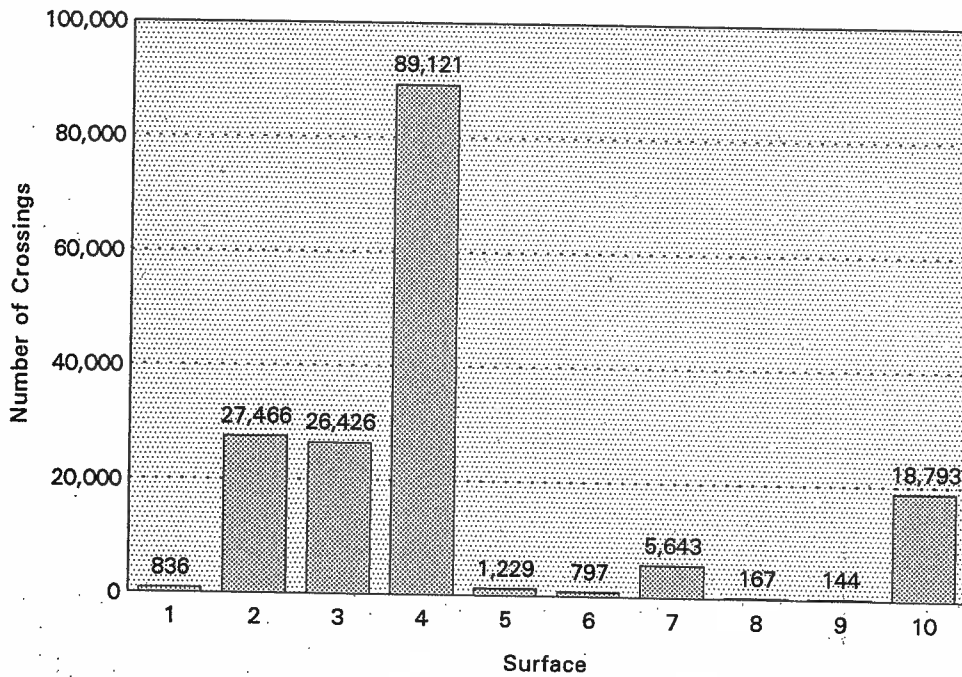
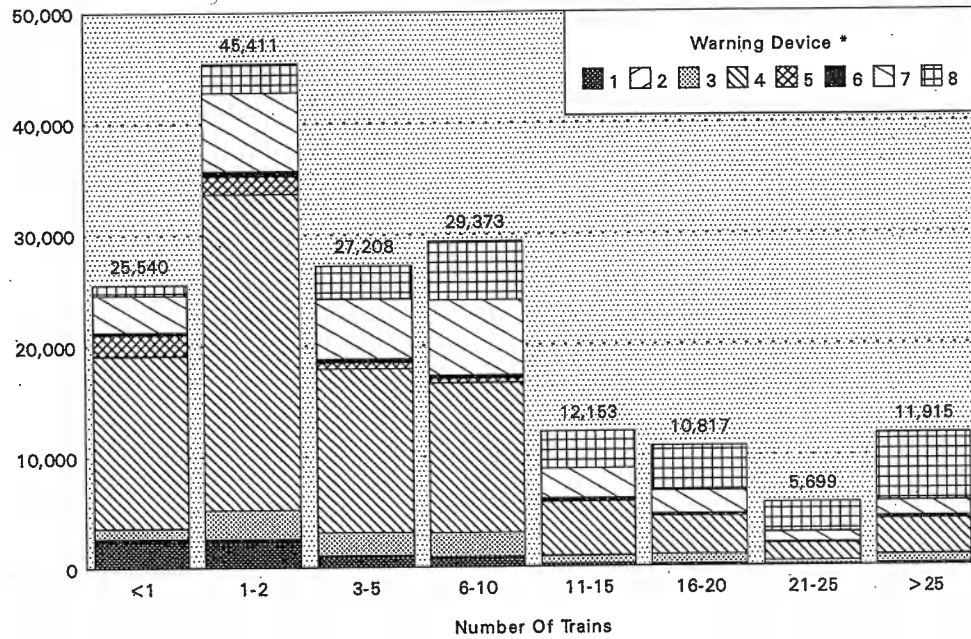


FIGURE 31. CROSSINGS BY CROSSING SURFACE



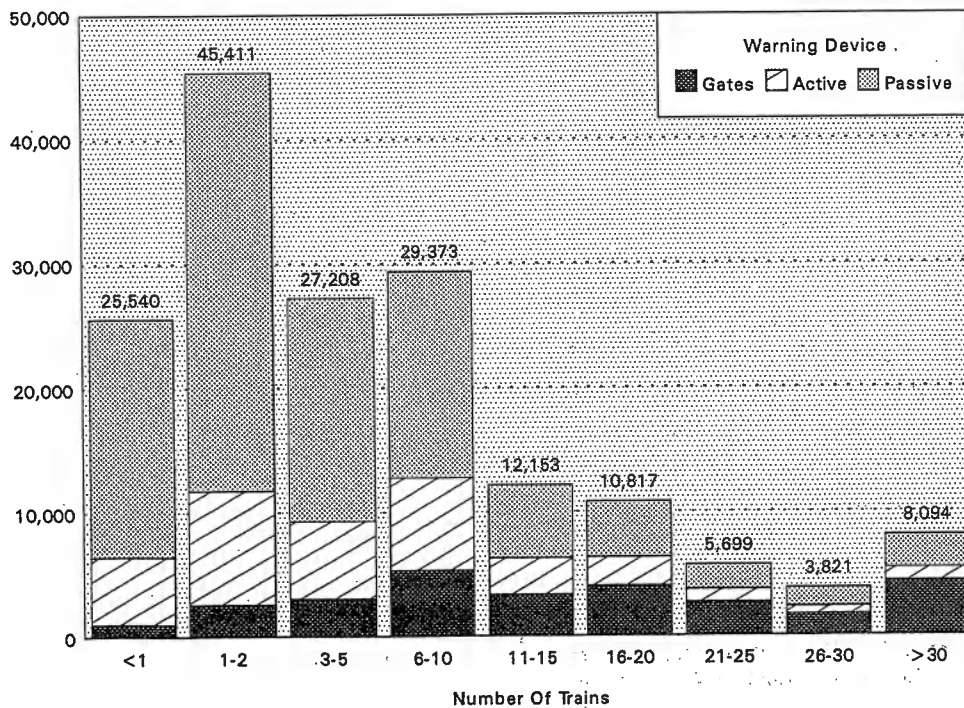
1 = Section timber; 2 = Full wood plank; 3 = Asphalt; 4 = Concrete slab; 5 = Concrete pavement; 6 = Rubber; 7 = Metal sections; 8 = Other metal; 9 = Unconsolidated; 10 = Other

**FIGURE 32. CROSSINGS BY NUMBER OF TRAINS PER DAY AND WARNING DEVICE CATEGORY**

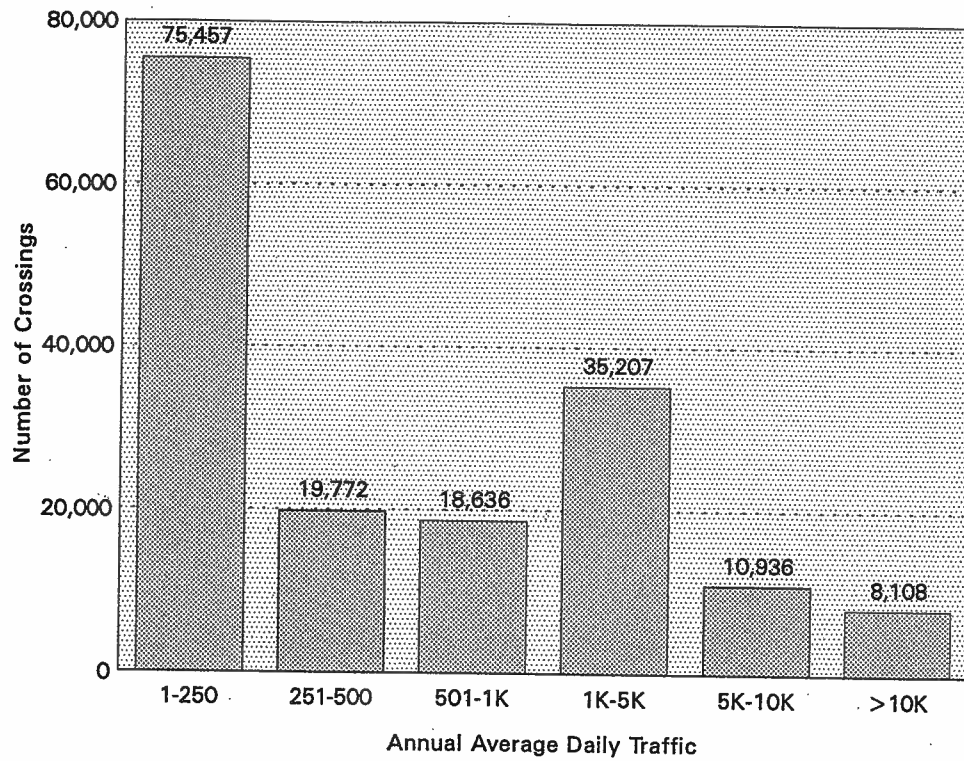


1 = No signs or signals; 2 = Other signs; 3 = Stop signs; 4 = Crossbucks;  
 5 = Special warning devices; 6 = Highway signals, wigwags, bells;  
 7 = Flashing lights; 8 = Gates

**FIGURE 34. CROSSINGS BY NUMBER OF TRAINS PER DAY AND TYPE OF WARNING DEVICE**



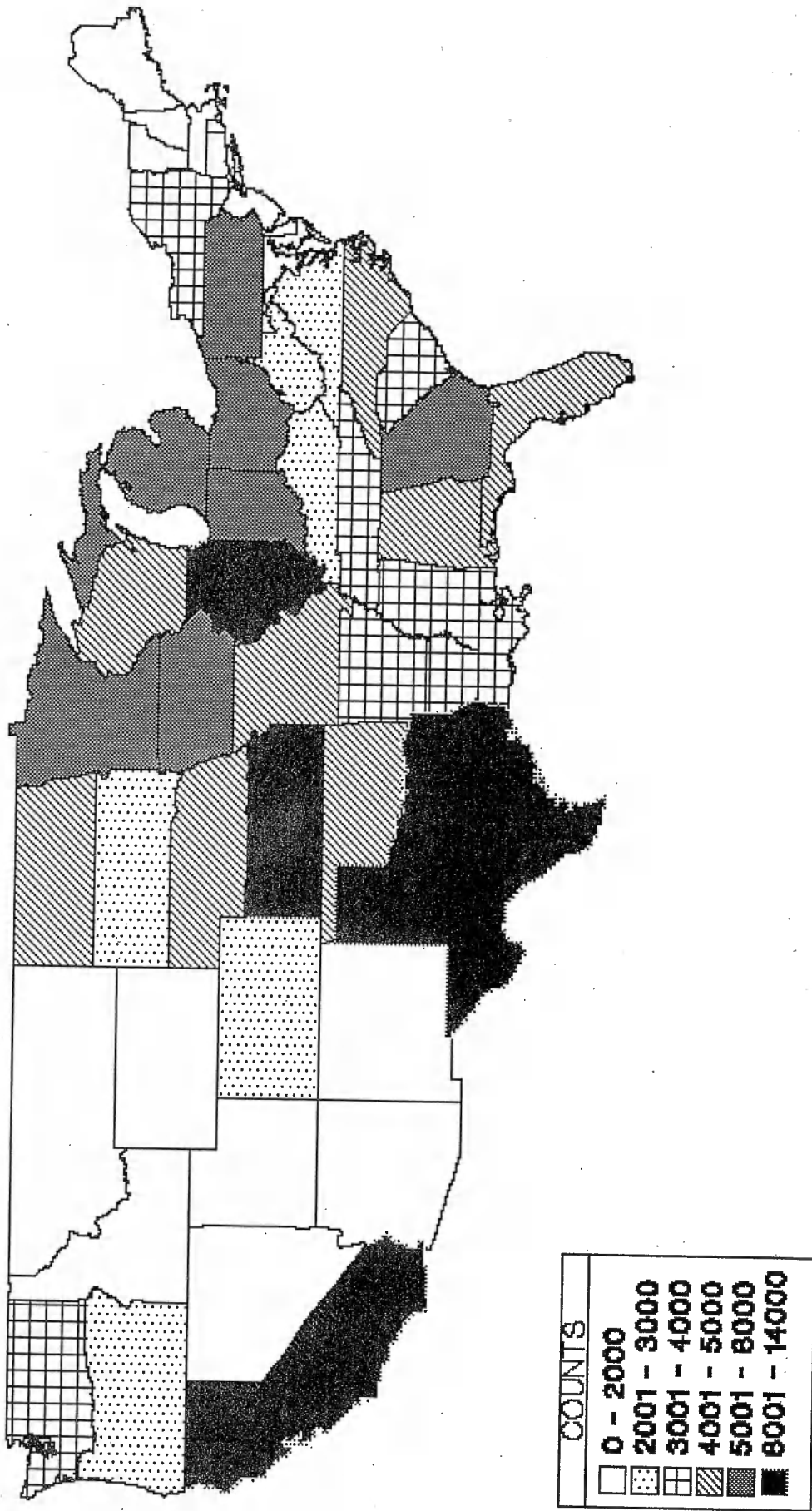
**FIGURE 35. CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC**



( M A P S )

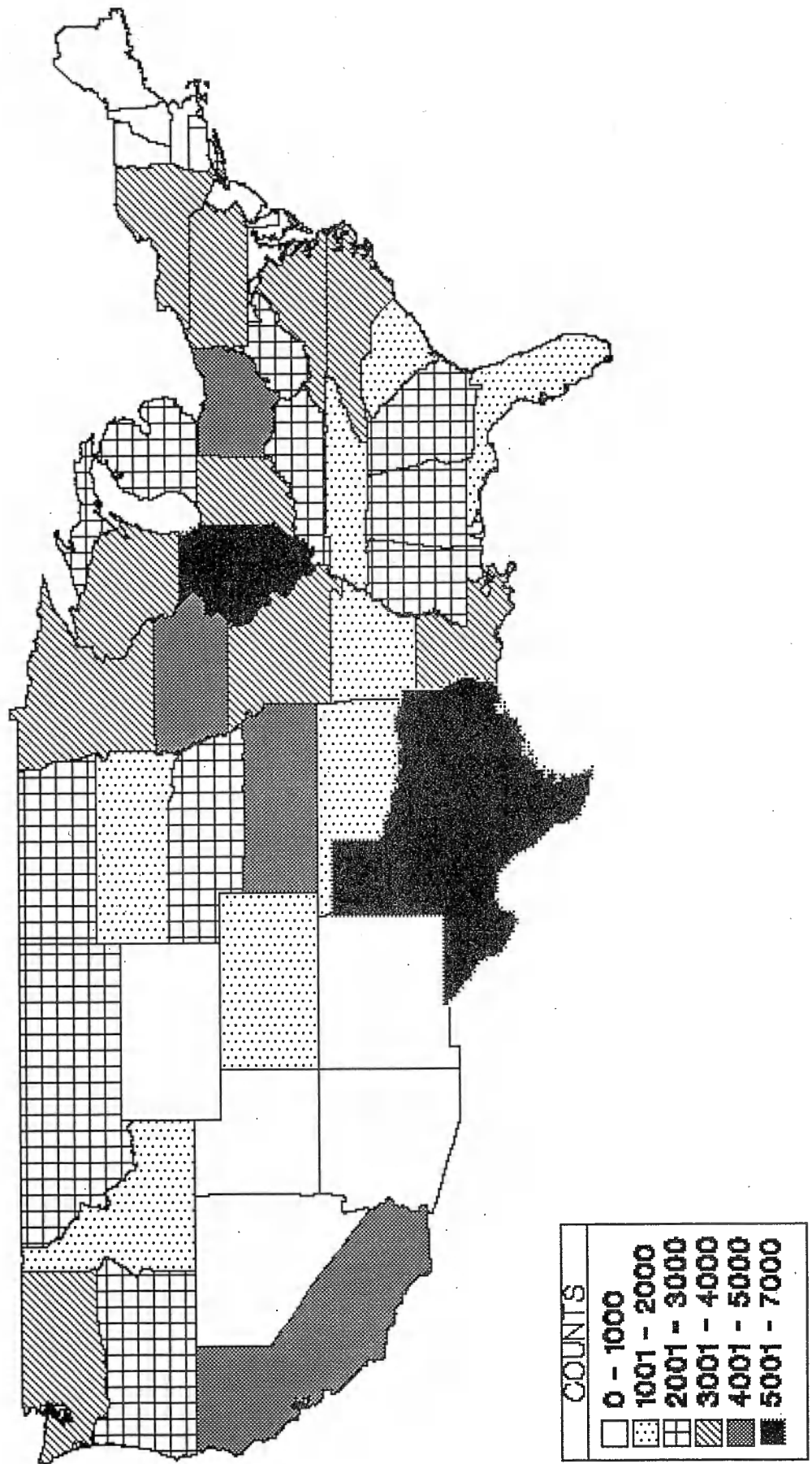
**HIGHWAY-RAIL CROSSING**

**FIGURE 37A. NUMBER OF PUBLIC CROSSINGS BY STATE, 1993**





**FIGURE 38A. NUMBER OF PRIVATE CROSSINGS BY STATE, 1993**



**LEFT**  
**BLANK**  
**INTENTIONALLY**

**( D A T A )**  
**HIGHWAY-RAIL**  
**CROSSING**  
**INVENTORY**

TABLE 33. TOTAL PUBLIC AND PRIVATE CROSSINGS BY STATE AND TYPE, 1993

State	Public At Grade	Public RR Under	Public RR Over	Private at Grade	Private Grade Separated	Pedestrian at Grade	Pedestrian Grade Separated	Total
Alabama	4,109	487	177	2,194	22	23	2	7,014
Alaska	227	11	6	108	1	8	4	365
Arizona	952	88	83	692	106	6	2	1,929
Arkansas	3,344	180	120	1,531	72	9	8	5,264
California	8,075	935	563	4,939	195	157	87	14,951
Colorado	2,151	198	118	1,486	21	7	7	3,988
Connecticut	370	323	252	261	37	0	31	1,274
Delaware	255	45	57	153	2	2	1	515
Dist Of Columbia	37	30	37	12	0	11	2	129
Florida	4,088	231	58	1,476	1	69	3	5,926
Georgia	6,321	550	253	2,894	7	38	5	10,068
Hawaii	6	0	0	0	0	0	0	6
Idaho	1,591	92	67	1,442	12	10	3	3,217
Illinois	10,341	921	1,911	5,841	176	312	84	19,586
Indiana	6,786	448	582	3,004	88	86	12	11,006
Iowa	5,306	472	328	4,299	50	47	11	10,513
Kansas	8,040	351	211	4,348	32	36	0	13,018
Kentucky	2,681	439	442	2,933	102	53	25	6,675
Louisiana	3,847	225	117	3,365	20	40	7	7,621
Maine	885	128	78	934	15	11	3	2,054
Maryland	700	315	204	746	24	9	17	2,015
Massachusetts	1,192	795	436	538	52	19	84	3,116
Michigan	5,816	331	406	2,813	24	109	20	9,519
Minnesota	5,319	456	346	3,149	18	54	24	9,366
Mississippi	3,030	223	112	2,090	14	14	2	5,485
Missouri	4,875	638	411	3,301	72	61	34	9,392
Montana	1,537	137	82	2,052	112	15	5	3,940
Nebraska	4,103	209	124	2,828	39	15	4	7,322
Nevada	255	50	38	240	11	3	0	597
New Hampshire	503	118	52	344	21	7	6	1,051
New Jersey	1,910	534	728	609	57	43	83	3,964
New Mexico	817	70	79	604	45	2	2	1,619
New York	3,314	1,354	1,099	3,213	200	65	232	9,477
North Carolina	4,894	503	287	3,669	17	47	19	9,436
North Dakota	4,705	78	84	2,110	16	18	4	7,015
Ohio	6,900	1,097	1,110	4,169	207	38	58	13,579
Oklahoma	4,654	257	192	1,780	57	16	2	6,958
Oregon	2,368	289	175	2,927	113	90	12	5,974
Pennsylvania	5,648	1,553	1,886	3,468	241	126	199	13,121
Rhode Island	128	107	38	71	7	0	5	356
South Carolina	3,249	374	122	1,473	1	15	2	5,236
South Dakota	2,141	88	46	1,357	54	5	1	3,692
Tennessee	3,419	499	457	1,977	50	27	11	6,440
Texas	12,950	858	788	6,614	141	33	16	21,400
Utah	1,020	117	48	802	2	4	3	1,996
Vermont	492	80	82	687	47	45	4	1,437
Virginia	2,215	605	455	3,250	116	51	20	6,712
Washington	3,023	370	311	3,211	109	93	20	7,137
West Virginia	2,019	266	350	2,412	104	79	18	5,248
Wisconsin	4,951	429	314	3,006	86	108	42	8,936
Wyoming	533	113	45	928	79	1	7	1,706
Puerto Rico	24	0	0	2	0	0	0	26
FINAL TOTALS	168,116	19,067	16,367	108,352	3,095	2,137	1,253	318,387

