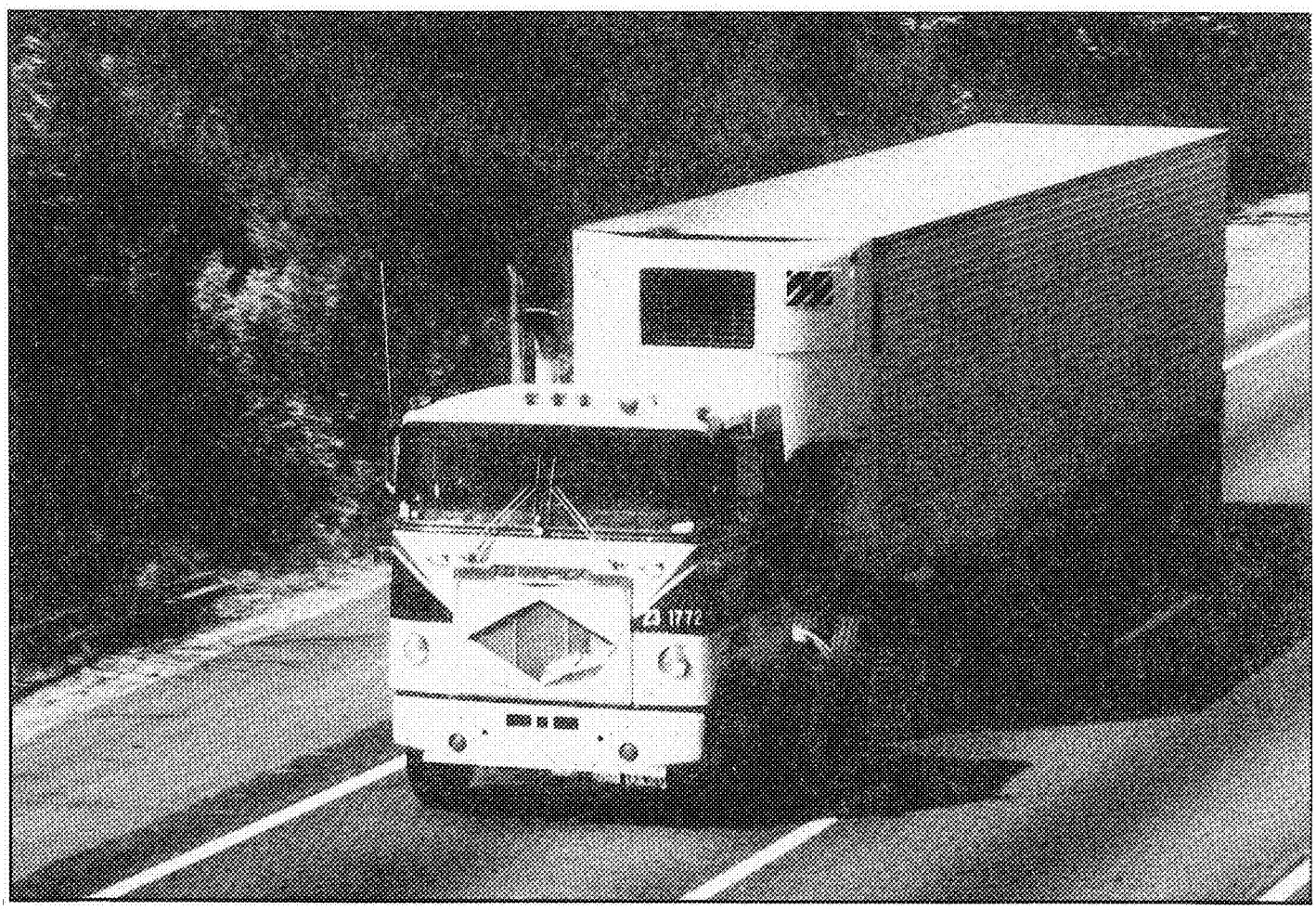
U.S. Department
of Transportation

Federal Highway Administration

Accidents of Motor Carriers of Property 1988

Office of Motor Carriers



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Accidents of Motor Carriers of Property 1988

Publication No. FHWA/MC-90/018

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Office of Motor Carriers
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U.S. Department of Transportation
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OMC/FARS
TRUCK ACCIDENT STATISTICS
1979 TO 1988