TABLE 34. TOTAL PUBLIC AND PRIVATE CROSSINGS BY RAILROAD AND TYPE, 1993

Railroad	Public At Grade	Public RR Under	Public RR Over	Private at Grade	Private Grade Separated	Pedestrian at Grade	Pedestrian Grade Separated	Total
Alaska Railroad Corp.	223	11	6	108	1	8	4	361
Allegheny and Eastern Railroad	111	10	2	82	2	3	1	211
Amtrak (Nat'l Railroad Passenger Corp.)	189	539	489	71	23	2	73	1,386
Arkansas & Missouri Railroad Co.	251	7	14	92	5	0	0	369
Arkansas Midland Railroad Co., Inc.	179	6	4	92	1	2	0	284
Atchison, Topeka & Santa Fe Railway Co.	6,983	641	593	3,957	197	53	22	12,446
Atlanta & Saint Andrews Bay Railway Co.	137	6	1	70	0	1	0	215
Austin & Northwestern Railroad	169	8	7	108	3	1	0	296
Bangor & Aroostook Railroad	165	12	23	385	0	7	0	592
Bessemer & Lake Erie Railroad Co.	140	35	49	96	3	2	0	325
Boston & Maine Corp.	865	431	203	418	52	14	37	2,020
Buffalo & Pittsburgh Railroad, Inc.	323	48	56	281	17	7	0	732
Burlington Northern Railroad Co.	19,262	1,520	1,172	12,699	374	260	64	35,351
Camas Prairie Railroad Co.	106	4	18	111	4	1	1	245
Canadian Pacific Railway Co.	49	12	15	182	6	39	1	304
Cedar Rapids & Iowa City Railway Co.	93	16	6	92	0	3	1	211
Cedar River Railroad Co.	160	1	2	104	0	0	0	267
Central Kansas Railway, Inc.	1,031	11	5	550	4	3	0	1,604
Central Michigan Railway Co.	332	19	6	187	1	7	0	552
Central Railroad Company Of Indianapolis	270	0	0	0	0	0	0	270
Central Vermont Railway, Inc.	196	61	56	243	15	2	8	581
Chehalis Western	86	27	11	96	6	2	0	228
Chicago & North Western Transportation Co.	5,703	554	707	4,187	151	110	51	11,463
Chicago Missouri & Western Railway	141	30	20	115	5	7	1	319
Chicago, Central & Pacific Railroad Co.	884	88	79	700	49	15	12	1,827
Columbus & Greenville Railway Co.	337	4	1	310	4	3	0	659
Consolidated Rail Corp.	13,512	3,307	3,531	7,661	416	175	272	28,874
CSX Transportation	18,714	2,484	1,796	11,465	287	363	107	35,216
Dakota, Minnesota & Eastern Railroad	809	21	33	555	38	2	0	1,458
Dakota, Missouri Valley & Western Railroad	287	2	0	159	0	1	0	449
Delaware & Hudson Railway Co.	311	81	93	445	30	16	9	985
Delta Southern Railroad Co.	92	1	1	119	0	0	0	213
Denver & Rio Grande Western Railroad Co.	865	137	67	678	4	3	4	1,758
Department of Defense - Other	272	3	5	236	1	5	0	522
Detroit & Mackinac Railway Co.	359	8	1	207	1	10	0	586
Duluth, Missabe & Iron Range Railway Co.	153	25	30	134	4	2	0	348
Eastern Idaho Railroad	356	7	4	271	2	0	0	640
Elgin, Joliet & Eastern Railway Co.	205	31	28	102	2	0	0	368
Escanaba & Lake Superior Railroad Co.	267	4	2	162	0	4	0	439
Florida Central Railroad Co.	154	3	5	55	0	12	0	229
Florida East Coast Railway Co.	714	33	6	114	0	13	0	880
Fox Valley & Western Ltd.	763	40	21	465	15	16	3	1,323
Gateway Western Railway	224	24	23	156	1	2	0	430
Georgia Central Railroad	219	9	4	87	0	2	0	321
Georgia Southwestern Railroad Division	282	19	3	166	1	1	0	472
Grainbelt Corp.	255	2	8	93	0	0	0	358
Grand Trunk Western Railroad Inc.	1,164	101	178	498	6	15	11	1,973
Great Western Railway Co.	86	3	1	127	0	0	1	218
Gulf And Mississippi Railroad Corp.	648	53	29	460	1	2	0	1,193
Hillsdale County Railway Company, Inc.	127	3	2	68	3	0	0	203
Houston Belt & Terminal Railway Co.	169	23	16	43	0	4	1	256
Huron & Eastern Railway	207	0	0	154	0	1	0	362
Idaho Northern & Pacific Railroad Co.	112	4	2	180	0	1	0	299
Illinois Central Railroad Co.	2,825	332	332	1,707	43	65	23	5,327
Indiana & Ohio Central Railroad, Inc.	116	19	19	88	7	0	0	249
Indiana Hi-Rail Cor.	236	5	2	99	7	2	0	351
Indiana Rail Road Co.	459	22	38	152	10	3	0	684
Iowa Interstate Railroad	479	60	43	320	5	3	1	911
Iowa Northern Railway Co.	205	8	5	119	0	0	0	337
Kankakee, Beaverville & Southern Railroad Co.	164	1	7	60	2	0	0	234
Kansas City Southern Railway Co.	1,008	104	84	485	26	6	4	1,717
Kansas City Terminal Railway Co.	115	48	26	101	0	1	0	291
Kansas Southwestern Railway	408	6	2	163	0	0	0	579
Kiamichi Railroad Company, Inc.	237	5	11	94	9	0	0	356
Kyle Railroad Co.	496	12	4	366	5	1	0	884
Lamoille Valley Railroad Co.	84	9	7	106	14	0	0	220
Long Island Rail Road	304	294	105	82	0	8	80	873
Louisiana & Arkansas Railway Co.	668	65	34	580	4	4	2	1,357

TABLE 34. TOTAL PUBLIC AND PRIVATE CROSSINGS BY RAILROAD AND TYPE, CONT. 1993

Railroad	Public			Private		Pedestrian		Total
	At Grade	Public RR Under	Public RR Over	at Grade	Private Grade Separated	at Grade	Pedestrian Grade Separated	
Louisiana & Delta Railroad	208	1	0	173	0	0	0	382
Maine Department Of Transportation	154	23	14	79	5	2	0	277
Maryland & Delaware Railroad Co.	92	1	0	137	0	0	1	231
Maryland Dept. Of Transportation	84	6	3	101	2	4	0	200
Mass. Bay Transportation Authority	75	80	60	48	6	3	18	290
Mid-Atlantic Railroad Company, Inc.	135	4	0	123	0	2	0	264
Mid-Michigan Railroad Co.	115	4	0	95	0	3	0	217
Midd States Port Authority	404	17	20	170	2	1	0	614
Midsouth Railroad Corporation	513	72	25	269	4	2	0	885
Missouri & Northern Arkansas Railroad Co.	410	35	24	353	5	1	0	828
Monongahela Railway Co.	64	14	41	93	0	1	0	213
Montana Rail Link	449	52	21	684	10	3	1	1,220
MNVA Railroad, Inc.	103	2	0	101	0	1	0	207
Nashville & Eastern Railroad	199	11	11	151	6	2	0	380
Nebraska Central Railroad	336	0	0	236	0	2	0	574
New Jersey Transit Rail Operations	373	197	296	97	11	19	45	1,038
New Orleans Lower Coast Railroad, Inc.	45	0	0	180	0	4	0	229
New Orleans Public Belt Railroad	100	6	8	156	6	2	0	278
New York City Trans. Authority (MTA)	30	143	42	15	9	0	39	278
New York, Susquehanna & Western Railroad Co.	265	21	9	223	10	3	1	532
Norfolk Southern Corp.	17,506	2,002	1,662	12,130	245	111	48	33,704
North Carolina Department Of Transportation	92	11	3	122	2	3	1	234
Northeast Kansas & Missouri	124	2	4	106	0	0	0	236
Northwestern Pacific Railroad Co.	119	26	4	179	9	5	2	344
Ohio Central Railroad Co.	125	15	5	148	9	0	1	303
Oklahoma Department Of Transportation	383	18	9	105	2	1	0	518
Oklahoma Kansas & Texas Railroad Co.	122	12	8	110	0	1	0	253
Paducah & Louisville Railway Co.	259	53	49	185	7	3	0	556
Pittsburgh & Lake Erie Railroad Co.	99	53	35	99	15	6	12	319
Prairie Trunk Railway	169	1	0	61	0	1	0	232
Providence & Worcester Railroad Co.	196	73	49	123	6	0	6	453
Rahway Valley Railroad Co.	216	7	7	54	0	0	0	284
Red River Valley & Western Railroad	761	5	1	316	0	0	0	1,083
Seminole Gulf Railroad	165	7	0	31	0	0	0	203
Soo Line Railroad Co.	4,295	364	368	2,737	48	67	26	7,905
South Carolina Central Railroad Co., Inc.	223	7	3	86	0	3	0	322
South Dakota Railroad Authority	321	9	2	282	2	1	0	617
South Kansas & Oklahoma Railroad Co.	359	12	15	245	3	2	0	636
South Orient Railroad Company, Ltd.	180	6	8	173	1	1	0	369
Southeastern Pennsylvania Transportation	262	114	174	53	22	10	40	675
Southern Pacific Transportation Co.	9,588	954	605	6,264	249	164	69	17,893
Southern Pacific, Chicago-St. Louis Corp.	268	18	27	92	3	32	1	441
Springfield Terminal Railway Co. (Vermont)	441	76	34	291	8	1	2	853
St. Louis Southwestern Railway Co.	2,036	114	78	783	29	2	0	3,042
State Subsidy	259	35	31	139	9	0	2	475
Tennessee Southern Railroad Co., Inc.	134	18	11	65	2	0	1	231
Terminal Railroad Association Of St. Louis	141	40	26	12	1	0	0	220
Texas & Oklahoma Railroad Co.	315	6	1	143	0	0	0	465
Texas Mexican Railway Co.	239	9	2	195	0	0	0	445
Texas Northeastern Division--Mid-Michigan	216	12	12	115	0	0	0	355
Toledo, Peoria & Western Railway Corp.	441	12	3	270	0	6	0	732
Tulare Valley Railroad Co.	324	2	5	232	3	4	0	570
Tuscola & Saginaw Bay Railroad Co., Inc.	568	20	7	243	2	10	1	851
Twin City & Western Railroad	144	4	10	107	1	0	0	266
Union Pacific Railroad Co.	16,633	1,445	905	10,811	175	112	65	30,146
Vermont Railway, Inc.	94	17	11	154	10	4	0	290
Washington Central Railroad Co.	356	17	13	344	2	0	0	732
Wheeling & Lake Erie Railway Co.	630	87	147	457	32	10	6	1,369
Wisconsin & Southern Railroad Co.	609	28	14	316	15	10	3	995
Wisconsin Central Ltd. (also Railway)	1,985	103	87	1,207	7	34	6	3,429
All Other Railroads	15,050	1,045	1,205	10,565	233	183	62	28,343
FINAL TOTALS	168,116	19,067	16,367	108,352	3,095	2,137	1,253	318,387

**TABLE 35. TOTAL OF CROSSINGS BY STATE AND LOCATION: URBAN OR RURAL, 1993**

State	Urban	Rural	Total
Alabama.....	1,910	2,199	4,109
Alaska.....	88	139	227
Arizona.....	474	478	952
Arkansas.....	1,301	2,043	3,344
California.....	5,882	2,193	8,075
Colorado.....	747	1,404	2,151
Connecticut.....	239	131	370
Delaware.....	61	194	255
Dist of Columbia.	37	---	37
Florida.....	2,374	1,714	4,088
Georgia.....	2,251	4,070	6,321
Hawaii.....	---	6	6
Idaho.....	267	1,324	1,591
Illinois.....	3,942	6,399	10,341
Indiana.....	2,917	3,869	6,786
Iowa.....	1,632	3,674	5,306
Kansas.....	1,404	6,636	8,040
Kentucky.....	740	1,941	2,681
Louisiana.....	1,703	2,144	3,847
Maine.....	239	646	885
Maryland.....	528	172	700
Massachusetts....	843	349	1,192
Michigan.....	2,380	3,436	5,816
Minnesota.....	1,494	3,825	5,319
Mississippi.....	1,138	1,892	3,030
Missouri.....	1,578	3,297	4,875
Montana.....	281	1,256	1,537
Nebraska.....	550	3,553	4,103
Nevada.....	62	193	255
New Hampshire....	221	282	503
New Jersey.....	1,362	548	1,910
New Mexico.....	240	577	817
New York.....	1,523	1,791	3,314
North Carolina...	2,023	2,871	4,894
North Dakota.....	252	4,453	4,705
Ohio.....	3,354	3,546	6,900
Oklahoma.....	317	4,337	4,654
Oregon.....	1,028	1,340	2,368
Pennsylvania.....	2,941	2,707	5,648
Rhode Island.....	123	5	128
South Carolina...	1,136	2,113	3,249
South Dakota.....	261	1,880	2,141
Tennessee.....	1,555	1,864	3,419
Texas.....	6,808	6,141	12,949
Utah.....	554	466	1,020
Vermont.....	166	326	492
Virginia.....	934	1,281	2,215
Washington.....	1,390	1,633	3,023
West Virginia....	436	1,583	2,019
Wisconsin.....	1,994	2,957	4,951
Wyoming.....	81	452	533
Puerto Rico.....	---	24	24
Unknown.....	---	---	---
Total.....	65,761	102,354	168,115

**TABLE 36. TOTAL CROSSINGS BY NUMBER OF MAIN AND OTHER TRACKS, 1993**

Other Tracks	Number of main tracks							Total
	0	1	2	3	4	5	>5	
0	9	99,274	10,172	290	82	5	5	109,837
1	16,249	22,126	2,853	92	18	---	1	41,339
2	3,602	6,824	1,092	64	18	2	1	11,603
3	991	1,976	346	32	14	1	---	3,360
4	280	635	148	12	8	3	1	1,087
5	120	249	71	5	2	1	1	449
>5	111	254	69	2	3	1	---	440
Total	21,362	131,338	14,751	497	145	13	9	168,115

**TABLE 37. TOTAL CROSSINGS BY NUMBER OF TRACKS AND WARNING DEVICE, 1993**

Warning device	Number of tracks						Total
	1	2	3	4	5	>5	
Gates.....	12,567	9,827	3,572	1,287	459	427	28,139
Flashing lights.....	20,955	5,766	1,909	625	205	185	29,645
Hwy. signals, wigwags, bells	1,010	425	156	47	20	14	1,672
Special warning devices.....	3,409	992	317	126	46	50	4,940
Stop signs.....	7,460	2,118	586	184	63	45	10,456
Crossbucks.....	64,207	15,445	4,038	1,145	345	260	85,440
Other signs.....	373	96	30	17	1	3	520
No signs or signals.....	5,543	1,231	350	91	49	40	7,304
Total.....	115,524	35,900	10,958	3,522	1,188	1,024	168,116

**TABLE 38. TOTAL CROSSINGS BY NUMBER OF TRACKS AND TRAFFIC LANES, 1993**

Traffic Lanes	Number of tracks						Total
	1	2	3	4	5	>5	
1	20,228	4,292	742	170	38	43	25,513
2	88,070	28,882	9,280	3,032	1,036	869	131,169
3	734	336	100	35	9	13	1,227
4	5,615	2,136	764	268	99	91	8,973
5	405	121	35	8	3	4	576
>5	471	133	37	9	3	4	657
Total	115,523	35,900	10,958	3,522	1,188	1,024	168,115



TABLE 39. TOTAL CROSSINGS BY NUMBER OF TRACKS AND STATE, 1993

State	Number of tracks						Total
	1	2	3	4	5	>5	
Alabama.....	2,953	732	288	76	27	33	4,109
Alaska.....	186	34	6	1	---	---	227
Arizona.....	701	170	62	15	3	1	952
Arkansas.....	2,276	730	228	64	28	18	3,344
California.....	5,550	1,586	570	192	90	87	8,075
Colorado.....	1,495	443	145	42	12	14	2,151
Connecticut.....	299	59	10	---	2	---	370
Delaware.....	215	29	7	2	2	---	255
Dist of Columbia.....	28	7	2	---	---	---	37
Florida.....	2,406	1,116	362	100	53	51	4,088
Georgia.....	4,652	1,157	330	116	29	37	6,321
Hawaii.....	6	---	---	---	---	---	6
Idaho.....	1,112	306	114	39	10	10	1,591
Illinois.....	6,305	2,804	814	261	95	62	10,341
Indiana.....	4,724	1,548	352	109	31	22	6,786
Iowa.....	3,522	1,150	426	133	37	38	5,306
Kansas.....	5,537	1,640	555	195	60	53	8,040
Kentucky.....	1,787	655	160	54	12	13	2,681
Louisiana.....	2,821	710	213	62	18	23	3,847
Maine.....	717	131	25	10	1	1	885
Maryland.....	527	131	23	12	2	5	700
Massachusetts.....	941	187	41	15	4	4	1,192
Michigan.....	4,115	1,220	290	113	38	40	5,816
Minnesota.....	3,748	1,008	366	124	38	35	5,319
Mississippi.....	2,079	618	207	78	22	26	3,030
Missouri.....	2,883	1,310	470	132	42	38	4,875
Montana.....	1,006	352	127	26	12	14	1,537
Nebraska.....	2,683	928	312	102	45	33	4,103
Nevada.....	167	61	16	4	2	5	255
New Hampshire.....	427	66	7	2	1	---	503
New Jersey.....	1,370	407	98	18	9	8	1,910
New Mexico.....	572	171	46	17	4	7	817
New York.....	2,307	764	164	50	15	14	3,314
North Carolina.....	3,615	857	272	90	30	30	4,894
North Dakota.....	3,770	686	195	40	13	1	4,705
Ohio.....	3,729	2,157	641	245	76	52	6,900
Oklahoma.....	3,012	1,069	350	139	48	36	4,654
Oregon.....	1,710	450	163	32	12	1	2,368
Pennsylvania.....	3,683	1,379	361	144	44	37	5,648
Rhode Island.....	86	36	6	---	---	---	128
South Carolina.....	2,463	621	119	20	16	10	3,249
South Dakota.....	1,689	289	115	35	6	7	2,141
Tennessee.....	2,259	788	245	77	25	25	3,419
Texas.....	9,349	2,449	719	267	87	78	12,949
Utah.....	694	208	75	18	18	7	1,020
Vermont.....	400	70	16	4	---	2	492
Virginia.....	1,443	538	165	50	12	7	2,215
Washington.....	1,996	626	272	86	22	21	3,023
West Virginia.....	1,449	418	117	21	5	9	2,019
Wisconsin.....	3,687	909	250	71	26	8	4,951
Wyoming.....	353	115	41	19	4	1	533
Puerto Rico.....	19	5	---	---	---	---	24
Unknown.....	---	---	---	---	---	---	---
Total.....	115,523	35,900	10,958	3,522	1,188	1,024	168,115

**TABLE 40. TOTAL CROSSINGS BY TYPE OF HIGHWAY SYSTEM AND STATE**

State	Highway System					Total
	01	02	03	04	08	
Alabama.....	---	192	397	311	3,209	4,109
Alaska.....	7	10	15	21	174	227
Arizona.....	12	30	178	76	656	952
Arkansas.....	2	137	1,017	157	2,031	3,344
California.....	---	951	1,047	602	5,475	8,075
Colorado.....	---	86	380	102	1,583	2,151
Connecticut.....	---	25	102	31	212	370
Delaware.....	---	31	5	108	111	255
Dist of Columbia.....	---	4	---	2	31	37
Florida.....	1	280	741	133	2,933	4,088
Georgia.....	---	389	168	786	4,978	6,321
Hawaii.....	---	---	---	---	6	6
Idaho.....	---	49	112	145	1,285	1,591
Illinois.....	1	625	1,393	784	7,538	10,341
Indiana.....	---	243	434	1,170	4,939	6,786
Iowa.....	3	292	710	485	3,816	5,306
Kansas.....	---	308	401	1,083	6,248	8,040
Kentucky.....	2	79	239	243	2,118	2,681
Louisiana.....	5	147	399	295	3,001	3,847
Maine.....	---	73	22	100	690	885
Maryland.....	---	15	23	12	650	700
Massachusetts.....	---	116	316	121	639	1,192
Michigan.....	9	236	672	896	4,003	5,816
Minnesota.....	1	194	119	832	4,173	5,319
Mississippi.....	---	137	426	306	2,161	3,030
Missouri.....	3	93	229	584	3,966	4,875
Montana.....	---	59	70	107	1,301	1,537
Nebraska.....	---	201	245	482	3,175	4,103
Nevada.....	---	15	13	21	206	255
New Hampshire.....	---	7	148	43	305	503
New Jersey.....	---	68	197	158	1,487	1,910
New Mexico.....	---	21	61	57	678	817
New York.....	---	198	27	570	2,519	3,314
North Carolina.....	---	113	207	364	4,210	4,894
North Dakota.....	3	178	88	476	3,960	4,705
Ohio.....	---	285	1,025	621	4,969	6,900
Oklahoma.....	---	143	300	391	3,820	4,654
Oregon.....	---	135	277	269	1,687	2,368
Pennsylvania.....	131	560	1,036	801	3,120	5,648
Rhode Island.....	---	6	44	14	64	128
South Carolina.....	1	204	198	405	2,441	3,249
South Dakota.....	---	98	90	252	1,701	2,141
Tennessee.....	---	108	473	122	2,716	3,419
Texas.....	82	107	169	50	12,541	12,949
Utah.....	1	15	5	134	865	1,020
Vermont.....	---	35	29	63	365	492
Virginia.....	---	93	314	368	1,440	2,215
Washington.....	---	107	172	415	2,329	3,023
West Virginia.....	---	131	44	356	1,488	2,019
Wisconsin.....	---	320	773	417	3,441	4,951
Wyoming.....	---	27	32	38	436	533
Puerto Rico.....	---	6	---	2	16	24
Unknown.....	---	---	---	---	---	---
Total.....	264	7,982	15,582	16,381	127,906	168,115

HIGHWAY SYSTEM CODES

CODE SYSTEM

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- 01 Interstate
- 03 Federal-aid urban
- 08 Non-federal-aid

CODE SYSTEM

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- 02 Federal-aid primary
- 04 Federal-aid secondary

**TABLE 41. TOTAL CROSSINGS BY HIGHWAY SYSTEM GROUP AND STATE, 1993**

State	On-State	Off-State	Total
Alabama.....	285	3,824	4,109
Alaska.....	81	146	227
Arizona.....	52	900	952
Arkansas.....	556	2,788	3,344
California.....	330	7,745	8,075
Colorado.....	246	1,905	2,151
Connecticut.....	83	287	370
Delaware.....	238	17	255
Dist of Columbia.	36	1	37
Florida.....	459	3,629	4,088
Georgia.....	736	5,585	6,321
Hawaii.....	---	6	6
Idaho.....	117	1,474	1,591
Illinois.....	1,294	9,047	10,341
Indiana.....	614	6,172	6,786
Iowa.....	297	5,009	5,306
Kansas.....	422	7,618	8,040
Kentucky.....	771	1,910	2,681
Louisiana.....	864	2,983	3,847
Maine.....	173	712	885
Maryland.....	115	585	700
Massachusetts....	45	1,147	1,192
Michigan.....	339	5,477	5,816
Minnesota.....	293	5,026	5,319
Mississippi.....	372	2,658	3,030
Missouri.....	705	4,170	4,875
Montana.....	234	1,303	1,537
Nebraska.....	309	3,794	4,103
Nevada.....	56	199	255
New Hampshire....	112	391	503
New Jersey.....	194	1,716	1,910
New Mexico.....	180	637	817
New York.....	346	2,968	3,314
North Carolina...	3,130	1,764	4,894
North Dakota.....	219	4,486	4,705
Ohio.....	935	5,965	6,900
Oklahoma.....	360	4,294	4,654
Oregon.....	142	2,226	2,368
Pennsylvania.....	1,811	3,837	5,648
Rhode Island.....	46	82	128
South Carolina...	2,298	951	3,249
South Dakota.....	146	1,995	2,141
Tennessee.....	304	3,115	3,419
Texas.....	2,109	10,840	12,949
Utah.....	109	911	1,020
Vermont.....	113	379	492
Virginia.....	1,457	758	2,215
Washington.....	168	2,855	3,023
West Virginia....	1,240	779	2,019
Wisconsin.....	392	4,559	4,951
Wyoming.....	73	460	533
Puerto Rico.....	19	5	24
Unknown.....	---	---	---
Total.....	26,025	142,090	168,115

**TABLE 42. TOTAL CROSSINGS BY FUNCTIONAL CLASSIFICATION OF ROAD, 1993**

Rural	Crossings	Urban	Crossings
Interstate.....	36	Interstate.....	148
Other principal arterial	1,204	Other freeway/expressway	377
Minor arterial.....	3,835	Other principal arterial	5,960
Major collector.....	11,403	Minor arterial.....	10,642
Minor collector.....	9,587	Collector.....	11,035
Local.....	76,289	Local.....	37,599
Total.....	102,354	Total.....	65,761

**TABLE 43. TOTAL CROSSINGS BY NUMBER OF TRAFFIC LANES AND STATE, 1993**

State	Number of Lanes						Total
	1	2	3	4	5	>5	
Alabama.....	791	3,076	23	200	8	11	4,109
Alaska.....	12	197	2	14	2	---	227
Arizona.....	13	776	14	105	23	21	952
Arkansas.....	735	2,521	16	67	4	1	3,344
California.....	414	5,567	177	1,554	152	211	8,075
Colorado.....	168	1,800	22	144	11	6	2,151
Connecticut.....	5	330	16	17	2	---	370
Delaware.....	3	234	4	13	---	1	255
Dist of Columbia	1	30	1	2	1	2	37
Florida.....	161	3,371	82	368	32	74	4,088
Georgia.....	1,212	4,845	29	217	11	7	6,321
Hawaii.....	---	6	---	---	---	---	6
Idaho.....	380	1,150	8	50	1	2	1,591
Illinois.....	2,082	7,523	59	640	15	22	10,341
Indiana.....	922	5,495	55	285	17	12	6,786
Iowa.....	623	4,463	36	178	5	1	5,306
Kansas.....	1,912	5,828	12	284	2	2	8,040
Kentucky.....	838	1,789	6	48	---	---	2,681
Louisiana.....	598	3,018	20	185	13	13	3,847
Maine.....	44	826	2	13	---	---	885
Maryland.....	76	565	8	44	3	4	700
Massachusetts....	43	1,084	8	56	1	---	1,192
Michigan.....	350	4,844	74	464	51	33	5,816
Minnesota.....	882	4,160	17	255	3	2	5,319
Mississippi.....	382	2,536	9	98	2	3	3,030
Missouri.....	1,214	3,524	11	118	5	3	4,875
Montana.....	147	1,362	2	23	2	1	1,537
Nebraska.....	875	3,167	6	54	---	1	4,103
Nevada.....	79	152	1	22	---	1	255
New Hampshire....	32	449	2	17	2	1	503
New Jersey.....	101	1,663	12	128	---	6	1,910
New Mexico.....	267	507	1	35	3	4	817
New York.....	308	2,872	19	110	2	3	3,314
North Carolina...	275	4,373	36	188	12	10	4,894
North Dakota....	1,101	3,579	1	23	1	---	4,705
Ohio.....	834	5,743	48	262	5	8	6,900
Oklahoma.....	895	3,493	5	254	4	3	4,654
Oregon.....	272	1,941	47	81	24	3	2,368
Pennsylvania.....	865	4,456	119	180	2	26	5,648
Rhode Island....	2	102	---	24	---	---	128
South Carolina...	387	2,643	14	184	16	5	3,249
South Dakota....	643	1,452	---	39	4	3	2,141
Tennessee.....	452	2,744	31	153	32	7	3,419
Texas.....	2,270	9,354	67	1,094	58	106	12,949
Utah.....	190	767	1	58	1	3	1,020
Vermont.....	108	372	5	7	---	---	492
Virginia.....	29	2,048	24	93	11	10	2,215
Washington.....	267	2,423	55	239	31	8	3,023
West Virginia....	968	1,033	7	9	1	1	2,019
Wisconsin.....	175	4,499	11	249	1	16	4,951
Wyoming.....	109	394	2	28	---	---	533
Puerto Rico.....	1	23	---	---	---	---	24
Unknown.....	---	---	---	---	---	---	---
Total.....	25,513	131,169	1,227	8,973	576	657	168,115

**TABLE 44. CROSSINGS BY NUMBER OF TRAFFIC LANES AND WARNING DEVICE, 1993**

Warning device	Number of Traffic Lanes						Total
	1	2	3	4	5	>5	
Gates.....	714	22,968	458	3,391	293	315	28,139
Flashing lights.....	747	25,014	349	3,130	199	206	29,645
Hwy. signals, wigwags, bells	128	1,269	45	188	14	28	1,672
Special warning devices.....	329	4,047	111	401	27	25	4,940
Stop signs.....	1,719	8,572	30	127	2	6	10,456
Crossbucks.....	19,955	63,790	181	1,421	31	62	85,440
Other signs.....	127	373	2	16	---	2	520
No signs or signals.....	1,794	5,137	51	299	10	13	7,304
Total.....	25,513	131,170	1,227	8,973	576	657	168,116

**TABLE 45. TOTAL CROSSINGS BY WARNING DEVICE CATEGORY AND STATE, 1993**

State	Warning Device Category								Total
	Gates	Flashing Lights	Hwy.Sig. Wigwags Bells	Special	Stop Signs	Cross-Bucks	Other Signs	No Signs or Signals	
Alabama.....	269	635	20	51	948	1,811	7	368	4,109
Alaska.....	16	61	---	7	29	105	---	9	227
Arizona.....	346	74	3	57	100	346	---	26	952
Arkansas.....	297	464	25	78	166	2,176	---	138	3,344
California.....	3,122	1,080	308	114	342	2,919	15	175	8,075
Colorado.....	292	288	39	36	241	1,158	3	94	2,151
Connecticut.....	98	141	5	24	50	33	---	19	370
Delaware.....	44	148	---	26	2	28	---	7	255
Dist of Columbia.	---	4	---	4	10	15	1	3	37
Florida.....	2,050	692	14	98	158	1,002	7	67	4,088
Georgia.....	1,465	379	17	165	763	3,188	7	337	6,321
Hawaii.....	---	---	---	---	1	5	---	---	6
Idaho.....	96	201	10	8	522	702	1	51	1,591
Illinois.....	2,041	2,646	130	220	81	4,821	4	398	10,341
Indiana.....	1,133	1,709	102	177	665	2,852	8	140	6,786
Iowa.....	595	999	31	46	441	3,116	1	77	5,306
Kansas.....	763	711	64	193	256	5,895	2	156	8,040
Kentucky.....	360	826	13	60	43	1,207	---	172	2,681
Louisiana.....	380	736	16	45	282	2,083	14	291	3,847
Maine.....	71	382	1	83	18	330	---	---	885
Maryland.....	96	204	21	32	34	268	6	39	700
Massachusetts....	197	462	30	212	5	232	3	51	1,192
Michigan.....	800	1,474	40	143	799	2,476	4	80	5,816
Minnesota.....	541	646	10	31	692	3,276	2	121	5,319
Mississippi.....	121	454	14	53	877	1,235	11	265	3,030
Missouri.....	471	1,008	68	94	135	2,861	1	237	4,875
Montana.....	160	188	1	13	82	1,061	1	31	1,537
Nebraska.....	610	284	11	15	284	2,765	---	134	4,103
Nevada.....	100	21	1	1	5	125	---	2	255
New Hampshire....	31	146	11	108	50	133	7	17	503
New Jersey.....	402	661	22	275	15	419	2	114	1,910
New Mexico.....	177	96	5	9	14	490	5	21	817
New York.....	1,377	653	74	254	17	840	21	78	3,314
North Carolina...	982	747	14	218	46	2,448	15	424	4,894
North Dakota.....	337	123	1	1	79	3,988	---	176	4,705
Ohio.....	1,434	1,513	49	80	173	3,533	5	113	6,900
Oklahoma.....	376	738	24	114	109	3,181	8	104	4,654
Oregon.....	549	141	47	91	456	913	45	126	2,368
Pennsylvania.....	734	1,266	112	661	142	1,980	284	469	5,648
Rhode Island.....	15	33	19	23	7	9	---	22	128
South Carolina...	533	530	---	194	314	1,630	1	47	3,249
South Dakota.....	18	172	2	---	28	1,845	---	76	2,141
Tennessee.....	281	632	15	216	151	1,540	2	582	3,419
Texas.....	2,307	2,044	72	110	233	7,524	14	646	12,950
Utah.....	154	174	5	85	63	457	5	77	1,020
Vermont.....	28	195	3	40	24	201	---	1	492
Virginia.....	652	507	16	121	7	817	4	91	2,215
Washington.....	455	431	28	52	119	1,655	2	281	3,023
West Virginia....	203	437	5	37	39	1,051	2	245	2,019
Wisconsin.....	453	1,362	149	146	306	2,450	---	85	4,951
Wyoming.....	103	126	4	1	33	245	---	21	533
Puerto Rico.....	4	1	1	18	---	---	---	---	24
Unknown.....	---	---	---	---	---	---	---	---	---
Total.....	28,139	29,645	1,672	4,940	10,456	85,440	520	7,304	168,116

**TABLE 46. TOTAL CROSSINGS BY WARNING DEVICE CATEGORY  
AND RAILROAD, 1993**

Railroad	Gates	Flashing Lights	Hwy. Sig.		Stop Signs	Cross- Bucks	Other Signs	No Signs Or		Total
			Wigwags Bells	Special				Signals		
ARR	Alaska Railroad Corporation	16	61	0	7	29	102	0	8	223
ALY	Allegheny and Eastern Railroad	8	30	1	0	9	51	8	4	111
ATK	Amtrak (National Railroad Passenger Corpora	144	10	0	5	6	15	4	5	189
AM	Arkansas & Missouri Railroad Company	5	33	4	3	42	154	0	10	251
AKMD	Arkansas Midland Railroad Company, Incorpor	2	29	5	3	2	125	0	13	179
ATSF	Atchison, Topeka & Santa Fe Railway Company	2,024	887	74	288	86	3,592	5	27	6,983
ASAB	Atlanta & Saint Andrews Bay Railway Company	21	34	0	0	24	54	3	1	137
AUNW	Austin & Northwestern Railroad	30	26	1	0	1	98	0	13	169
BAR	Bangor & Aroostook Railroad	4	89	0	8	11	53	0	0	165
BLE	Bessemer & Lake Erie Railroad Company	36	29	0	2	0	71	0	2	140
BM	Boston & Maine Corporation	174	198	17	174	27	224	4	47	865
BPRR	Buffalo & Pittsburgh Railroad, Incorporated	37	74	4	11	5	185	1	6	323
BN	Burlington Northern Railroad Company	2,666	2,448	80	213	1,101	12,267	14	473	19,262
CSP	Camas Prairie Railroad Company	5	7	0	0	11	78	0	5	106
CP	Canadian Pacific Railway Company	1	30	0	0	1	17	0	0	49
CIC	Cedar Rapids & Iowa City Railway Company	1	34	0	7	1	44	0	6	93
CEDR	Cedar River Railroad Company	1	23	1	0	7	128	0	0	160
CKRY	Central Kansas Railway, Incorporated	25	68	4	67	14	852	0	1	1,031
CMGN	Central Michigan Railway Company	13	120	5	4	53	133	0	4	332
CERA	Central Railroad Company Of Indianapolis	18	82	6	0	9	126	1	28	270
CV	Central Vermont Railway, Incorporated	26	108	1	1	14	43	1	2	196
CHWE	Chehalis Western	1	33	1	0	2	49	0	0	86
CNW	Chicago & North Western Transportation Comp	701	1,151	129	63	245	3,245	1	168	5,703
CMNW	Chicago Missouri & Western Railway	2	32	12	0	1	88	0	6	141
CC	Chicago, Central & Pacific Railroad Company	69	258	12	29	41	451	0	24	884
CAGY	Columbus & Greenville Railway Company	3	51	0	5	130	141	0	7	337
CR	Consolidated Rail Corporation	2,947	3,576	186	1,075	504	4,222	263	739	13,512
CSX	CSX Transportation	4,452	4,023	87	568	1,402	7,322	20	840	18,714
DME	Dakota, Minnesota & Eastern Railroad	6	115	3	0	50	605	0	30	809
DMVW	Dakota, Missouri Valley & Western Railroad,	1	6	1	1	5	266	0	7	287
DH	Delaware & Hudson Railway Company	143	83	3	1	3	71	5	2	311
DSRR	Delta Southern Railroad Company	0	9	0	0	0	81	0	2	92
DRGW	Denver & Rio Grande Western Railroad Compan	110	173	2	8	83	442	3	44	865
DOD	Department of Defense - Other	25	53	1	51	5	112	15	10	272
DM	Detroit & Mackinac Railway Company	0	57	3	0	91	208	0	0	359
DMIR	Duluth, Missabe & Iron Range Railway Compan	8	22	0	2	31	88	2	0	153
EIRR	Eastern Idaho Railroad	22	45	1	0	131	150	0	7	356
EJE	Elgin, Joliet & Eastern Railway Company	77	69	2	10	3	44	0	0	205
ELS	Esplanade & Lake Superior Railroad Company	4	64	1	45	4	146	1	2	267
FCEN	Florida Central Railroad Company	44	17	0	1	6	85	0	1	154
FEC	Florida East Coast Railway Company	599	30	0	27	3	46	0	9	714
FVW	Fox Valley & Western Ltd.	33	257	26	20	63	354	0	10	763
GWWR	Gateway Western Railway	7	44	20	0	7	142	0	4	224
GC	Georgia Central Railroad	36	11	3	0	37	132	0	0	219
GSWR	Georgia Southwestern Railroad Division	30	16	4	0	35	186	0	11	282
GNBC	Grainbelt Corporation	0	20	0	0	0	234	0	1	255
GTW	Grand Trunk Western Railroad Incorporated	386	263	4	46	219	243	0	3	1,164
GWR	Great Western Railway Company	2	6	1	0	5	71	0	1	86
GSMR	Gulf And Mississippi Railroad Corporation	1	37	0	1	92	466	2	49	648
HCRC	Hillsdale County Railway Company, Incorpora	0	25	1	0	6	95	0	0	127
HBT	Houston Belt & Terminal Railway Company	61	29	1	0	2	59	0	17	169
HESR	Huron & Eastern Railway	2	18	0	0	14	170	0	3	207
INPR	Idaho Northern & Pacific Railroad Company	0	7	1	0	44	56	0	4	112
IC	Illinois Central Railroad Company	353	608	16	67	434	1,155	3	189	2,825
IOCR	Indiana & Ohio Central Railroad, Incorporat	11	21	0	0	0	84	0	0	116
IHRC	Indiana Hi-Rail Corporation	10	47	9	0	10	155	1	4	236
INRD	Indiana Rail Road Company	11	110	28	0	75	224	0	11	459
IAIS	Iowa Interstate Railroad	96	103	8	0	76	196	0	0	479
IANR	Iowa Northern Railway Company	6	46	1	0	40	106	0	6	205
KBSR	Kankakee, Beaverville & Southern Railroad C	5	37	5	0	5	112	0	0	164
KCS	Kansas City Southern Railway Company	121	173	2	1	12	631	4	64	1,008
KCT	Kansas City Terminal Railway Company	2	18	2	0	0	84	1	8	115
KSW	Kansas Southwestern Railway	11	36	0	0	0	357	0	4	408
KRR	Kiamichi Railroad Company, Incorporated	1	22	0	3	16	193	0	2	237
KYLE	Kyle Railroad Company	0	25	1	2	29	429	0	10	496
LVRC	Lamoille Valley Railroad Company	1	22	0	0	0	61	0	0	84
LI	Long Island Rail Road	298	0	0	0	0	6	0	0	304
LA	Louisiana & Arkansas Railway Company	57	140	0	0	36	412	0	23	668
LDRR	Louisiana & Delta Railroad	22	9	1	0	26	123	0	27	208
MDTT	Maine Department Of Transportation	6	70	0	15	2	61	0	0	154
MDDE	Maryland & Delaware Railroad Company	0	17	0	0	1	66	1	7	92
MDT	Maryland Dept. Of Transportation	3	19	7	7	11	30	0	7	84
XMBT	Mass. Bay Transporatation Authority	7	51	1	14	0	2	0	0	75