This table is presented to provide the most complete data available regarding truck-involved accidents. The data from the Office of Motor Carriers (OMC) are compiled for all accidents (fatal, injury, and property damage only) involving trucks in *interstate* travel, and only those accidents reported to OMC by the carriers and operators of the trucks as outlined in Federal regulation (49 CFR 394). The data from the National Highway Traffic Safety Administration (NHTSA) are from the Fatal Accident Reporting System (FARS), which consists of all fatal crashes occurring nationwide as compiled from police accident reports and reported by States to the NHTSA. Truck-involved crash data pertaining to those trucks in both *intrastate* and *interstate* travel are included in this table. The FARS uses the following definition of trucks:

- Medium/Heavy Truck - Trucks weighing more than 10,000 pounds.
- Combination Truck
  - Single Unit Truck - Pulling trailer and weighing more than 10,000 pounds.
  - Truck Tractor - Bobtail or pulling trailer(s) and weighing more than 10,000 pounds.

OMC/FARS
Ten-Year Accident Statistics

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
OMC STATISTICS										
FATAL ACCIDENTS	2,528	2,058	2,191	1,978	2,031	2,195	2,161	2,101	2,410	2,675
FATALITIES	3,072	2,528	2,810	2,456	2,528	2,721	2,646	2,616	2,907	3,309
INJURY ACCIDENTS	19,605	16,959	17,062	16,354	16,022	17,792	18,135	15,084	16,734	18,504
INJURIES	32,126	27,149	28,533	26,117	26,892	29,149	28,988	25,106	28,018	31,295
PROPERTY DAMAGE ACCIDENTS	10,189	9,203	8,519	8,669	7,979	9,592	8,772	9,044	8,335	11,599
TOTAL ACCIDENTS	32,322	28,220	27,772	27,001	26,032	29,579	29,068	26,229	27,479	32,778
FARS STATISTICS										
FATAL CRASHES: COMBINATION TRUCKS	4,307	3,731	3,863	3,519	3,645	3,907	3,892	3,825	3,746	3,939
TOTAL FATALITIES: COMBINATION TRUCKS	5,148	4,473	4,594	4,226	4,365	4,605	4,655	4,493	4,403	4,609
FATAL CRASHES: MEDIUM/HEAVY TRUCKS	5,684	5,042	4,928	4,396	4,615	4,831	4,841	4,785	4,813	4,885
TOTAL FATALITIES: MEDIUM/HEAVY TRUCKS	6,702	5,971	5,806	5,229	5,491	5,640	5,734	5,579	5,598	5,679

HIGHLIGHTS OF THE 1988 REPORT

1988 OVERVIEW

- This document profiles 1988 accidents reported by *interstate* commercial carriers of property subject to the Department of Transportation Act. It is suspected that accidents involving interstate carriers were significantly *underreported;* actions are underway to correct this in the future.

- 32,778 accidents were reported by commercial carriers of property in 1988, 19 percent more than in 1987.

- Less than 1 in 10 accidents in 1988 resulted in fatalities; more than 5 in 10 accidents produced injuries.

- Reported accidents produced 3,309 fatalities, 31,295 injuries, and property damage estimated at $477,810,078.

- 3 out of 10 accidents and fatalities occurred in just five states: California, Illinois, Ohio, Pennsylvania, and Texas.

THE DRIVER

- 2 of every 10 persons killed – and 3 of every 10 persons injured – in truck accidents were truck drivers or occupants.

- Physical impairment of the professional drivers operating the trucks was not a factor in most accidents, at least according to the carriers reporting the accidents.

- Driver age did not appear to have a significant impact on accident severity, except that drivers under 21 or over 64 tended to be involved in more severe accidents than the population at large.

- When accidents occurred, truck drivers not wearing seat belts were five times more likely to be killed.

THE VEHICLE

- 3 out of every 4 reported accidents involved tractors-semitrailers.

- Heavier trucks tended to be involved in accidents with fewer fatalities/injuries than lighter vehicles. However, heavy-truck accidents usually resulted in higher property damage than light-vehicle accidents.

- Accidents involving trucks transporting logs/poles/lumber or farm products were more likely to result in fatalities than accidents involving trucks carrying other cargos.

- Mechanical defects almost never contributed to accidents, according to the carriers reporting the accidents.

THE ACCIDENT SETTING

- Reported accidents were more numerous on divided highways, but more likely to be fatal on undivided highways.

- 7 out of 10 reported accidents occurred under favorable weather and favorable road conditions.

- Fewer fatalities/injuries occurred per accident under adverse environmental conditions than under ideal conditions.