**TABLE 46. TOTAL CROSSINGS BY WARNING DEVICE CATEGORY  
AND RAILROAD, CONT., 1993**

Railroad	Gates	Flashing Lights	Hwy. Sig.		Stop Signs	Cross- Bucks	Other Signs	No Signs Or Signal's		Total
			Bells	Special						
MRR	Mid-Atlantic Railroad Company, Incorporated	6	9	0	3	13	104	0	0	135
MMRR	Mid-Michigan Railroad Company	4	24	4	0	17	65	0	1	115
MSPA	Midd States Port Authority	14	31	1	0	12	340	0	6	404
MSRC	Midsouth Railroad Corporation (USE CODE KC	8	88	3	1	129	222	0	62	513
MNA	Missouri & Northern Arkansas Railroad Compa	26	87	5	13	12	256	0	11	410
MGA	Monongahela Railway Company	0	13	0	0	0	50	0	1	64
MRL	Montana Rail Link	52	68	1	0	40	281	0	7	449
MNVA	MNVA Railroad, Incorporated	0	2	0	0	22	76	0	3	103
NERR	Nashville & Eastern Railroad	0	31	0	3	5	133	0	27	199
NCRRC	Nebraska Central Railroad	3	23	0	0	37	262	0	11	336
NJTR	New Jersey Transit Rail Operations	213	105	1	11	1	34	0	8	373
NOLR	New Orleans Lower Coast Railroad, Incorpora	0	6	0	1	15	16	0	7	45
NOBP	New Orleans Public Belt Railroad	5	19	0	1	4	27	8	36	100
XMTA	New York City Trans. Authority (MTA)	22	7	0	1	0	0	0	0	30
NYSW	New York, Susquehanna & Western Railroad Co	87	85	13	13	13	40	0	14	265
NS	Norfolk Southern Corporation	3,032	3,026	67	557	971	8,425	22	1,406	17,506
DTNC	North Carolina Department Of Transportation	4	12	0	8	5	55	0	8	92
NEKM	Northeast Kansas & Missouri	12	13	0	0	6	93	0	0	124
NWP	Northwestern Pacific Railroad Company	68	15	4	0	5	24	0	3	119
OHCR	Ohio Central Railroad Company	21	21	1	0	2	80	0	0	125
ODOT	Oklahoma Department Of Transportation	8	50	0	0	6	280	0	39	383
OKKT	Oklahoma Kansas & Texas Railroad Company	9	22	0	0	2	87	0	2	122
PAL	Paducah & Louisville Railway Company	19	103	4	0	10	120	0	3	259
PLE	Pittsburgh & Lake Erie Railroad Company	14	9	1	3	4	54	0	14	99
PARY	Prairie Trunk Railway	1	19	0	0	0	143	0	6	169
PW	Providence & Worcester Railroad Company	31	90	7	20	9	21	0	18	196
RV	Rahway Valley Railroad Company	1	54	0	15	0	126	0	20	216
RRVW	Red River Valley & Western Railroad	24	21	0	0	5	662	0	49	761
SGLR	Seminole Gulf Railroad	58	34	0	1	19	50	0	3	165
SOO	Soo Line Railroad Company	469	603	37	66	365	2,562	0	193	4,295
SCRF	South Carolina Central Railroad Company, In	6	33	0	34	17	129	0	4	223
SDRR	South Dakota Railroad Authority	2	10	0	0	3	271	0	35	321
SKOL	South Kansas & Oklahoma Railroad Company	19	60	13	0	8	259	0	0	359
SO	South Orient Railroad Company, Ltd.	5	34	1	0	1	139	0	0	180
SEPA	Southeastern Pennsylvania Transportation Au	50	77	21	18	17	32	2	45	262
SP	Southern Pacific Transportation Company	3,111	1,136	277	35	556	4,027	19	427	9,588
SSWN	Southern Pacific, Chicago-St. Louis Corpora	96	91	4	3	0	71	0	3	268
ST	Springfield Terminal Railway Company (Vermo	66	186	1	47	18	123	0	0	441
SSW	St. Louis Southwestern Railway Company	227	277	8	9	136	1,266	0	113	2,036
SUB	State Subsidy	5	91	25	16	11	91	10	10	259
TSRR	Tennessee Southern Railroad Company, Incorp	2	20	1	0	25	66	0	20	134
TRRA	Terminal Railroad Association Of St. Louis	45	14	0	56	3	20	0	3	141
TXOR	Texas & Oklahoma Railroad Company	3	23	0	0	0	289	0	0	315
TM	Texas Mexican Railway Company	1	62	0	11	6	151	0	8	239
TNER	Texas Northeastern Division--Mid-Michigan R	5	37	1	0	0	173	0	0	216
TPW	Toledo, Peoria & Western Railway Corporatio	7	123	4	0	2	300	0	5	441
TVRR	Tulare Valley Railroad Company	70	39	19	0	5	188	1	2	324
TSBY	Tuscola & Saginaw Bay Railroad Company, Inc	3	80	3	1	52	419	2	8	568
TCWR	Twin City & Western Railroad	15	17	0	0	26	83	0	3	144
UP	Union Pacific Railroad Company	2,752	2,503	111	200	883	9,254	26	904	16,633
VTR	Vermont Railway, Incorporated	2	39	0	6	10	37	0	0	94
WCRC	Washington Central Railroad Company	26	43	4	0	9	252	0	22	356
WE	Wheeling & Lake Erie Railway Company	49	164	3	2	27	379	0	6	630
WSOR	Wisconsin & Southern Railroad Company	4	163	22	8	19	386	0	7	609
WC	Wisconsin Central Ltd. (also Railway)	147	529	15	25	139	1,113	0	17	1,985
	All Other Railroads	1,160	2,510	201	897	1,264	8,265	67	686	15,050
<b>FINAL TOTALS</b>		<b>28,139</b>	<b>29,645</b>	<b>1,672</b>	<b>4,940</b>	<b>10,456</b>	<b>85,440</b>	<b>520</b>	<b>7,304</b>	<b>168,116</b>

**TABLE 47. TOTAL CROSSINGS BY PAVEMENT MARKINGS AND STATE, 1993**

State	Stop Lines	RR X-ing Symbol	Both	None		Total
				Paved	Unpaved	
Alabama.....	38	133	206	2,785	947	4,109
Alaska.....	9	11	55	65	87	227
Arizona.....	23	25	412	257	235	952
Arkansas.....	57	116	312	1,677	1,182	3,344
California.....	998	201	4,782	1,782	312	8,075
Colorado.....	17	38	265	1,034	797	2,151
Connecticut.....	12	13	254	90	1	370
Delaware.....	5	35	120	88	7	255
Dist of Columbia.	---	---	23	14	---	37
Florida.....	274	373	1,851	1,151	439	4,088
Georgia.....	63	103	2,836	1,711	1,608	6,321
Hawaii.....	2	---	---	4	---	6
Idaho.....	17	5	265	717	587	1,591
Illinois.....	82	167	1,264	4,342	4,486	10,341
Indiana.....	70	270	1,249	4,284	913	6,786
Iowa.....	54	150	530	2,034	2,538	5,306
Kansas.....	7	22	895	2,085	5,031	8,040
Kentucky.....	44	330	756	913	638	2,681
Louisiana.....	45	218	568	2,069	947	3,847
Maine.....	2	4	545	256	78	885
Maryland.....	10	25	255	365	45	700
Massachusetts....	55	45	125	933	34	1,192
Michigan.....	71	277	1,369	2,668	1,431	5,816
Minnesota.....	126	183	466	1,924	2,620	5,319
Mississippi.....	27	44	484	1,617	858	3,030
Missouri.....	65	110	558	2,072	2,070	4,875
Montana.....	5	16	157	395	964	1,537
Nebraska.....	32	284	193	994	2,600	4,103
Nevada.....	5	4	105	49	92	255
New Hampshire....	10	28	59	354	52	503
New Jersey.....	39	225	173	1,372	101	1,910
New Mexico.....	5	28	43	340	401	817
New York.....	126	215	435	2,256	282	3,314
North Carolina...	46	30	3,626	573	619	4,894
North Dakota.....	17	29	137	596	3,926	4,705
Ohio.....	448	608	3,359	2,005	480	6,900
Oklahoma.....	28	97	180	2,246	2,103	4,654
Oregon.....	356	918	145	507	442	2,368
Pennsylvania.....	65	354	154	4,458	617	5,648
Rhode Island.....	---	---	80	48	---	128
South Carolina...	94	127	1,052	1,499	477	3,249
South Dakota.....	30	12	132	541	1,426	2,141
Tennessee.....	20	117	929	1,814	539	3,419
Texas.....	3	12	6,358	3,244	3,332	12,949
Utah.....	21	31	181	556	231	1,020
Vermont.....	36	10	87	212	147	492
Virginia.....	93	125	989	772	236	2,215
Washington.....	127	72	568	1,649	607	3,023
West Virginia....	20	12	90	1,239	658	2,019
Wisconsin.....	81	37	728	3,574	531	4,951
Wyoming.....	7	21	53	158	294	533
Puerto Rico.....	3	7	---	12	2	24
Unknown.....	---	---	---	---	---	---
Total.....	3,890	6,317	40,458	68,400	49,050	168,115

NOTE: The Manual On Uniform Traffic Control Devices does not require pavement markings at all crossings.



**TABLE 48. CROSSINGS BY RAILROAD ADVANCE WARNING AND STATE, 1993**

State	Yes	No	Total
Alabama.....	881	3,228	4,109
Alaska.....	164	63	227
Arizona.....	580	372	952
Arkansas.....	908	2,436	3,344
California.....	6,503	1,572	8,075
Colorado.....	1,128	1,023	2,151
Connecticut.....	326	44	370
Delaware.....	220	35	255
Dist of Columbia.	22	15	37
Florida.....	2,562	1,526	4,088
Georgia.....	3,220	3,101	6,321
Hawaii.....	1	5	6
Idaho.....	1,032	559	1,591
Illinois.....	5,335	5,006	10,341
Indiana.....	5,738	1,048	6,786
Iowa.....	3,625	1,681	5,306
Kansas.....	4,320	3,720	8,040
Kentucky.....	1,554	1,127	2,681
Louisiana.....	2,498	1,349	3,847
Maine.....	872	13	885
Maryland.....	448	252	700
Massachusetts....	882	310	1,192
Michigan.....	4,744	1,072	5,816
Minnesota.....	3,416	1,903	5,319
Mississippi.....	746	2,284	3,030
Missouri.....	1,444	3,431	4,875
Montana.....	972	565	1,537
Nebraska.....	2,922	1,181	4,103
Nevada.....	203	52	255
New Hampshire....	297	206	503
New Jersey.....	893	1,017	1,910
New Mexico.....	177	640	817
New York.....	2,620	694	3,314
North Carolina...	3,785	1,109	4,894
North Dakota.....	1,716	2,989	4,705
Ohio.....	4,599	2,301	6,900
Oklahoma.....	1,494	3,160	4,654
Oregon.....	1,030	1,338	2,368
Pennsylvania.....	2,085	3,563	5,648
Rhode Island.....	81	47	128
South Carolina...	2,169	1,080	3,249
South Dakota.....	1,408	733	2,141
Tennessee.....	2,109	1,310	3,419
Texas.....	10,160	2,789	12,949
Utah.....	597	423	1,020
Vermont.....	408	84	492
Virginia.....	1,681	534	2,215
Washington.....	2,190	833	3,023
West Virginia....	476	1,543	2,019
Wisconsin.....	3,244	1,707	4,951
Wyoming.....	291	242	533
Puerto Rico.....	17	7	24
Unknown.....	---	---	---
Total.....	100,793	67,322	168,115

NOTE: The Manual On Uniform Traffic Control Devices does not require pavement markings at all crossings.

**TABLE 49. CROSSINGS MEETING THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' STANDARD FOR CROSSBUCKS BY STATE, 1993**

State	Active Warning	X-buck meet standards		Total
		Yes	No	
Alabama.....	924	1,405	1,780	4,109
Alaska.....	77	113	37	227
Arizona.....	423	417	112	952
Arkansas.....	786	1,803	755	3,344
California.....	4,510	1,626	1,939	8,075
Colorado.....	619	1,089	443	2,151
Connecticut.....	244	88	38	370
Delaware.....	192	49	14	255
Dist of Columbia.	4	20	13	37
Florida.....	2,756	939	393	4,088
Georgia.....	1,861	3,635	825	6,321
Hawaii.....	---	4	2	6
Idaho.....	307	913	371	1,591
Illinois.....	4,817	4,288	1,236	10,341
Indiana.....	2,944	3,234	608	6,786
Iowa.....	1,625	2,821	860	5,306
Kansas.....	1,538	2,867	3,635	8,040
Kentucky.....	1,199	1,138	344	2,681
Louisiana.....	1,132	2,128	587	3,847
Maine.....	454	415	16	885
Maryland.....	321	197	182	700
Massachusetts....	689	296	207	1,192
Michigan.....	2,314	3,147	355	5,816
Minnesota.....	1,197	3,771	351	5,319
Mississippi.....	589	1,525	916	3,030
Missouri.....	1,547	1,760	1,568	4,875
Montana.....	349	954	234	1,537
Nebraska.....	905	2,783	415	4,103
Nevada.....	122	84	49	255
New Hampshire....	188	210	105	503
New Jersey.....	1,085	338	487	1,910
New Mexico.....	278	298	241	817
New York.....	2,104	859	351	3,314
North Carolina...	1,743	1,573	1,578	4,894
North Dakota.....	461	2,920	1,324	4,705
Ohio.....	2,996	2,669	1,235	6,900
Oklahoma.....	1,138	1,933	1,583	4,654
Oregon.....	737	1,118	513	2,368
Pennsylvania.....	2,112	1,276	2,260	5,648
Rhode Island.....	67	2	59	128
South Carolina...	1,063	1,908	278	3,249
South Dakota.....	192	1,767	182	2,141
Tennessee.....	928	862	1,629	3,419
Texas.....	4,422	3,881	4,646	12,949
Utah.....	333	483	204	1,020
Vermont.....	226	251	15	492
Virginia.....	1,175	709	331	2,215
Washington.....	914	1,213	896	3,023
West Virginia....	645	710	664	2,019
Wisconsin.....	1,964	2,477	510	4,951
Wyoming.....	233	188	112	533
Puerto Rico.....	6	6	12	24
Unknown.....	---	---	---	---
Total.....	59,455	71,160	37,500	168,115

NOTE: The manual requires two reflectorized crossbucks to be placed at all crossings.

For crossings with active warning devices, a determination has not been made as to whether crossbucks which are part of the device meet the MUTCD standard.

**TABLE 50. TOTAL CROSSINGS BY TOTAL NUMBER OF TRAINS PER DAY, 1993**

Trains	Crossings
<1	25,540
1-5	72,618
6-10	29,373
11-15	12,153
16-20	10,817
21-25	5,699
26-30	3,821
31-35	1,880
36-40	1,312
41-45	976
46-50	963
51-55	951
56-60	718
61-65	302
66-70	145
71-75	191
76-80	165
81-85	48
86-90	23
91-95	122
96-100	57
>100	241
Total	168,115

**TABLE 51. TOTAL CROSSINGS BY BY NUMBER OF THRU TRAINS AND SWITCHING TRAINS PER DAY, 1993**

Switching Trains	Through trains								Total
	<1	1-2	3-5	6-10	11-15	16-20	21-25	>25	
<1	25,540	26,142	11,441	12,069	4,723	4,752	2,242	4,000	90,909
1-2	17,519	9,286	6,152	6,731	2,889	2,447	792	1,931	47,747
2-3	5,558	1,781	2,185	3,061	1,392	1,017	365	1,276	16,635
6-10	2,476	728	804	1,401	942	968	406	791	8,516
11-15	437	110	124	275	117	53	84	865	2,065
16-20	434	100	92	146	178	78	97	143	1,268
21-25	115	37	24	40	37	18	24	57	352
>25	187	62	43	89	69	45	35	93	623
Total	52,266	38,246	20,865	23,812	10,347	9,378	4,045	9,156	168,115

**TABLE 52. TOTAL CROSSINGS BY NUMBER OF DAY AND NIGHT TRAINS PER DAY, 1993**

Day Trains	Night trains								Total
	<1	1-2	3-5	6-10	11-15	16-20	21-25	>25	
<1	25,540	6,916	911	206	8	7	4	7	33,599
1-2	26,851	26,561	3,098	477	20	10	2	4	57,023
2-3	4,537	9,587	16,085	1,677	138	33	37	3	32,097
6-10	1,419	2,258	6,235	13,978	1,704	90	41	14	25,739
11-15	185	236	856	3,555	4,531	571	21	21	9,976
16-20	78	39	315	682	1,108	1,667	272	46	4,207
21-25	40	27	28	123	358	216	1,007	170	1,969
>25	71	11	51	155	271	293	799	1,854	3,505
Total	58,721	45,635	27,579	20,853	8,138	2,887	2,183	2,119	168,115

**TABLE 53. CROSSINGS BY NUMBER OF TRAINS PER DAY AND WARNING DEVICE, 1993**

Warning device	Number of Trains Per Day								Total
	<1	1-2	3-5	6-10	11-15	16-20	21-25	>25	
Gates.....	996	2,592	3,030	5,343	3,332	4,031	2,688	6,127	28,139
Flashing lights.....	3,317	7,112	5,368	6,740	2,693	2,073	955	1,387	29,645
Hwy. signals, wigwags, bells	211	420	320	289	152	102	34	144	1,672
Special warning devices.....	1,917	1,624	589	410	131	132	40	97	4,940
Stop signs.....	939	2,634	2,088	2,200	685	839	338	733	10,456
Crossbucks.....	15,552	28,464	14,753	13,516	4,909	3,440	1,578	3,228	85,440
Other signs.....	154	173	83	59	12	17	4	18	520
No signs or signals.....	2,454	2,392	977	816	239	183	62	181	7,304
Total.....	25,540	45,411	27,208	29,373	12,153	10,817	5,699	11,915	168,116

**TABLE 54. TOTAL CROSSINGS BY NUMBER OF TRAINS PER DAY AND ANNUAL AVERAGE DAILY TRAFFIC, 1993**

Trains	Average Annual Daily Traffic						Total
	1-250	251-500	501-1,000	1,001-5,000	5,001-10,000	>10,000	
<1	10,802	3,054	2,899	5,662	1,840	1,283	25,540
1-2	22,305	5,357	4,852	8,612	2,522	1,762	45,410
2-3	12,378	3,281	2,997	5,545	1,665	1,342	27,208
6-10	13,187	3,569	3,351	6,110	1,790	1,366	29,373
11-15	5,319	1,309	1,337	2,748	833	607	12,153
16-20	4,412	1,285	1,290	2,472	803	555	10,817
21-25	2,089	649	668	1,417	479	397	5,699
>25	4,965	1,268	1,242	2,640	1,004	796	11,915
Total	75,457	19,772	18,636	35,206	10,936	8,108	168,115

**TABLE 55. CROSSINGS BY MAXIMUM TIMETABLE SPEED, 1993**

Timetable Speed	Crossings
1-5	5,942
6-10	29,690
11-15	9,163
16-20	13,234
21-25	22,358
26-30	16,809
31-35	10,472
36-40	17,465
41-45	3,803
46-50	14,007
51-55	3,288
56-60	9,512
61-65	1,303
66-70	4,830
71-75	483
76-80	5,160
81-85	1
86-90	465
91-95	1
96-100	8
>100	121
Total	168,115

**TABLE 56. TOTAL CROSSINGS BY TYPICAL TRAIN SPEED VARIATION, 1993**

Speed Variation	Crossings
<1	14,092
1-5	43,050
6-10	38,008
11-15	17,676
16-20	16,296
21-25	10,444
26-30	8,791
31-35	4,593
36-40	4,673
41-45	2,300
46-50	3,268
51-55	779
56-60	1,978
61-65	741
66-70	347
71-75	283
76-80	648
81-85	13
86-90	2
91-95	---
96-100	---
>100	133
Total	168,115

**TABLE 57. TOTAL CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC, 1993**

AADT	Crossings
1-100	52,812
101-200	15,593
201-300	12,156
301-400	7,458
401-500	7,210
501-600	4,757
601-700	3,537
701-800	4,058
801-900	2,666
901-1,000	3,618
1,001-2,000	16,080
2,001-3,000	8,789
3,001-4,000	5,519
4,001-5,000	4,818
5,001-6,000	3,058
6,001-7,000	2,330
7,001-8,000	2,211
8,001-9,000	1,601
9,001-10,000	1,736
10,001-20,000	6,177
>20,000	1,931
Total	168,115

**TABLE 58. TOTAL CROSSINGS BY ANNUAL AVERAGE DAILY TRAFFIC AND WARNING DEVICE CATEGORY, 1993**

Warning device	Annual Average Daily Traffic						Total
	1-250	251-500	501-1,000	1,001-5,000	5,001-10,000	>10,000	
Gates.....	3,816	2,884	3,654	10,145	4,091	3,549	28,139
Flashing lights.....	3,966	3,451	4,481	11,074	3,791	2,882	29,645
Hwy. signals, wigwags, bells	446	195	201	450	202	178	1,672
Special warning devices.....	1,010	596	677	1,617	586	454	4,940
Stop signs.....	5,978	1,721	1,240	1,294	166	57	10,456
Crossbucks.....	56,185	9,944	7,527	9,236	1,732	816	85,440
Other signs.....	216	87	82	97	24	14	520
No signs or signals.....	3,840	894	774	1,294	344	158	7,304
Total.....	75,457	19,772	18,636	35,207	10,936	8,108	168,116

**TABLE 59. TOTAL CROSSINGS BY TRUCK TRAFFIC AS A PERCENTAGE OF ANNUAL AVERAGE DAILY TRAFFIC, 1993**

<b>%</b>	<b>Crossings</b>
<1	6,442
1-5	77,181
6-10	50,839
11-15	15,462
16-20	8,364
21-25	2,152
26-30	4,718
31-35	489
36-40	966
41-45	103
46-50	910
51-55	20
56-60	156
61-65	9
66-70	47
71-75	105
76-80	71
81-85	10
86-90	52
91-95	2
96-99	17
Total	168,115

TABLE 60. TOTAL CROSSINGS BY CROSSING SURFACE, 1993

State	Section Timber	Full Wood Plank	Asphalt	Concrete Slab	Concrete Pavement	Rubber	Metal Sections	Other Metal	Unconsol- idated	Other
Alabama	194	386	3,065	5	1	20	2	1	431	4
Alaska	11	97	57	10	0	40	0	0	1	11
Arizona	192	169	405	0	3	116	0	0	65	2
Arkansas	780	220	1,670	18	8	12	3	2	627	4
California	842	1,309	5,589	43	32	90	0	0	141	29
Colorado	682	445	675	5	5	96	8	30	189	16
Connecticut	109	0	115	2	0	142	2	0	0	0
Delaware	7	5	183	14	1	43	0	0	1	1
Dist Of Columbia	6	1	25	0	5	0	0	0	0	0
Florida	1,221	50	2,094	299	33	235	7	1	108	40
Georgia	122	125	5,501	19	16	14	1	1	521	1
Hawaii	0	0	6	0	0	0	0	0	0	0
Idaho	237	767	446	18	1	30	0	0	80	12
Illinois	1,910	1,479	4,890	37	39	835	7	7	1,115	22
Indiana	820	98	5,217	21	11	389	9	0	219	2
Iowa	127	1,199	2,208	9	10	305	1	2	1,342	103
Kansas	2,252	2,377	1,237	39	35	123	7	1	1,959	10
Kentucky	308	316	1,488	1	4	76	1	3	484	0
Louisiana	706	587	1,549	94	7	477	1	4	421	1
Maine	53	221	595	0	0	8	0	0	8	0
Maryland	207	73	332	0	6	62	0	0	17	3
Massachusetts	64	29	992	8	0	84	0	0	15	0
Michigan	1,403	425	3,054	11	10	435	90	1	369	18
Minnesota	267	2,598	1,893	15	10	231	0	1	292	12
Mississippi	161	369	1,579	10	3	137	1	1	767	2
Missouri	1,515	752	1,606	11	3	81	2	1	886	18
Montana	25	1,153	285	17	2	10	0	8	20	17
Nebraska	876	750	666	98	40	55	2	2	1,598	16
Nevada	51	51	76	18	1	17	0	1	33	7
New Hampshire	12	57	419	1	0	7	0	0	6	1
New Jersey	158	11	1,507	14	19	64	0	14	81	42
New Mexico	462	176	50	0	2	30	0	0	97	0
New York	440	157	2,304	9	15	282	0	2	95	10
North Carolina	22	45	4,473	8	12	8	2	1	316	7
North Dakota	126	3,620	476	19	2	39	0	2	417	4
Ohio	1,959	177	4,404	11	14	125	0	2	191	17
Oklahoma	1,683	556	1,122	33	15	41	1	6	1,187	10
Oregon	490	121	1,355	14	21	59	0	0	44	264
Pennsylvania	976	77	3,817	61	245	91	1	16	360	4
Rhode Island	1	1	79	0	10	36	0	1	0	0
South Carolina	45	13	2,983	41	5	4	1	1	150	6
South Dakota	13	1,428	444	1	1	118	0	0	86	50
Tennessee	105	239	2,730	6	5	109	3	0	216	6
Texas	4,624	1,227	4,557	172	106	282	5	18	1,957	2
Utah	228	232	400	41	5	19	3	2	86	4
Vermont	33	42	331	0	1	9	0	0	75	1
Virginia	235	53	1,742	6	2	14	4	11	130	18
Washington	126	1,249	1,361	76	7	170	0	0	30	4
West Virginia	839	11	789	1	3	9	0	1	364	2
Wisconsin	71	371	3,971	4	25	261	1	1	245	1
Wyoming	44	202	138	2	1	22	0	0	118	6
Puerto Rico	0	0	22	0	0	0	0	0	2	0
FINAL TOTALS	27,840	26,116	86,972	1,342	802	5,962	165	145	17,962	810

**TABLE 61. TOTAL CROSSINGS BY MAXIMUM TIMETABLE SPEED, WARNING DEVICE CATEGORY AND NUMBER OF TRACKS, 1993**

SINGLE TRACK WARNING DEVICES	MAXIMUM TIME TABLE SPEED												TOTAL
	00-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	>110	
GATES.....	1172	1648	2360	2146	1819	1419	1061	904	33	4	1	0	12567
FLASHING LIGHTS.....	4365	3162	5378	3592	2486	1362	334	268	12	0	0	0	20959
HWY. SIGNALS, WIGWAGS, BELLS	374	165	220	127	49	55	10	8	1	0	1	0	1010
SPECIAL WARNING DEVICES.....	2316	601	285	85	51	24	13	20	12	2	0	0	3409
STOP SIGNS.....	1111	813	1847	1605	916	593	306	264	5	0	0	0	7460
CROSSBUCKS.....	12721	7688	17860	12330	6683	4660	1035	1109	123	0	1	0	64210
OTHER SIGNS.....	175	98	66	16	12	1	2	3	0	0	0	0	373
NO SIGNS OR SIGNALS.....	2747	1096	917	384	199	137	41	19	5	0	0	0	5545
TOTAL.....	24981	15271	28933	20285	12215	8251	2802	2595	191	6	3	0	115533

MULTIPLE TRACKS WARNING DEVICES	MAXIMUM TIME TABLE SPEED												TOTAL
	00-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	>110	
GATES.....	980	1533	2458	2499	2285	1998	1887	1792	136	2	2	0	15572
FLASHING LIGHTS.....	1811	1321	2056	1485	924	654	228	199	8	0	0	0	8686
HWY. SIGNALS, WIGWAGS, BELLS	178	99	151	83	46	42	44	15	4	0	0	0	662
SPECIAL WARNING DEVICES.....	992	249	155	48	25	40	7	11	3	1	0	0	1531
STOP SIGNS.....	498	404	557	488	355	235	236	220	3	0	0	0	2996
CROSSBUCKS.....	5329	3122	4625	2935	1882	1525	905	786	121	0	0	0	21230
OTHER SIGNS.....	52	35	26	17	15	0	2	0	0	0	0	0	147
NO SIGNS OR SIGNALS.....	927	364	206	97	63	55	22	25	0	0	0	0	1759
TOTAL.....	10767	7127	10234	7652	5595	4549	3331	3048	275	3	2	0	52583

ALL CROSSINGS WARNING DEVICES	MAXIMUM TIME TABLE SPEED												TOTAL
	00-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-110	>110	
GATES.....	2152	3181	4818	4645	4104	3417	2948	2696	169	6	3	0	28139
FLASHING LIGHTS.....	6176	4483	7434	5077	3410	2016	562	467	20	0	0	0	29645
HWY. SIGNALS, WIGWAGS, BELLS	552	264	371	210	95	97	54	23	5	0	1	0	1672
SPECIAL WARNING DEVICES.....	3308	850	440	133	76	64	20	31	15	3	0	0	4940
STOP SIGNS.....	1609	1217	2404	2093	1271	828	542	484	8	0	0	0	10456
CROSSBUCKS.....	18050	10810	22485	15265	8565	6185	1940	1895	244	0	1	0	85440
OTHER SIGNS.....	227	133	92	33	27	1	4	3	0	0	0	0	520
NO SIGNS OR SIGNALS.....	3674	1460	1123	481	262	192	63	44	5	0	0	0	7304
TOTAL.....	35748	22398	39167	27937	17810	12800	6133	5643	466	9	5	0	168116



**( D A T A )**

**SUMMARY OF**

**ACCIDENT/INCIDENT**

**AND**

**INVENTORY**

**FOR**

**PRIVATE CROSSINGS**

TABLE 62. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS  
BY TYPE OF CONSIST, 1993

State	----Freight----			---Passenger---			-Yard Switching			-----Other-----		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
Alabama.....	6	---	---	---	---	---	3	1	---	2	---	---
Alaska.....	---	---	---	---	---	---	1	---	---	---	---	---
Arizona.....	3	---	---	---	---	---	---	---	---	---	---	---
Arkansas.....	7	---	---	---	---	---	1	---	---	2	---	---
California.....	13	3	3	6	---	2	2	---	---	4	---	1
Colorado.....	6	---	---	1	1	---	---	---	---	---	---	---
Connecticut.....	1	---	---	1	---	---	---	---	---	---	---	---
Delaware.....	---	---	---	---	---	---	1	---	---	---	---	---
Dist. of Columbia	---	---	---	---	---	---	---	---	---	---	---	---
Florida.....	1	---	---	---	---	---	---	---	---	1	---	---
Georgia.....	5	---	---	---	---	---	1	---	---	2	---	---
Idaho.....	5	---	1	---	---	---	---	---	---	---	---	---
Illinois.....	10	1	5	---	---	---	8	---	4	4	---	1
Indiana.....	5	---	1	---	---	---	5	---	---	2	---	---
Iowa.....	4	1	---	---	---	---	---	---	---	---	---	---
Kansas.....	4	---	1	---	---	---	---	---	---	1	---	---
Kentucky.....	8	---	4	---	---	---	1	---	---	---	---	---
Louisiana.....	11	3	3	1	2	---	2	---	---	4	---	---
Maine.....	4	---	2	---	---	---	---	---	---	---	---	---
Maryland.....	2	---	1	---	---	---	---	---	---	---	---	---
Massachusetts.....	1	---	1	2	---	---	---	---	---	---	---	---
Michigan.....	9	1	3	3	---	1	3	---	---	---	---	---
Minnesota.....	2	1	1	---	---	---	5	---	---	2	---	---
Mississippi.....	8	1	3	---	---	---	1	---	---	---	---	---
Missouri.....	8	---	2	1	---	---	1	---	---	1	---	---
Montana.....	10	1	---	---	---	---	1	---	---	3	---	---
Nebraska.....	6	---	2	---	---	---	1	---	---	---	---	---
Nevada.....	3	1	---	---	---	---	---	---	---	---	---	---
New Hampshire.....	---	---	---	---	---	---	---	---	---	---	---	---
New Jersey.....	1	---	---	---	---	---	1	---	---	1	---	2
New Mexico.....	1	---	---	---	---	---	---	---	---	---	---	---
New York.....	1	---	---	1	---	1	---	---	---	---	---	---
North Carolina...	8	---	1	3	1	---	1	---	2	---	---	---
North Dakota.....	---	---	---	---	---	---	---	---	---	---	---	---
Ohio.....	15	1	3	---	---	---	2	1	---	---	---	---
Oklahoma.....	3	---	---	---	---	---	---	---	---	1	---	---
Oregon.....	3	---	---	---	---	---	7	---	1	2	---	---
Pennsylvania.....	11	3	2	---	---	---	---	---	---	3	---	1
Rhode Island.....	---	---	---	---	---	---	---	---	---	---	---	---
South Carolina...	3	3	3	---	---	---	2	---	---	---	---	---
South Dakota.....	---	---	---	---	---	---	1	---	---	1	---	---
Tennessee.....	5	---	1	---	---	---	3	---	---	---	---	---
Texas.....	24	6	6	1	1	---	12	---	2	3	---	---
Utah.....	3	---	1	---	---	---	1	---	---	1	1	---
Vermont.....	3	---	---	---	---	---	---	---	---	---	---	---
Virginia.....	18	1	3	1	---	---	2	---	---	2	---	1
Washington.....	13	1	3	---	---	---	4	---	---	1	---	1
West Virginia.....	7	---	4	---	---	---	2	---	---	3	---	1
Wisconsin.....	5	1	1	---	---	---	5	---	---	1	---	1
Wyoming.....	7	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	---	---	---	---	---	---	---	---	---	---	---	---
Total.....	273	29	61	21	5	4	80	2	9	47	1	9

Note: "Other" includes mixed trains, work trains, light locomotives, single car or cut of cars

**TABLE 63. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS  
BY STATE AND WARNING DEVICE, 1993**

State	Gates	Flashing Lights	Hwy Sig. Wigwags Bells	Special	Cross- Bucks	Stop Signs	Other Signs	No Signs Or Signals	Total
Alabama.....	---	1	1	1	4	1	---	3	11
Alaska.....	---	---	---	1	---	---	---	---	1
Arizona.....	---	---	1	---	2	---	---	---	3
Arkansas.....	---	---	---	---	6	1	---	3	10
California.....	1	1	1	---	3	15	---	4	25
Colorado.....	---	---	---	---	2	1	1	3	7
Connecticut.....	---	1	---	---	---	---	---	1	2
Delaware.....	---	---	---	---	---	---	---	1	1
Dist. of Columbia	---	---	---	---	---	---	---	---	---
Florida.....	---	---	---	1	1	---	---	---	2
Georgia.....	---	1	---	1	2	3	---	1	8
Idaho.....	---	---	---	---	1	1	---	3	5
Illinois.....	---	3	---	1	5	5	---	8	22
Indiana.....	2	---	---	1	4	1	---	4	12
Iowa.....	---	---	---	---	1	2	---	1	4
Kansas.....	---	---	1	---	---	1	---	3	5
Kentucky.....	---	1	---	1	4	---	---	3	9
Louisiana.....	1	---	---	---	9	1	1	6	18
Maine.....	---	---	---	---	---	---	3	1	4
Maryland.....	---	---	---	---	1	---	---	1	2
Massachusetts....	---	1	---	---	2	---	---	---	3
Michigan.....	---	4	---	---	1	3	1	8	17
Minnesota.....	---	---	---	---	---	3	---	4	7
Mississippi.....	---	1	---	1	4	---	---	3	9
Missouri.....	---	---	1	---	1	2	---	7	11
Montana.....	---	---	---	---	1	5	1	7	14
Nebraska.....	---	---	---	---	1	4	---	2	7
Nevada.....	---	---	---	---	1	1	---	1	3
New Hampshire.....	---	---	---	---	---	---	---	---	---
New Jersey.....	---	---	---	---	---	2	---	1	3
New Mexico.....	---	---	---	---	1	---	---	---	1
New York.....	---	---	---	---	1	---	1	---	2
North Carolina...	---	---	---	---	5	1	---	6	12
North Dakota.....	---	---	---	---	---	---	---	---	---
Ohio.....	---	2	---	---	2	3	---	10	17
Oklahoma.....	---	---	---	---	2	---	---	2	4
Oregon.....	---	---	---	---	---	8	---	4	12
Pennsylvania.....	---	---	---	---	2	3	1	8	14
Rhode Island.....	---	---	---	---	---	---	---	---	---
South Carolina...	1	---	---	---	2	---	---	2	5
South Dakota.....	---	---	---	---	2	---	---	---	2
Tennessee.....	---	---	---	1	1	1	---	5	8
Texas.....	1	---	---	3	19	9	---	8	40
Utah.....	---	---	---	---	---	---	1	4	5
Vermont.....	---	---	---	---	---	1	---	2	3
Virginia.....	1	---	2	2	4	---	---	14	23
Washington.....	---	---	---	---	2	8	---	8	18
West Virginia....	---	1	---	---	5	---	1	5	12
Wisconsin.....	---	---	---	---	3	2	---	6	11
Wyoming.....	---	---	---	---	1	1	---	5	7
Unknown.....	---	---	---	---	---	---	---	---	---
Total.....	7	17	7	14	108	89	11	168	421

Note: "Special" are crossings protected by watchmen or members of train crew

The totals on this table are slightly higher than those shown on other tables. The reporting rules require that when an Amtrak train is being operated by a crew of another railroad, both Amtrak and the operating carrier must make a report of an accident/incident. In all other tables these accidents/incidents are only counted once.

**TABLE 64. ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS BY HIGHWAY USER, 1993**

Type Of Vehicle	----Acc/Inc----		----Killed----		----Injured----		Fatal Acc/Inc	Injury Acc/Inc
	No.	%	No.	%	No.	%		
Automobile.....	175	38.46	25	59.52	36	38.71	20	29
Truck.....	129	28.35	8	19.05	27	29.03	8	26
Truck-trailer....	114	25.05	2	4.76	18	19.35	2	15
Bus.....	1	.22	---	---	1	1.08	---	1
School bus.....	---	---	---	---	---	---	---	---
Motorcycle.....	2	.44	2	4.76	1	1.08	2	---
Pedestrian.....	---	---	---	---	---	---	---	---
Other.....	34	7.47	5	11.90	10	10.75	5	8
Total.....	455	100.00	42	100.00	93	100.00	37	79

**TABLE 65. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS BY WARNING DEVICE CATEGORY AND MOTORIST ACTION, 1993**

Warning Device	--Drove Around-- -Or Thru Gate--			--Stopped And-- -Then Proceeded			-Did Not Stop--			-----Other-----			-----Unknown-----			-----Total-----		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
Gates.....	4	---	---	---	---	---	---	---	---	3	---	---	---	---	---	7	---	---
Cantilever flshrs	---	---	---	---	---	---	2	1	---	---	---	---	---	---	---	2	1	---
Standard flashers	---	---	---	4	---	3	8	1	---	3	---	---	---	---	---	15	1	3
Hwy Sig,W W,Bells	---	---	---	2	---	1	3	---	---	2	---	---	---	---	---	7	---	1
Special Devices..	---	---	---	3	---	1	8	---	1	3	---	1	---	---	---	14	---	3
Crossbucks.....	---	---	---	5	---	---	64	9	19	37	5	10	2	---	---	108	14	29
Stopsigns.....	---	---	---	7	---	3	51	7	13	25	2	6	6	---	1	89	9	23
Other Signs.....	---	---	---	---	---	---	9	---	4	2	---	1	---	---	---	11	---	5
No Signs Or Signl	---	---	---	11	---	2	84	8	11	67	4	6	6	---	---	168	12	19
Total.....	4	---	---	32	---	10	229	26	48	142	11	24	14	---	1	421	37	83

Note: "Special" are crossings protected by watchmen or members of train crew.  
 "Hwy Sig" = Highway signals, W W = Wigwags.

**TABLE 66. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS BY SPEED OF TRAIN, CIRCUMSTANCE AND VISIBILITY, 1993**

Speed Of Vehicle	-----Dawn-----			-----Day-----			-----Dusk-----			-----Dark-----			-----Total-----		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
<b>RAIL CONSIST STRUCK HIGHWAY USER</b>															
Standing.....	2	---	---	71	7	17	3	---	---	56	4	4	132	11	21
1-9.....	7	2	---	107	5	23	4	---	---	27	---	7	145	7	30
10-19.....	---	---	---	52	9	9	4	---	1	15	2	8	71	11	18
20-29.....	---	---	---	10	1	3	---	---	---	3	1	2	13	2	5
30-39.....	---	---	---	1	---	---	---	---	---	---	---	---	1	---	---
40-49.....	---	---	---	---	---	---	---	---	---	2	1	---	2	1	---
50-59.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
60 and over.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	2	1	---	18	2	4	1	---	---	---	---	---	21	3	4
Total.....	11	3	---	259	24	56	12	---	1	103	8	21	385	35	78
<b>HIGHWAY USER STRUCK RAIL CONSIST</b>															
Standing.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1-9.....	---	---	---	9	---	---	---	---	---	5	---	1	14	---	1
10-19.....	---	---	---	4	---	1	1	---	---	6	---	---	11	---	1
20-29.....	---	---	---	3	---	1	---	---	---	---	---	---	3	---	1
30-39.....	1	---	---	1	1	---	---	---	---	2	---	---	4	1	---
40-49.....	---	---	---	---	---	---	---	---	---	1	1	---	1	1	---
50-59.....	---	---	---	---	---	---	---	---	---	1	---	---	1	---	---
60 and over.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	---	---	---	2	---	2	---	---	---	---	---	---	2	---	2
Total.....	1	---	---	19	1	4	1	---	---	15	1	1	36	2	5
<b>GRAND TOTAL</b>															
Standing.....	2	---	---	71	7	17	3	---	---	56	4	4	132	11	21
1-9.....	7	2	---	116	5	23	4	---	---	32	---	8	159	7	31
10-19.....	---	---	---	56	9	10	5	---	1	21	2	8	82	11	19
20-29.....	---	---	---	13	1	4	---	---	---	3	1	2	16	2	6
30-39.....	1	---	---	2	1	---	---	---	---	2	---	---	5	1	---
40-49.....	---	---	---	---	---	---	---	---	---	3	2	---	3	2	---
50-59.....	---	---	---	---	---	---	---	---	---	1	---	---	1	---	---
60 and over.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	2	1	---	20	2	6	1	---	---	---	---	---	23	3	6
Total.....	12	3	---	278	25	60	13	---	1	118	9	22	421	37	83

**TABLE 67. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS BY RAILROAD AND WARNING DEVICE CATEGORY, 1993**

Railroad	Gates	Flashing Lights	Hwy Sig. Wigwags Bells	Special	Cross-Bucks	Stop Signs	Other Signs	No Signs Or Signals	Total
Alaska Railroad Corp.	---	---	---	1	---	---	---	---	1
Alton & Southern Railroad	---	---	---	---	---	---	---	---	---
Amtrak (Nat'l Railroad Passenger Corp.)	---	1	2	---	8	5	---	3	19
Atchison, Topeka And Santa Fe Railway Co.	---	---	---	---	9	1	---	3	13
Bangor And Aroostook Railroad	---	---	---	---	---	---	3	---	3
Belt Railway Co. of Chicago	---	---	---	---	---	---	---	---	---
Bessemer & Lake Erie Railroad Co.	---	---	---	---	---	---	---	---	---
Birmingham Southern Railroad Co.	---	1	1	---	1	---	---	---	---
Burlington Northern Railroad Co.	---	1	---	3	14	28	---	25	71
Chicago And North Western Transportation	---	---	---	---	---	2	---	3	5
Chicago, Central & Pacific Railroad Co.	---	---	---	---	---	---	---	---	---
Consolidated Rail Corp.	2	3	---	---	5	5	1	14	30
Cuyahoga Valley Railway Co.	---	---	---	---	---	---	---	---	---
CSX Transportation	---	2	---	2	9	2	1	9	25
Dakota, Minnesota & Eastern Railroad	---	---	---	---	---	---	---	---	---
Delaware And Hudson Railroad Co.	---	---	---	---	---	---	---	---	---
Denver And Rio Grande Western Railroad Co.	---	---	---	---	---	---	2	4	6
Duluth, Missabe & Iron Range Railway Co.	---	---	---	---	---	---	---	---	---
Elgin, Joliet And Eastern Railway Co.	---	---	---	1	1	---	---	---	2
Florida East Coast Railway Co.	---	---	---	---	---	---	---	---	---
Gateway Western Railway	---	---	---	---	---	---	---	---	---
Grand Trunk Western Railroad Co.	---	2	---	---	---	---	---	4	6
Houston Belt & Terminal Railway Co.	---	---	---	---	1	---	---	---	1
Illinois Central Railroad Co.	---	1	---	---	3	---	---	4	8
Indiana Harbor Belt Railroad Co.	---	---	---	---	1	---	---	1	2
Kansas City Southern Railway Co.	---	---	---	---	4	---	1	2	7
Long Island Rail Road	---	---	---	---	---	---	---	---	---
Metro North Commuter Railroad Co.	---	1	---	---	---	---	---	---	---
Midsouth Rail Corporation	---	---	---	---	3	---	---	---	3
Montana Rail Link	---	---	---	---	1	1	1	5	8
New Jersey Transit Rail Operations	---	---	---	---	---	---	---	---	---
Norfolk Southern Corporation	2	1	1	5	17	9	---	44	79
Northeast Illinois Regional Commuter Rail	---	---	---	---	---	---	---	---	---
Northern Indiana Commuter Trans.	---	---	---	---	---	---	---	---	---
Paducah & Louisville Railway Co.	---	---	---	---	---	---	---	---	---
Port Authority Trans Hudson	---	---	---	---	---	---	---	---	---
Port Terminal Railroad Association	---	---	---	---	---	---	---	---	---
Soo Line Railroad Co.	---	---	---	---	---	3	---	2	5
Southeastern Pennsylvania Transportation	---	---	---	---	---	1	---	5	6
Southern Pacific Transportation Co.	2	1	2	1	3	16	---	3	28
Southern Pacific, Chicago-St. Louis Corp.	---	1	---	---	---	---	---	---	1
Southrail Corporation	---	---	---	---	2	---	---	---	2
Springfield Terminal Railway Co.	---	---	---	---	---	---	---	1	1
St. Louis Southwestern Railway Co.	---	---	1	---	2	1	---	---	4
Terminal Railroad Assoc. of St. Louis	---	---	---	---	---	---	---	---	---
Texas Mexican Railway Co.	---	---	---	---	1	---	---	---	1
Union Pacific Railroad Co.	1	1	---	1	15	5	---	18	41
Union Railroad Company (Pittsburgh)	---	---	---	---	---	---	---	---	---
Wheeling & Lake Erie Railway Co.	---	---	---	---	---	---	---	---	---
Wisconsin Central Ltd.	---	---	---	---	2	1	---	2	5
All Other Railroads.....	---	1	---	---	6	9	2	16	34
Total.....	7	17	7	14	108	89	11	168	421

Note: "Special" are crossings protected by watchmen or members of train crew.

The totals on this table are slightly higher than those shown on other tables. The reporting rules require that when an Amtrak train is being operated by a crew of another railroad, both Amtrak and the operating carrier must make a report of an accident/incident. In all other tables these accidents/incidents are only counted once.

**TABLE 68. ACCIDENTS/INCIDENTS AND CASUALTIES AT PRIVATE HIGHWAY-RAIL CROSSINGS BY RAILROAD, 1993**

*Private*

Railroad	-----Motor Vehicle-----			----Other Highway Users----			-----Total-----		
	Acc/Inc	Killed	Injured	Acc/Inc	Killed	Injured	Acc/Inc	Killed	Injured
Alaska Railroad Corporation	1	---	---	---	---	---	1	---	---
Alton & Southern Railroad	---	---	---	---	---	---	---	---	---
Amtrak (National Railroad Passenger Corp.)	19	5	3	3	2	2	22	7	5
Atchison, Topeka And Santa Fe Railway Co.	13	6	2	---	---	---	13	6	2
Bangor And Aroostook Railroad	3	---	2	---	---	---	3	---	2
Belt Railway Co. of Chicago	---	---	---	---	---	---	---	---	---
Bessemer & Lake Erie Railroad Co.	---	---	---	---	---	---	---	---	---
Birmingham Southern Railroad Co.	3	1	---	---	---	---	3	1	---
Burlington Northern Railroad Co.	71	5	8	6	2	2	77	7	10
Chicago And North Western Transportation	5	---	---	---	---	---	5	---	---
Chicago, Central & Pacific Railroad Co.	---	---	---	---	---	---	---	---	---
Consolidated Rail Corp.	30	4	8	4	1	---	34	5	8
Cuyahoga Valley Railway Co.	---	---	---	---	---	---	---	---	---
CSX Transportation	25	1	9	2	---	1	27	1	10
Dakota, Minnesota & Eastern Railroad	---	---	---	---	---	---	---	---	---
Delaware And Hudson Railroad Co.	---	---	---	---	---	---	---	---	---
Denver And Rio Grande Western Railroad Co.	6	1	---	---	---	---	6	1	---
Duluth, Missabe & Iron Range Railway Co.	---	---	---	---	---	---	---	---	---
Elgin, Joliet And Eastern Railway Co.	2	---	---	1	---	---	3	---	---
Florida East Coast Railway Co.	---	---	---	1	---	2	1	---	2
Gateway Western Railway	---	---	---	---	---	---	---	---	---
Grand Trunk Western Railroad Co.	6	---	---	---	---	---	6	---	---
Houston Belt & Terminal Railway Co.	1	---	---	---	---	---	1	---	---
Illinois Central Railroad Co.	8	---	2	---	---	---	8	---	2
Indiana Harbor Belt Railroad Co.	2	---	---	---	---	---	2	---	---
Kansas City Southern Railway Co.	7	---	2	---	---	---	7	---	2
Long Island Rail Road	---	---	---	---	---	---	---	---	---
Metro North Commuter Railroad Co.	1	---	---	---	---	---	1	---	---
Midsouth Rail Corporation	3	---	1	---	---	---	3	---	1
Montana Rail Link	8	---	---	---	---	---	8	---	---
New Jersey Transit Rail Operations	---	---	---	---	---	---	---	---	---
Norfolk Southern Corporation	79	5	16	4	---	---	83	5	16
Northeast Illinois Regional Commuter Rail	---	---	---	---	---	---	---	---	---
Northern Indiana Commuter Trans.	---	---	---	---	---	---	---	---	---
Paducah & Louisville Railway Co.	---	---	---	---	---	---	---	---	---
Port Authority Trans Hudson	---	---	---	---	---	---	---	---	---
Port Terminal Railroad Association	5	---	1	---	---	---	5	---	1
Soo Line Railroad Co.	6	1	---	2	---	2	8	1	2
Southeastern Pennsylvania Transportation	---	---	---	---	---	---	---	---	---
Southern Pacific Transportation Co.	28	3	4	1	---	---	29	3	4
Southern Pacific, Chicago-St. Louis Corp.	1	---	---	---	---	---	1	---	---
Southrail Corporation	2	---	1	1	---	---	3	---	1
Springfield Terminal Railway Co.	1	---	---	1	---	---	2	---	---
St. Louis Southwestern Railway Co.	4	---	3	2	---	---	6	---	3
Terminal Railroad Assoc. of St. Louis	---	---	---	---	---	---	---	---	---
Texas Mexican Railway Co.	1	---	---	---	---	---	1	---	---
Union Pacific Railroad Co.	41	4	10	2	---	1	43	4	11
Union Railroad Company (Pittsburgh)	---	---	---	---	---	---	---	---	---
Wheeling & Lake Erie Railway Co.	---	---	---	---	---	---	---	---	---
Wisconsin Central Ltd.	5	1	2	1	---	---	6	1	2
All Other Railroads.....	34	---	9	3	---	---	37	---	9
Total.....	421	37	83	34	5	10	455	42	93

Note: A/I totals on this table are slightly higher than those shown on other tables. The reporting rules require that when an Amtrak train is being operated by a crew of another railroad, both Amtrak and the operating carrier must make a report of an accident/incident. In all other tables these accidents/incidents are only counted once.

**TABLE 69. (MV) ACCIDENTS/INCIDENTS AND CASUALTIES AT PRIVATE HIGHWAY-RAIL CROSSINGS BY SPEED OF CONSIST, 1993**

Speed Of Consist	---Freight---			---Passenger---			-Yard Switching			-----Other-----			-----Total-----		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
Standing.....	---	---	---	---	---	---	3	---	---	1	---	---	4	---	---
1-9.....	31	---	1	1	---	---	62	1	2	24	---	2	118	1	5
10-19.....	30	---	7	3	---	1	13	1	4	10	---	6	56	1	18
20-29.....	43	---	13	2	---	---	2	---	3	7	---	---	54	---	16
30-39.....	55	4	13	---	---	---	---	---	---	1	---	---	56	4	13
40-49.....	79	12	20	---	---	---	---	---	---	1	---	1	80	12	21
50-59.....	21	10	5	5	1	2	---	---	---	1	---	---	27	11	7
60-69.....	14	3	2	4	1	1	---	---	---	2	1	---	20	5	3
70-79.....	---	---	---	5	2	---	---	---	---	---	---	---	5	2	---
80-89.....	---	---	---	1	1	---	---	---	---	---	---	---	1	1	---
90 and over.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Unknown.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total.....	273	29	61	21	5	4	80	2	9	47	1	9	421	37	83

**TABLE 70. (MV) ACCIDENTS/INCIDENTS AND CASUALTIES AT PRIVATE HIGHWAY-RAIL CROSSINGS BY LENGTH OF CONSIST, 1993**

Number Of Cars	---Freight---			---Passenger---			-Yard Switching			-----Other-----			-----Total-----		
	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj	A/I	Kld	Inj
1-9.....	40	1	9	15	4	2	51	2	---	7	---	1	113	7	12
10-19.....	38	---	10	6	1	2	13	---	1	---	---	---	57	1	13
20-29.....	17	9	1	---	---	---	8	---	3	---	---	---	25	9	4
30-39.....	18	2	4	---	---	---	5	---	4	---	---	---	23	2	8
40-49.....	16	2	3	---	---	---	2	---	1	---	---	---	18	2	4
50-59.....	20	1	2	---	---	---	---	---	---	---	---	---	20	1	2
60-69.....	15	3	6	---	---	---	---	---	---	---	---	---	15	3	6
70-79.....	18	1	4	---	---	---	---	---	---	---	---	---	18	1	4
80-89.....	16	3	3	---	---	---	---	---	---	---	---	---	16	3	3
90-99.....	22	2	7	---	---	---	---	---	---	---	---	---	22	2	7
100-109.....	16	---	8	---	---	---	---	---	---	---	---	---	16	---	8
110-119.....	20	3	---	---	---	---	---	---	---	---	---	---	20	3	---
120-129.....	6	1	---	---	---	---	---	---	---	---	---	---	6	1	---
130-139.....	1	---	---	---	---	---	---	---	---	---	---	---	1	---	---
140-149.....	2	---	1	---	---	---	---	---	---	---	---	---	2	---	1
150 And over.....	5	1	1	---	---	---	---	---	---	---	---	---	5	1	1
Locomotives only.	3	---	2	---	---	---	1	---	---	40	1	8	44	1	10
Total.....	273	29	61	21	5	4	80	2	9	47	1	9	421	37	83

Note: "Other" includes mixed trains, work trains, light locomotives, single car or cut of cars



**TABLE 71. (MV) ACCIDENTS/INCIDENTS AT PRIVATE HIGHWAY-RAIL CROSSINGS  
BY OPERATIONAL STATUS OF WARNING DEVICE,  
CIRCUMSTANCE AND VISIBILITY, 1993**

Warning Device	-Device Working-			-----Highway User-----							
	Yes	No	N/A	----Struck By Consist----				----Ran Into Consist----			
				Dawn	Day	Dusk	Dark	Dawn	Day	Dusk	Dark
Gates.....	7	---	---	1	5	---	1	---	---	---	---
Cantilever flashrs	2	---	---	---	1	---	1	---	---	---	---
Standard flashers	13	2	---	1	7	---	3	---	1	---	3
Hwy Sig,W W,Bells	7	---	---	---	5	---	1	---	---	---	1
Special Devices..	---	---	14	---	6	---	3	---	3	---	2
Crossbucks.....	---	---	108	4	64	3	28	---	6	---	3
Stopsigns.....	---	---	89	1	60	4	21	---	2	---	1
Other Signs.....	---	---	11	---	6	---	3	---	2	---	---
No Signs Or Signl	---	---	168	4	105	5	42	1	5	1	5
Total.....	29	2	390	11	259	12	103	1	19	1	15

Note: If a rail consist is intentionally grounded to prevent activation of the warning device, these are reported as "N/A."

TABLE 72. PRIVATE CROSSINGS AT-GRADE BY STATE AND TYPE DEVELOPMENT, 1993

State	Farm	Residential	Recreational	Industrial	Unknown	Total
Alabama	1,409	281	13	491	0	2,194
Alaska	4	14	5	85	0	108
Arizona	398	24	13	257	0	692
Arkansas	1,012	220	20	279	0	1,531
California	2,188	346	124	2,272	9	4,939
Colorado	922	269	24	265	6	1,486
Connecticut	49	30	32	149	1	261
Delaware	87	38	6	22	0	153
Dist Of Columbia	0	0	0	12	0	12
Florida	375	207	33	442	419	1,476
Georgia	1,637	667	27	563	0	2,894
Idaho	904	57	8	473	0	1,442
Illinois	3,859	511	84	1,387	0	5,841
Indiana	1,969	356	29	646	4	3,004
Iowa	3,218	331	51	698	1	4,299
Kansas	3,696	209	9	433	1	4,348
Kentucky	1,658	805	19	451	0	2,933
Louisiana	1,825	532	22	985	1	3,365
Maine	410	118	77	329	0	934
Maryland	427	78	17	224	0	746
Massachusetts	170	68	39	261	0	538
Michigan	1,399	400	126	888	0	2,813
Minnesota	2,268	242	49	590	0	3,149
Mississippi	1,432	377	6	275	0	2,090
Missouri	2,336	337	27	600	1	3,301
Montana	1,620	108	23	301	0	2,052
Nebraska	2,494	87	12	235	0	2,828
Nevada	16	2	2	23	197	240
New Hampshire	152	87	23	82	0	344
New Jersey	201	63	13	331	1	609
New Mexico	454	32	4	114	0	604
New York	2,192	338	99	584	0	3,213
North Carolina	1,796	931	34	907	1	3,669
North Dakota	1,886	26	10	188	0	2,110
Ohio	2,772	357	45	994	1	4,169
Oklahoma	1,361	152	10	257	0	1,780
Oregon	1,417	338	42	1,130	0	2,927
Pennsylvania	1,490	526	156	1,296	0	3,468
Rhode Island	7	18	9	37	0	71
South Carolina	823	319	18	313	0	1,473
South Dakota	1,141	81	3	132	0	1,357
Tennessee	1,147	406	22	402	0	1,977
Texas	4,468	537	37	1,569	3	6,614
Utah	536	46	10	210	0	802
Vermont	477	67	30	113	0	687
Virginia	540	209	12	319	2,170	3,250
Washington	1,570	432	56	1,153	0	3,211
West Virginia	948	716	51	696	1	2,412
Wisconsin	1,931	256	62	757	0	3,006
Wyoming	776	16	0	136	0	928
Puerto Rico	2	0	0	0	0	2
FINAL TOTALS	65,869	12,667	1,643	25,356	2,817	108,352

**TABLE 73. PRIVATE CROSSINGS AT-GRADE BY STATE AND TYPE WARNING DEVICE, 1993**

State	Signs	Signals	No Signs or Signals	Unknown	Total
Alabama	661	18	1,514	1	2,194
Alaska	70	0	38	0	108
Arizona	416	5	271	0	692
Arkansas	226	5	1,300	0	1,531
California	3,645	100	1,194	0	4,939
Colorado	770	10	706	0	1,486
Connecticut	211	42	8	0	261
Delaware	19	0	134	0	153
Dist Of Columbia	0	0	12	0	12
Florida	962	50	464	0	1,476
Georgia	1,460	8	1,426	0	2,894
Idaho	294	10	1,138	0	1,442
Illinois	525	111	5,205	0	5,841
Indiana	272	36	2,695	1	3,004
Iowa	679	15	3,605	0	4,299
Kansas	265	5	4,078	0	4,348
Kentucky	474	25	2,434	0	2,933
Louisiana	405	31	2,929	0	3,365
Maine	292	15	627	0	934
Maryland	142	8	596	0	746
Massachusetts	174	13	351	0	538
Michigan	316	33	2,464	0	2,813
Minnesota	1,106	16	2,027	0	3,149
Mississippi	196	3	1,891	0	2,090
Missouri	253	26	3,022	0	3,301
Montana	509	9	1,534	0	2,052
Nebraska	147	6	2,675	0	2,828
Nevada	104	4	131	1	240
New Hampshire	49	4	291	0	344
New Jersey	159	14	436	0	609
New Mexico	236	3	365	0	604
New York	294	31	2,888	0	3,213
North Carolina	1,313	17	2,339	0	3,669
North Dakota	303	1	1,806	0	2,110
Ohio	341	44	3,784	0	4,169
Oklahoma	253	9	1,518	0	1,780
Oregon	952	24	1,950	1	2,927
Pennsylvania	767	28	2,673	0	3,468
Rhode Island	41	1	29	0	71
South Carolina	1,019	9	445	0	1,473
South Dakota	233	1	1,122	1	1,357
Tennessee	341	11	1,625	0	1,977
Texas	1,394	80	5,140	0	6,614
Utah	175	5	622	0	802
Vermont	75	5	607	0	687
Virginia	380	28	2,842	0	3,250
Washington	615	17	2,579	0	3,211
West Virginia	318	9	2,085	0	2,412
Wisconsin	420	20	2,566	0	3,006
Wyoming	305	5	618	0	928
Puerto Rico	1	1	0	0	2
FINAL TOTALS	24,577	971	82,799	5	108,352

**TABLE 74. PRIVATE CROSSINGS AT-GRADE BY TYPE DEVELOPMENT AND WARNING DEVICE, 1993**

State	Signs	Signals	No Signs or Signals	Unknown	Total
Farm.....	11,161	92	54,616	0	65,869
Residential..	3,951	75	8,641	0	12,667
Recreational	678	25	940	0	1,643
Industrial..	8,243	756	16,352	5	25,356
Unknown.....	544	23	2,250	0	2,817
FINAL TOTALS	24,577	971	82,799	5	108,352

TABLE 75. PRIVATE CROSSINGS AT-GRADE BY RAILROAD AND TYPE DEVELOPMENT, 1993

Railroad	Farm	Residential	Recreational	Industrial	Unknown	Total
Alaska Railroad Corp.	4	14	5	85	0	108
Allegheny and Eastern Railroad	40	16	5	21	0	82
Amtrak (Nat'l Railroad Passenger Corp.)	36	14	4	16	1	71
Arkansas & Missouri Railroad Co.	65	16	0	11	0	92
Arkansas Midland Railroad Co., Inc.	54	9	1	28	0	92
Atchison, Topeka & Santa Fe Railway Co.	2,578	214	22	1,141	2	3,957
Atlanta & Saint Andrews Bay Railway Co.	21	16	2	26	5	70
Austin & Northwestern Railroad	83	11	2	12	0	108
Bangor & Aroostook Railroad	184	35	48	118	0	385
Bessemer & Lake Erie Railroad Co.	38	12	2	44	0	96
Boston & Maine Corp.	147	58	18	195	0	418
Buffalo & Pittsburgh Railroad, Inc.	162	67	12	40	0	281
Burlington Northern Railroad Co.	9,239	1,044	131	2,283	2	12,699
Camas Prairie Railroad Co.	83	4	1	23	0	111
Canadian Pacific Railway Co.	105	11	22	44	0	182
Cedar Rapids & Iowa City Railway Co.	53	16	1	22	0	92
Cedar River Railroad Co.	86	9	2	7	0	104
Central Kansas Railway, Inc.	445	51	0	54	0	550
Central Michigan Railway Co.	74	23	2	88	0	187
Central Vermont Railway, Inc.	159	30	7	47	0	243
Chehalis Western	62	10	0	24	0	96
Chicago & North Western Transportation Co.	3,043	253	47	844	0	4,187
Chicago Missouri & Western Railway	92	3	0	20	0	115
Chicago, Central & Pacific Railroad Co.	524	24	3	149	0	700
Columbus & Greenville Railway Co.	242	39	0	29	0	310
Consolidated Rail Corp.	4,340	933	222	2,164	2	7,661
CSX Transportation	5,636	1,988	160	2,832	849	11,465
Dakota, Minnesota & Eastern Railroad	480	7	1	67	0	555
Dakota, Missouri Valley & Western Railroad	159	0	0	0	0	159
Delaware & Hudson Railway Co.	304	49	37	55	0	445
Delta Southern Railroad Co.	99	12	0	8	0	119
Denver & Rio Grande Western Railroad Co.	314	176	16	168	4	678
Department of Defense - Other	22	15	1	195	3	236
Detroit & Mackinac Railway Co.	88	64	31	24	0	207
Duluth, Missabe & Iron Range Railway Co.	25	18	1	90	0	134
Eastern Idaho Railroad	163	4	1	103	0	271
Elgin, Joliet & Eastern Railway Co.	61	1	1	39	0	102
Escanaba & Lake Superior Railroad Co.	73	28	30	31	0	162
Florida Central Railroad Co.	5	12	1	16	21	55
Florida East Coast Railway Co.	5	3	1	19	86	114
Fox Valley & Western Ltd.	264	58	14	129	0	465
Gateway Western Railway	135	1	1	19	0	156
Georgia Central Railroad	48	20	3	16	0	87
Georgia Southwestern Railroad Division	111	27	6	22	0	166
Grainbelt Corp.	86	1	1	5	0	93
Grand Trunk Western Railroad Inc.	398	25	4	71	0	498
Great Western Railway Co.	113	4	1	9	0	127
Gulf And Mississippi Railroad Corp.	306	95	3	56	0	460
Hillsdale County Railway Company, Inc.	56	5	1	6	0	68
Houston Belt & Terminal Railway Co.	0	1	0	42	0	43
Huron & Eastern Railway	101	7	2	44	0	154
Idaho Northern & Pacific Railroad Co.	116	5	0	59	0	180
Illinois Central Railroad Co.	1,109	241	8	349	0	1,707
Indiana & Ohio Central Railroad, Inc.	67	4	1	16	0	88
Indiana Hi-Rail Corp.	64	10	1	24	0	99
Indiana Rail Road Co.	103	23	2	24	0	152
Iowa Interstate Railroad	250	22	1	47	0	320
Iowa Northern Railway Co.	97	16	2	4	0	119
Kankakee, Beaverville & Southern Railroad Co.	57	0	1	2	0	60
Kansas City Southern Railway Co.	290	41	5	149	0	485
Kansas City Terminal Railway Co.	82	1	0	17	1	101
Kansas Southwestern Railway	129	7	0	27	0	163
Kiamichi Railroad Company, Inc.	58	25	0	11	0	94
Kyle Railroad Co.	321	22	3	20	0	366
Lamoille Valley Railroad Co.	88	3	8	7	0	106
Long Island Rail Road	67	4	3	8	0	82
Louisiana & Arkansas Railway Co.	446	63	1	70	0	580

**TABLE 75. PRIVATE CROSSINGS AT-GRADE BY RAILROAD AND TYPE DEVELOPMENT, CONT., 1993**

Railroad	Farm	Residential	Recreational	Industrial	Unknown	Total
Louisiana & Delta Railroad	133	12	1	27	0	173
Maine Department Of Transportation	41	23	3	12	0	79
Maryland & Delaware Railroad Co.	106	14	1	16	0	137
Maryland Dept. Of Transportation	76	11	2	12	0	101
Mass. Bay Transportation Authority	15	8	6	19	0	48
Mid-Atlantic Railroad Co., Inc.	50	48	0	25	0	123
Mid-Michigan Railroad Co.	41	3	4	47	0	95
Midd States Port Authority	156	4	1	9	0	170
Midsouth Railroad Corp.	130	62	0	77	0	269
Missouri & Northern Arkansas Railroad Co.	265	12	0	76	0	353
Monongahela Railway Co.	40	18	2	33	0	93
Montana Rail Link	467	63	15	139	0	684
MNVA Railroad, Inc.	81	14	0	6	0	101
Nashville & Eastern Railroad	126	13	1	11	0	151
Nebraska Central Railroad	218	1	1	16	0	236
New Jersey Transit Rail Operations	44	16	6	31	0	97
New Orleans Lower Coast Railroad, Inc.	20	106	9	45	0	180
New Orleans Public Belt Railroad	0	0	0	156	0	156
New York City Trans. Authority (MTA)	6	0	1	8	0	15
New York, Susquehanna & Western Railroad Co.	149	30	2	42	0	223
Norfolk Southern Corp.	6,193	2,285	79	2,051	1,522	12,130
North Carolina Department Of Transportation	39	68	0	15	0	122
Northeast Kansas & Missouri	103	3	0	0	0	106
Northwestern Pacific Railroad Co.	110	21	2	46	0	179
Ohio Central Railroad Co.	121	4	0	23	0	148
Oklahoma Department Of Transportation	80	17	0	8	0	105
Oklahoma Kansas & Texas Railroad Co.	88	5	1	16	0	110
Paducah & Louisville Railway Co.	118	30	1	36	0	185
Pittsburgh & Lake Erie Railroad Co.	1	29	5	64	0	99
Prairie Trunk Railway	54	3	1	3	0	61
Providence & Worcester Railroad Co.	46	17	12	48	0	123
Rahway Valley Railroad Co.	19	11	0	24	0	54
Red River Valley & Western Railroad	293	4	0	19	0	316
Seminole Gulf Railroad	7	1	1	13	9	31
Soo Line Railroad Co.	1,998	236	49	454	0	2,737
South Carolina Central Railroad Co., Inc.	38	25	0	23	0	86
South Dakota Railroad Authority	217	41	2	22	0	282
South Kansas & Oklahoma Railroad Co.	212	9	0	24	0	245
South Orient Railroad Company, Ltd.	156	4	1	12	0	173
Southeastern Pennsylvania Transportation	22	12	2	17	0	53
Southern Pacific Transportation Co.	2,988	549	120	2,518	89	6,264
Southern Pacific, Chicago-St. Louis Corp.	61	6	0	25	0	92
Springfield Terminal Railway Co. (Vermont)	113	31	6	141	0	291
St. Louis Southwestern Railway Co.	617	75	4	87	0	783
State Subsidy	64	32	12	31	0	139
Tennessee Southern Railroad Co., Inc.	52	5	0	8	0	65
Terminal Railroad Association Of St. Louis	3	0	0	9	0	12
Texas & Oklahoma Railroad Co.	135	2	0	6	0	143
Texas Mexican Railway Co.	117	18	2	57	1	195
Texas Northeastern Division--Mid-Michigan	94	7	1	13	0	115
Toledo, Peoria & Western Railway Corp.	192	21	0	57	0	270
Tulare Valley Railroad Co.	141	4	0	87	0	232
Tuscola & Saginaw Bay Railroad Co., Inc.	106	51	6	80	0	243
Twin City & Western Railroad	102	2	1	2	0	107
Union Pacific Railroad Co.	7,651	830	64	2,160	106	10,811
Vermont Railway, Inc.	100	20	4	30	0	154
Washington Central Railroad Co.	202	66	6	70	0	344
Wheeling & Lake Erie Railway Co.	237	43	6	171	0	457
Wisconsin & Southern Railroad Co.	276	4	5	31	0	316
Wisconsin Central Ltd. (also Railway)	719	118	23	347	0	1,207
All Unknown Railroads	5,465	1,460	260	3,266	114	10,565
<b>FINAL TOTALS</b>	<b>65,869</b>	<b>12,667</b>	<b>1,643</b>	<b>25,356</b>	<b>2,817</b>	<b>108,352</b>

TABLE 76. PRIVATE CROSSINGS AT-GRADE BY RAILROAD AND TYPE WARNING DEVICE, 1993

Railroad	Signs	Signals	No Signs or Signals	Unknown	Total
Alaska Railroad Corp.	70	0	38	0	108
Allegheny and Eastern Railroad	10	1	71	0	82
Amtrak (Nat'l Railroad Passenger Corp.)	33	8	30	0	71
Arkansas & Missouri Railroad Co.	3	0	89	0	92
Arkansas Midland Railroad Co., Inc.	4	0	88	0	92
Atchison, Topeka & Santa Fe Railway Co.	1,205	46	2,706	0	3,957
Atlanta & Saint Andrews Bay Railway Co.	40	0	30	0	70
Austin & Northwestern Railroad	14	0	94	0	108
Bangor & Aroostook Railroad	86	5	294	0	385
Bessemer & Lake Erie Railroad Co.	11	0	85	0	96
Boston & Maine Corp.	85	13	320	0	418
Buffalo & Pittsburgh Railroad, Inc.	23	0	258	0	281
Burlington Northern Railroad Co.	2,810	113	9,775	1	12,699
Camas Prairie Railroad Co.	16	1	94	0	111
Canadian Pacific Railway Co.	53	2	127	0	182
Cedar Rapids & Iowa City Railway Co.	11	0	81	0	92
Cedar River Railroad Co.	81	0	23	0	104
Central Kansas Railway, Inc.	38	0	512	0	550
Central Michigan Railway Co.	15	0	172	0	187
Central Vermont Railway, Inc.	65	8	170	0	243
Chehalis Western	21	0	75	0	96
Chicago & North Western Transportation Co.	504	20	3,663	0	4,187
Chicago Missouri & Western Railway	5	0	110	0	115
Chicago, Central & Pacific Railroad Co.	267	2	431	0	700
Columbus & Greenville Railway Co.	5	0	305	0	310
Consolidated Rail Corp.	950	77	6,634	0	7,661
CSX Transportation	4,193	154	7,118	0	11,465
Dakota, Minnesota & Eastern Railroad	53	0	501	1	555
Dakota, Missouri Valley & Western Railroad	12	0	147	0	159
Delaware & Hudson Railway Co.	33	9	403	0	445
Delta Southern Railroad Co.	11	0	108	0	119
Denver & Rio Grande Western Railroad Co.	569	3	106	0	678
Department of Defense - Other	146	0	90	0	236
Detroit & Mackinac Railway Co.	28	0	179	0	207
Duluth, Missabe & Iron Range Railway Co.	120	2	12	0	134
Eastern Idaho Railroad	38	2	231	0	271
Elgin, Joliet & Eastern Railway Co.	18	6	78	0	102
Escanaba & Lake Superior Railroad Co.	15	2	145	0	162
Florida Central Railroad Co.	51	1	3	0	55
Florida East Coast Railway Co.	55	5	54	0	114
Fox Valley & Western Ltd.	60	3	402	0	465
Gateway Western Railway	5	0	151	0	156
Georgia Central Railroad	84	0	3	0	87
Georgia Southwestern Railroad Division	126	0	40	0	166
Grainbelt Corp.	2	1	90	0	93
Grand Trunk Western Railroad Inc.	35	12	451	0	498
Great Western Railway Co.	43	0	84	0	127
Gulf And Mississippi Railroad Corp.	36	0	424	0	460
Hillsdale County Railway Co., Inc.	1	0	67	0	68
Houston Belt & Terminal Railway Co.	5	0	38	0	43
Huron & Eastern Railway	4	0	150	0	154
Idaho Northern & Pacific Railroad Co.	37	2	141	0	180
Illinois Central Railroad Co.	231	21	1,455	0	1,707
Indiana & Ohio Central Railroad, Inc.	2	0	86	0	88
Indiana Hi-Rail Corp.	5	0	94	0	99
Indiana Rail Road Co.	10	0	142	0	152
Iowa Interstate Railroad	33	3	284	0	320
Iowa Northern Railway Co.	6	0	113	0	119
Kankakee, Beaverville & Southern Railroad Co.	1	1	58	0	60
Kansas City Southern Railway Co.	88	4	393	0	485
Kansas City Terminal Railway Co.	16	0	85	0	101
Kansas Southwestern Railway	3	0	160	0	163
Kiamichi Railroad Co., Inc.	17	0	77	0	94
Kyle Railroad Co.	8	0	358	0	366
Lamoille Valley Railroad Co.	4	0	102	0	106
Long Island Rail Road	3	5	74	0	82
Louisiana & Arkansas Railway Co.	59	4	517	0	580

TABLE 76. PRIVATE CROSSINGS AT-GRADE BY RAILROAD AND WARNING DEVICE, CONT., 1993

Railroad	Signs	Signals	No Signs or Signals	Unknown	Total
Louisiana & Delta Railroad	11	0	162	0	173
Maine Department Of Transportation	26	0	53	0	79
Maryland & Delaware Railroad Co.	5	0	132	0	137
Maryland Dept. Of Transportation	3	0	98	0	101
Mass. Bay Transportation Authority	24	0	24	0	48
Mid-Atlantic Railroad Co., Inc.	110	0	13	0	123
Mid-Michigan Railroad Co.	6	0	89	0	95
Midd States Port Authority	14	0	156	0	170
Midsouth Railroad Corp.	39	0	230	0	269
Missouri & Northern Arkansas Railroad Co.	26	0	327	0	353
Monongahela Railway Co.	33	0	60	0	93
Montana Rail Link	149	4	531	0	684
MNVA Railroad, Inc.	8	0	93	0	101
Nashville & Eastern Railroad	2	0	149	0	151
Nebraska Central Railroad	6	0	230	0	236
New Jersey Transit Rail Operations	37	3	57	0	97
New Orleans Lower Coast Railroad, Inc.	8	1	171	0	180
New Orleans Public Belt Railroad	24	0	132	0	156
New York City Trans. Authority (MTA)	8	0	7	0	15
New York, Susquehanna & Western Railroad Co.	27	2	194	0	223
Norfolk Southern Corp.	1,694	52	10,383	1	12,130
North Carolina Department Of Transportation	11	0	111	0	122
Northeast Kansas & Missouri	1	0	105	0	106
Northwestern Pacific Railroad Co.	172	2	5	0	179
Ohio Central Railroad Co.	28	0	120	0	148
Oklahoma Department Of Transportation	11	0	94	0	105
Oklahoma Kansas & Texas Railroad Co.	14	1	95	0	110
Paducah & Louisville Railway Co.	44	3	138	0	185
Pittsburgh & Lake Erie Railroad Co.	60	6	33	0	99
Prairie Trunk Railway	3	0	58	0	61
Providence & Worcester Railroad Co.	76	7	40	0	123
Rahway Valley Railroad Co.	20	0	34	0	54
Red River Valley & Western Railroad	45	0	271	0	316
Seminole Gulf Railroad	23	0	8	0	31
Soo Line Railroad Co.	242	18	2,477	0	2,737
South Carolina Central Railroad Co., Inc.	79	0	7	0	86
South Dakota Railroad Authority	21	1	260	0	282
South Kansas & Oklahoma Railroad Co.	21	0	224	0	245
South Orient Railroad Company, Ltd.	44	0	129	0	173
Southeastern Pennsylvania Transportation	1	1	51	0	53
Southern Pacific Transportation Co.	2,788	104	3,372	0	6,264
Southern Pacific, Chicago-St. Louis Corp.	7	2	83	0	92
Springfield Terminal Railway Co. (Vermont)	110	9	172	0	291
St. Louis Southwestern Railway Co.	189	4	590	0	783
State Subsidy	41	0	98	0	139
Tennessee Southern Railroad Co., Inc.	1	2	62	0	65
Terminal Railroad Association Of St. Louis	4	0	8	0	12
Texas & Oklahoma Railroad Co.	3	0	140	0	143
Texas Mexican Railway Co.	18	22	155	0	195
Texas Northeastern Division--Mid-Michigan	14	0	101	0	115
Toledo, Peoria & Western Railway Corp.	16	0	254	0	270
Tulare Valley Railroad Co.	176	0	56	0	232
Tuscola & Saginaw Bay Railroad Co., Inc.	18	0	225	0	243
Twin City & Western Railroad	2	0	105	0	107
Union Pacific Railroad Co.	1,601	79	9,131	0	10,811
Vermont Railway, Inc.	17	3	134	0	154
Washington Central Railroad Co.	65	0	279	0	344
Wheeling & Lake Erie Railway Co.	84	2	371	0	457
Wisconsin & Southern Railroad Co.	13	0	303	0	316
Wisconsin Central Ltd. (also Railway)	200	3	1,004	0	1,207
All Unknown Railroads	3,343	104	7,116	2	10,565
FINAL TOTALS	24,577	971	82,799	5	108,352

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**APPENDIX A**  
**REPORTING**  
**REQUIREMENTS**  
**AND**  
**DEFINITIONS**

## **ACCIDENT/INCIDENT REPORTABILITY REQUIREMENTS**

The rules governing monthly reporting of railroad accidents/incidents in effect in 1992 define a reportable accident/incident as an event arising from the operation of a railroad that results in one or more stated circumstances.

- (a) An impact occurs between railroad on-track equipment and an automobile, bus, truck, motorcycle, bicycle, farm vehicle, pedestrian or other highway user at a highway-rail crossing.
- (b) Any collision, derailment, fire, explosion, act of **GOD** or other event involving the operation of railroad on-track equipment (standing or moving) which results in more than \$6,300 in damages to railroad on-track equipment, signals, track and/or track structures, and roadbed.
- (c) Any event arising from the operation of a railroad which results in:
  - (i) death of one or more persons;
  - (ii) injury to one or more persons, other than railroad employees, requiring medical treatment;
  - (iii) injury to one or more employees requiring medical treatment or resulting in restriction of work or motion for one or more days, one or more lost work days, transfer to another job, termination of employment or loss of consciousness;
  - (iv) any occupational illness of railroad employee diagnosed by a physician.

## **DEFINITIONS**

**Annual Average Daily Traffic.** An estimate of the annual average daily highway traffic in both traffic directions.

**Active Warning Devices.** A warning system activated by an approaching train: gates, flashing lights, highway signal, wigwags, or bells.

**Car.** A railway car designed to carry freight, railroad personnel, or passengers. This includes boxcars, covered hopper cars, flatcars, refrigerator cars, gondola cars, hopper cars, tank cars, cabooses, stock cars, ventilation cars, and special cars. Also includes on-track maintenance equipment.

**Class I Railroad.** A railroad with an annual gross operating revenue in excess of \$250 million based on 1991 dollars.

**Commercial Power.** A source of commercial power within 500 feet of a crossing.

**Consist.** On-track railroad equipment such as a train, locomotive, group of railroad cars, or a single railcar not coupled to another car or to a locomotive.

**Contractor Employee.** A person employed by a contractor hired by a railroad to perform normal maintenance work to railroad rolling stock, track structure, bridges, buildings, etc.

**Crossing Surfaces.**

1. **Sectional treated timber.** Prefabricated units approximately eight feet long, made of treated timber, individually installed, and removable for maintenance and replacement purpose.
2. **Full wood plank.** A wood surface, other than sectional treated timber, covering the entire crossing area above crossties.
3. **Asphalt.** A surface over the entire crossing area or the area between plants or other material which forms flangeway openings with or without single planks on the outside of running rails.
4. **Concrete slab.** Precast concrete slabs which are installed and individually removable for maintenance and replacement.
5. **Concrete pavement.** A continuous concrete surface over the track area which cannot be removed except by destruction of the surface.

6. **Rubber slabs.** Performed rubber sections which can be installed and removed individually for maintenance and replacement.
7. **Metal sections.** Performed sections of steel or other metal which can be individually installed and removed for maintenance and replacement.
8. **Other metal.** A crossing area completed with covered rails or other permanent metal materials in limited sectional units.
9. **Unconsolidated.** Ballast or other unconsolidated material placed above the tops of crossties with or without planks on one or both sides of running rail.

**Daylight Train Movements.** Train movements between 6 a.m. and 6 p.m.

**Employee.** A person engaged in railroad operations who works for a railroad company in return for financial or other compensation.

**Employee Not On Duty.** A railroad employee who is on railroad property for a purpose connected with his or her employment or with other railroad permission, but who is not engaged in rail operations for financial or other compensation.

**Fatality.** The death of a person resulting from an injury incurred during railroad operations or resulting from an occupational illness if death occurs within 365 days of initial diagnosis.

**Highway-rail Crossing.** A location where one or more railroad tracks intersect a public or private thoroughfare, a sidewalk, or a pathway.

**Highway Signals.** Train-activated highway lights (red-amber-green) that control highway traffic over the crossing.

**Locomotive.** A self-propelled unit of on-track equipment designed for moving other rail freight and passenger equipment on rail tracks, including self-propelled units.

**Main Track.** Any track other than auxiliary track that extends through railroad yards or between stations and over which trains operate by time-table and/or train orders or the use of the track is governed by a signal system.

**Maximum Timetable Speed.** Maximum train speed permitted over a crossing.

**Nearby Intersecting Highway.** A highway intersection within 75 feet of the crossing.

**Night Train Movements.** Train movements between 6 p.m. and 6 a.m.

**Nontrespassers.** A person who is lawfully on any part of railroad property which is

used in railroad operations or a person who is adjacent to railroad premises when injured as the result of railroad operations.

**Number Of Crossbucks.** Masts with crossbucks; a mast with two or more crossbucks is counted as one. A crossbuck on an active device is not counted.

**On-Track Equipment.** Railroad rolling stock used to transport freight or passenger. It includes locomotives, railroad cars, maintenance equipment, and one or more locomotives coupled to one or more cars.

**Other Signs.** Signs other than crossbucks or stop signs.

**Other Stop Signs.** Stop signs other than standard highway stop signs.

**Passenger.** A person who is on, boarding, or alighting from a railroad car for the purpose of travel, without participating in its operation.

**Passive Warning Device.** A warning system not automatically activated by an approaching train: signs (crossbucks or standard highway signs) or special warning devices (manually operated gates, flood lights, etc.).

**Pavement Markings.** Markings prescribed or generally similar to those in highway traffic manuals, in particular, stoplines and railroad crossing symbols.

**Percentage Trucks.** The percentage of total daily highway traffic represented by trucks.

**Public Crossing.** A location open to public travel where railroad tracks cross a road that is under the jurisdiction and maintenance of a public authority.

**Railroad.** Any surface transportation system which carries passengers, goods, materials, or property over rails.

**Railroad Advance Warning.** Advance warning signs on any highway approach.

**Rural Crossing.** A crossing classification derived from the Functional Classification Code.

**Signals For Train Operation.** Automatic signals or interlocks which control train operations in the vicinity of a crossing.

**Smallest Crossing Angle.** The smallest angle between the highway and the track.

**Special Warning Devices.** Non-train-activated devices other than signs including manually operated gates, train crews flagging a crossing, watchmen, and flood lights.

**Speed Selection For Trains.** A uniform warning time for the speed range of trains

normally encountered at the crossing.

**Standard Highway Stop Sign.** Octagonal red sign with white lettering **STOP**.

**Stop Signs.** The standard highway stop sign or other stop signs.

**Switch Trains.** All trains other than thru trains, including locals, industrial runs, and switch engines.

**Thru Trains.** Trains whose primary responsibility is to move cars over the road; they may have a limited number of pickups and setouts along the route.

**Total Train Movements.** All train movements for the reporting company and all other railroads operating over the crossing.

**Traffic Lanes.** Number of highway traffic lanes not including shoulders or parking lanes.

**Trespasser.** Any person whose presence on railroad property used in railroad operations, is prohibited or unlawful.

**Truck Pullout Lane.** A special lane designed to accommodate vehicles which are required to stop at a crossing.

**Type of Development.**

1. **Open space.** An area that is undeveloped, sparsely developed, very lightly populated, or agricultural.
2. **Residential.** An area comprised of private residences.
3. **Commercial.** An area with retail stores, businesses, offices, and personal service offices.
4. **Industrial.** An area with manufacturing, construction, heavy products, factories, and warehouses.
5. **Institutional.** An area with schools, churches, hospitals, parks, and other community facilities.

**Urban Crossing.** A crossing classification derived from the Functional Classification Code.

**Warning Device Category.** At crossings which have more than one warning device, the warning category is determined by the following method:

Highest	8)	Gates <sup>1</sup>
	7)	Flashing lights <sup>1</sup>
	6)	Highway signals, wigwags or bells
	5)	Special warning devices
	3)	Stop signs
	4)	Crossbucks
	2)	Other signs
Lowest	1)	No signs or signals

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<sup>1</sup>When cantilevered flashing lights are categorized separately, they are ranked eighth and gates are ranked ninth.





**APPENDIX B**  
**REPORTING**  
**FORMS**

## **FORMS**

**Three separate forms may be required to properly report a highway-rail crossing accident/incident:**

**FRA F 6180-57 Grade Crossing Accident/Incident Report**  
**FRA F 6180-55 Railroad Injury and Illness Summary**  
**FRA F 6180-54 Rail Equipment Accident/Incident Report**

**For all reportable highway-rail crossing accidents/incidents, Form FRA F 6180-57 must be submitted by the carrier which has on-track equipment involved. If reportable casualties result, they must be individually reported on Form F 6180-55. If the accident resulted in more than \$6,300 in damages to railroad on-track equipment, signals, track, track structures, or roadbed, Form FRA 6180-54 must also be submitted.**

DEPARTMENT OF TRANSPORTATION  
FEDERAL RAILROAD ADMINISTRATION  
**RAILROAD INJURY AND ILLNESS SUMMARY**

*Form Approved*  
OMB No. 04-R4009

1. NAME OF REPORTING RAILROAD	2. ALPHABETIC CODE	3. REPORT MONTH & YEAR	4. STATE ALPHABETIC CODE	5. COUNTY
NAME OF REPORTING OFFICER			OFFICIAL TITLE	
ADDRESS			TELEPHONE (Area Code) (Number)	

6. I, \_\_\_\_\_, being first duly sworn, do say upon my oath that I am \_\_\_\_\_, of the railroad aforesaid and as such officer of the said railroad it is my duty to have supervision over the record of reportable incidents arising from the operation of the said railroad, and that I have caused to be compiled from the said record and to be carefully examined the annexed report of such incidents occurring during the month named at the head of this sheet; and that the said report is true and complete to the best of my knowledge and belief.

Subscribed and sworn to before me, a notary public in and for the State and County aforesaid, this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_.

(Use an impression seal) \_\_\_\_\_  
[L.S] \_\_\_\_\_  
\_\_\_\_\_  
(Notary Public) \_\_\_\_\_ (Signature of affiant)

7. **MILES RUN DURING MONTH**

A. LOCOMOTIVE TRAIN MILES	B. MOTOR TRAIN MILES	C. YARD SWITCHING MILES	D. TOTAL
---------------------------	----------------------	-------------------------	----------

8.

A. EMPLOYEE MANHOURS WORKED	B. PASSENGER MILES OPERATED	C. NUMBER OF PASSENGERS TRANSPORTED
TOTAL TRAIN ACCIDENTS	TOTAL FRA FORMS 6180-55A	TOTAL FRA FORMS 6180-54
		TOTAL FRA FORMS 6180-57

SECTION A—RECAPITULATION OF ALL CASUALTIES INCLUDING HIGHWAY GRADE CROSSING ACCIDENT/INCIDENT CASUALTIES								CLASS OF PERSON FOR SECTIONS A AND B	SECTION B—RECAPITULATION OF ALL HIGHWAY GRADE CROSSING ACCIDENT/INCIDENT CASUALTIES							
TRAIN ACCIDENTS		TRAIN INCIDENTS		NONTRAIN INCIDENTS		TOTAL			TRAIN ACCIDENTS		TRAIN INCIDENTS		NONTRAIN INCIDENTS		TOTAL	
Kld	Inj	Kld	Inj	Kld	Inj	Kld	Inj		Kld	Inj	Kld	Inj	Kld	Inj	Kld	Inj
								1. Employees on duty								
								2. Employees not on duty								
								3. Passengers on trains								
								4. Other nontrespassers								
								5. Trespassers (all classes)								
								6. Contractor Employees								
								7. GRAND TOTAL								

**SECTION C—MEMORANDUM—SUBSEQUENT FATALITIES DEVELOPED FROM REPORTED CASUALTIES**

LINE NO.	ACCIDENT/INCIDENT NUMBER	TYPE PERSON OR JOB CODE	DATE OF INJURY	DATE OF DEATH	STATE
1.					
2.					
3.					
4.					

FORM FRA F 6180-55 (8-76) REPLACES FORM FRA F 6180-55 (12-74) WHICH IS OBSOLETE.

*This report is required by law (45 USC 40). Failure to report can result in the imposition of civil penalties.*



# RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT

1. NAME OF REPORTING RAILROAD		Amtrak Autotrain	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
2. NAME OF OTHER RAILROAD INVOLVED IN TRAIN ACCIDENT/INCIDENT			2a. Alphabetic Code	2b. Railroad Accident/Incident No.
3. NAME OF RAILROAD RESPONSIBLE FOR TRACK MAINTENANCE (single entry)			3a. Alphabetic Code	3b. Railroad Accident/Incident No.
4. U. S. DOT-AAR GRADE CROSSING IDENTIFICATION NUMBER			5. DATE OF ACCIDENT/INCIDENT month   day   year	6. TIME OF ACCIDENT/INCIDENT am <input type="checkbox"/> pm <input type="checkbox"/>
7. TYPE OF ACCIDENT/INCIDENT (enter number in code box, single entry)				
1. Derailment    3. Rear end collision    5. Raking collision    7. Rail-Hwy crossing    9. Obstruction    11. Fire or violent rupture    12. Other (specify) _____ 2. Head on collision    4. Side collision    6. Broken train collision    8. RR grade crossing    10. Explosion-Detonation				

**HAZARDOUS MATERIALS (number of)**

8. CARS CARRYING	9. CARS DAMAGED OR DERAILED	10. CARS WHICH RELEASED HAZ. MAT.	11. PEOPLE EVACUATED (est.)
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**LOCATION**

12. DIVISION	13. NEAREST STATION	14. MILEPOST (to nearest tenth)	15. STATE (two letter code) CODE
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**ENVIRONMENTAL CONDITIONS**

16. TEMPERATURE (specify if minus) °F	17. VISIBILITY (single entry) CODE 1. Dawn    3. Dusk 2. Day    4. Dark	18. WEATHER (single entry) CODE 1. Clear    2. Cloudy    3. Rain    4. Fog    5. Sleet    6. Snow
---------------------------------------	-------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

**OPERATIONAL DATA**

19. METHOD (place X in appropriate box(es))	1. <input type="checkbox"/> Manual block	4. <input type="checkbox"/> Automatic block	7. <input type="checkbox"/> Yard rules	10. <input type="checkbox"/> Auto. train control	13. <input type="checkbox"/> Other (specify)
	2. <input type="checkbox"/> Interlocking	5. <input type="checkbox"/> Traffic control	8. <input type="checkbox"/> Time table	11. <input type="checkbox"/> Verbal permission	
	3. <input type="checkbox"/> Cab signal	6. <input type="checkbox"/> Auto. train stop	9. <input type="checkbox"/> Radio	12. <input type="checkbox"/> Train orders	

20. SPEED (recorded speed, if available) Est. MPH   Recorded MPH	21. TRAIN NUMBER	22. TIME TABLE DIRECTION CODE 1. North    2. South    3. East    4. West
------------------------------------------------------------------	------------------	-----------------------------------------------------------------------------

**EQUIPMENT**

23. TRAILING TONS (gross tonnage, excluding power units)	24. TYPE OF EQUIPMENT CONSIST (single entry) CODE 1. Freight train    3. Mixed train    5. Single car    7. Yard/switching 2. Passenger train    4. Work train    6. Cut of cars    8. Light loco(s)	25. WAS THE EQUIPMENT IDENTIFIED IN ITEM 24 UNATTENDED? CODE 1. Yes    2. No	
26. TRACK NUMBER OR NAME	27. FRA TRACK CLASSIFICATION	28. ANNUAL TRACK DENSITY (gross tons in millions)	29. TYPE OF TRACK CODE 1. Main    3. Siding 2. Yard    4. Industry

30. PRINCIPLE CAR/UNIT	30a. Initial and Number	30b. Position in Train	30c. Loaded (yes or no)
(1) First Involved (derailed, struck, striking, etc.)			
(2) Causing (mechanical failures)			

31. LOCOMOTIVE UNITS (no. of)	a. Head End	b. Manual	c. Remote	d. Manual	e. Remote	32. CARS (no. of)	Loaded	Empty	e. Caboose	
(1) Total in Train						(1) Total in Equipment Consist	a. Freight	b. Pass.	c. Freight	d. Pass.
(2) Total Derailed						(2) Total Derailed				

**PROPERTY DAMAGE (estimated cost, including labor, to repair or replace)**

33. EQUIPMENT DAMAGE (to be reported for this equipment consist only) \$	34. TRACK, SIGNAL, WAY AND STRUCTURES DAMAGE (to be reported by railroad in item 3 only) \$
--------------------------------------------------------------------------	---------------------------------------------------------------------------------------------

**ACCIDENT/INCIDENT CAUSE CODE**

35. PRIMARY CAUSE CODE	36. CONTRIBUTING CAUSE CODE	37. If no code available, explain cause.
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**CASUALTIES**

38. NUMBER OF PERSONS INJURED	39. ESTIMATED TOTAL DAYS DISABILITY	40. NUMBER OF FATALITIES
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**CREW (no. of)**

**HOURS ON DUTY**

41. ENGINEERS	42. FIREMEN	43. CONDUCTORS	44. BRAKEMEN	45. ENGINEER Hrs:   Mins:	46. CONDUCTOR Hrs:   Mins:
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47. TYPED NAME AND TITLE	48. SIGNATURE	49. DATE
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50. NARRATIVE DESCRIPTION - Describe the cause, nature and circumstances of accident/incident

# RAIL-HIGHWAY GRADE CROSSING ACCIDENT/INCIDENT REPORT

1. NAME OF REPORTING RAILROAD		Amtrak Autotrain	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
2. NAME OF OTHER RAILROAD INVOLVED IN TRAIN ACCIDENT/INCIDENT			2a. Alphabetic Code	2b. Railroad Accident/Incident No.
3. NAME OF RAILROAD RESPONSIBLE FOR TRACK MAINTENANCE (single entry)			3a. Alphabetic Code	3b. Railroad Accident/Incident No.
4. U. S. DOT-AAR GRADE CROSSING IDENTIFICATION NUMBER		5. DATE OF ACCIDENT/INCIDENT month      day      year		6. TIME OF ACCIDENT/INCIDENT am <input type="checkbox"/> pm <input type="checkbox"/>
<b>LOCATION</b>				
7. NEAREST RAILROAD STATION		8. COUNTY		9. STATE (two letter code)      CODE
10. CITY (if in a city)		11. HIGHWAY NAME OR NUMBER (if private crossing, so state)		
<b>ACCIDENT/INCIDENT SITUATION</b>				
12. TYPE 1. Auto      3. Truck-Trailer      6. Motorcycle 2. Truck      4. Bus      7. Pedestrian 5. School Bus      8. Other (specify)			CODE	16. EQUIPMENT 1. Train (units pulling)      3. Train (standing)      6. Light loco(s) (moving) 2. Train (units pushing)      4. Car(s) (moving)      7. Light loco(s) (standing) 5. Car(s) (standing)      8. Other (specify)
13. SPEED (estimated mph at impact)		14. DIRECTION (geographical) 1. North      3. East 2. South      4. West	CODE	17. POSITION OF CAR/UNIT IN TRAIN      CODE
15. POSITION 1. Stalled on crossing      2. Stopped on crossing      3. Moving over crossing		CODE	18. CIRCUMSTANCE 1. Train struck highway user      2. Train struck by highway user      CODE	
19. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?      1. Highway user      2. Rail equipment      3. Both      4. Neither      CODE				
<b>ENVIRONMENT</b>				
20. TEMPERATURE (specify, if minus)      °F		21. VISIBILITY (single entry) 1. Dawn      3. Dusk 2. Day      4. Dark		CODE
22. WEATHER (single entry) 1. Clear      3. Rain      5. Sleet 2. Cloudy      4. Fog      6. Snow      CODE				
<b>TRAIN AND TRACK</b>				
23. TYPE OF TRAIN 1. Freight      3. Mixed      5. Yard/Switching 2. Passenger      4. Work      6. Light Locomotive(s)		CODE	24. TRACK TYPE USED BY TRAIN INVOLVED 1. Main      3. Siding 2. Yard      4. Industry      CODE	
25. TRACK NUMBER OR NAME		26. FRA TRACK CLASSIFICATION		27. NUMBER OF LOCOMOTIVE UNITS
28. NUMBER OF CARS		29. TRAIN SPEED (recorded speed, if available) MPH      Est      Recorded		30. TIME TABLE DIRECTION 1. North      3. East 2. South      4. West      CODE
<b>CROSSING WARNING</b>				
31. TYPE (place X in appropriate box(es)) 1. <input type="checkbox"/> Gates      5. <input type="checkbox"/> Hwy. Traffic Signals      9. <input type="checkbox"/> Watchman 2. <input type="checkbox"/> Cantilever FLS      6. <input type="checkbox"/> Audible      10. <input type="checkbox"/> Flagged by crew 3. <input type="checkbox"/> Standard FLS      7. <input type="checkbox"/> Crossbucks      11. <input type="checkbox"/> Other (specify) 4. <input type="checkbox"/> Wig Wags      8. <input type="checkbox"/> Stop Signs      12. <input type="checkbox"/> None		32. SIGNALLED CROSSING WARNING Was the signaled crossing warning identified in item 31 operating? 1. Yes      2. No      CODE		
33. LOCATION OF WARNING 1. Both sides      2. Side of vehicle approach      3. Opposite side of vehicle approach		CODE	34. CROSSING WARNING INTERCONNECTED WITH HIGHWAY SIGNALS 1. Yes      2. No      3. Unknown      CODE	
35. CROSSING ILLUMINATED BY STREET LIGHTS OR SPECIAL LIGHTS 1. Yes      2. No      3. Unknown      CODE				
<b>MOTORIST ACTION</b>				
36. MOTORIST PASSED STANDING HIGHWAY VEHICLE 1. Yes      2. No      3. Unknown      CODE		37. MOTORIST DROVE BEHIND OR IN FRONT OF TRAIN AND STRUCK OR WAS STRUCK BY SECOND TRAIN 1. Yes      2. No      3. Unknown      CODE		
38. MOTORIST 1. Drove around or thru the gate      2. Stopped and then proceeded      3. Did not stop      4. Other (specify)      5. Unknown		CODE		
39. VIEW OF TRACK OBSCURED BY (primary obstruction) 1. Permanent structure      2. Standing railroad equipment      3. Passing train      5. Vegetation      7. Other (specify) 4. Topography      6. Highway vehicles      8. Not obstructed      CODE				
<b>HIGHWAY VEHICLE PROPERTY DAMAGE/CASUALTIES</b>				
40. HIGHWAY VEHICLE PROPERTY DAMAGE (est. dollar damage)		41. DRIVER WAS 1. Killed      2. Injured      3. Uninjured		42. WAS DRIVER IN THE VEHICLE? 1. Yes      2. No      CODE
43. TOTAL NUMBER OF OCCUPANTS KILLED		44. TOTAL NUMBER OF OCCUPANTS INJURED		45. TOTAL NUMBER OF OCCUPANTS (include driver)
46. IS A RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT BEING FILED?      1. Yes      2. No      CODE				
47. TYPED NAME AND TITLE		48. SIGNATURE		49. DATE

# U.S. DOT - AAR CROSSING INVENTORY FORM

### A. INITIATING AGENCY

RAILROAD  STATE

### C. REASON FOR UPDATE:

- CHANGES IN EXISTING CROSSING DATA
- NEW CROSSING
- CLOSED CROSSING

### D. EFFECTIVE DATE

M D Y

### B. CROSSING NUMBER

### Part I Location and Classification of All Crossings (Must Be Completed)

<p>1. Railroad Operating Company <input type="text"/></p> <p>4. State <input type="text"/></p> <p>7. City <input type="text"/></p> <p>10. Street or Road Name <input type="text"/></p> <p>12. Nearest RR Timetable Station <input type="text"/></p>	<p>2. Railroad Division or Region <input type="text"/></p> <p>5. County <input type="text"/></p> <p>8. Nearest City <input type="text"/></p> <p>11. RR I. D. No. <input type="text"/></p> <p>13. Branch or Line Name <input type="text"/></p>	<p>3. Railroad Subdivision or District <input type="text"/></p> <p>6. County Map. Ref. No. <input type="text"/></p> <p>9. Highway Type and No. <input type="text"/></p> <p>14. Railroad Mile Post <input type="text"/></p>
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DO NOT WRITE IN THIS SPACE

State <input type="text"/>	County <input type="text"/>
City <input type="text"/>	Nearest City <input type="text"/>
RR Code <input type="text"/>	Timetable Station <input type="text"/>

15. Pedestrian Crossing  1. at grade  2. RR under  3. RR over

16. Private Vehicle Crossing

A.  1. Farm  2. Residential  3. Recreational  4. Industrial

B.  5. at grade  6. RR under  7. RR over

C.  8. signs-specify

9. signals-specify

0. none

17. Public Vehicle Crossing  1. at grade  2. RR under  3. RR over

### COMPLETE REMAINDER OF FORM ONLY FOR PUBLIC VEHICLE CROSSINGS AT GRADE

### Part II Detailed Information for Public Vehicular at Grade Crossing

1A. Typical Number of Daily Train Movements

Daylight (6 AM to 6 PM)		Night (6 PM to 6 AM)	
thru trains	switching	thru trains	switching
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

1B. Check if Less Than One Movement Per Day  5

2. Speed of Train at Crossing

A. Maximum time table speed  1

B. Typical Speed Range Over Crossing from  2 to  3 mph

3. Type and Number of Tracks  
main  1 other  2 If other specify  3

4. Does Another RR Operate a Separate Track at Crossing?  
 Yes  No Specify: RR  2

5. Does Another RR Operate Over Your Track at Crossing?  
 Yes  No Specify: RR  2

6. Type of Warning Device at Crossing

A. Signs

Crossbucks		Standard Highway Stop Sign	Other Stop Signs	Other Signs: Specify	
reflectORIZED	non-reflectORIZED			Number	Number
<input type="text"/> 01	<input type="text"/> 02	<input type="text"/> 03	<input type="text"/> 04	Number	<input type="text"/> 08

B. Train Activated Devices

Gates		Cantilevered Flashing Lights		Mast Mounted Flashing Lights	Other Flashing Lights Specify	Highway Traffic Signals	Wigwags	Bells	
red & white reflectORIZED	other colored	over traffic lane	not over traffic lane						Number
<input type="text"/> 09	<input type="text"/> 10	<input type="text"/> 11	<input type="text"/> 12	<input type="text"/> 13	<input type="text"/> 14	<input type="text"/> 15	<input type="text"/> 16	<input type="text"/> 17	<input type="text"/> 18

C. Specify Special Warning Device not Train Activated  19

D. No Signs or Signals  20

7. Is Commercial Power Available?  Yes  No

8. Does Crossing Signal Provide Speed Selection for Trains?  Yes  No  N/A

9. Method of Signalling for Train Operation: Is Track Equipped with Signals?  Yes  No

### Part III Physical Data

5. Is Highway Paved?  Yes  No

9. Does Track Run Down A Street?  Yes  No

1. Type of Development  1. Open Sp.  2. Res  3. Comm.  4. Ind.  5. Inst.

6. Pavement Markings  Stoplines  RR Xing Sym.  None

10. Nearby Intersecting Highway?  Yes  No

2. Smallest Crossing Angle  0°-29°  30°-59°  60°-90°

7. Are RR Advance Warning Signs Present?  Yes  No

3. Number of Traffic Lanes Crossing Railroad  Number

8. Crossing Surface  1. Sec. Timber  2. Full Wd. Plank  3. Asphalt  4. Concrete St.  5. Concrete Pave.  6. Rubber  7. Metal Sections  8. Other Met.  9. Unconsolidated  0. Other Specify

4. Are Truck Pullout Lanes Present?  Yes  No

### Part IV Highway Department Information

1. Highway System

2. Is Crossing on State Highway System?  Yes  No

4. Estimate AADT

3. Functional Classification of Road over Crossing

5. Estimate Percent Trucks

I. D. Number