- Truck occupants were more likely to be killed or injured in accidents which occurred during the night than during the day.

THE ACCIDENT

- 4 out of 5 accidents involved collisions. These accidents generated 91 percent of the fatalities, 85 percent of the injuries, and 65 percent of the property damage reported during 1988.

- Collision accidents were nearly three times more likely to result in fatalities than non-collision accidents.

- In 9 out of 10 non-collision accidents, the trucks reportedly overturned, jackknifed, or ran off the road.

- Property damage tended to be higher in non-collision accidents, averaging $24,549 per accident versus $11,924 per collision accident.

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INTRODUCTION

This document presents aggregate statistics contained in the *1988 Motor Carriers of Property Accident Database.* The database was compiled from reports of applicable accidents filed by commercial carriers of property subject to the Department of Transportation Act (49 U.S.C. 1651-60). The database is maintained by the Office of Motor Carriers (OMC), Federal Highway Administration, U.S. Department of Transportation.

The data presented in this publication are intended for use by individuals and organizations in the public and private sectors requiring information on accidents of motor carriers of property. Readers seeking general information will find that these materials satisfy many of their basic data requirements. Persons needing more specialized information than presented here are encouraged to contact OMC directly.

ACCIDENT REPORTING

Motor carriers that operate commercial motor vehicles in interstate commerce are subject to the reporting requirements specified in 49 CFR 394. Additionally, the intrastate transportation performed by those interstate motor carriers is subject to the same reporting requirements. Accidents are reported using Federal Form MCS 50-T, *Motor Carrier Accident Report (Property-Carrying).*

A "reportable" accident has occurred when one or more of the following conditions result:

- At least one person dies.
- At least one person experiences bodily injury which requires immediate medical treatment away from the scene of the accident.
- Property is damaged in the amount of $4,400 or more, based on actual or estimated costs.

The MCS 50-T report contains over 60 data elements pertaining to the motor carrier, driver, vehicles, and circumstances of the accident. Accident reports, when received by OMC, are entered into the Motor Carriers of Property Accident Database.

In 1988, properly-executed accident reports were all entered into the

database, with one exception. When two or more commercial carriers reported involvement in a single accident, only one of those reports was entered into the database. Generally, the report filed by the carrier determined to have been most directly involved in the accident was the one entered into the database.

NATURE OF THE DATA

Readers should be aware of several significant limitations in the 1988 data. First, attempts were not routinely made in 1988 to ensure that all accidents which should have been reported were, in fact, reported. Hence, the database is limited to those accident occurrences for which MCS 50-Ts were filed. There is, however, ample evidence to indicate that the number of accident occurrences which should have been reported, but were not reported, was substantial.

Secondly, attempts were not ordinarily made in 1988 to verify the completeness and accuracy of carriers' accounts of the accidents, as reported on the MCS 50-Ts. Thus, carriers' presentations of the circumstances surrounding the accidents were entered into the database precisely as reported. During 1988, OMC did not maintain data on the extent—if any—to which commercial carriers' accounts of accidents deviated from the accounts compiled by police, courts, insurance companies, etc.

Lastly, it should be noted that this publication is a summary of accident statistics, presented without benefit of *exposure* factors. Exposures refer to the potential opportunities for a given event to occur. Suppose, for instance, that two interstate carriers, A and B, experienced 12 and 18 reportable accidents, respectively. Carrier A logged 5 million miles of travel during the year, while Carrier B travelled 10 million miles. Initially, it might look as though Carrier B was less safe than Carrier A, since B had 18 accidents and A had only 12. However, when one considers the exposure—in this case, *total vehicle miles driven*—a very different picture emerges. Now it is seen that Carrier A experienced 2.4 accidents per million miles travelled, whereas Carrier B experienced only 1.8 accidents per million miles of travel. Perhaps Carrier B was really the safer of the two carriers after all!

Because this document is largely deprived of exposure data, one must exercise great caution in attempting to compare the probabilities of accidents occurring under various circumstances. For instance, while the data on accidents by time of day chronicled in Chapter 4 shows that most accidents occurred during the day, one cannot necessarily conclude that the probability of accidents happening in the daytime was greater than at night. Before one could draw that conclusion, one would need to examine such exposure factors as the number of commercial vehicles on the roads in the daytime versus the nighttime.

One may, however, properly use the data in this document to compare the probable consequences of accidents under different circumstances. For example, one *can* make a valid determination about whether accidents, when they occurred, were more severe during the day or at night.

ORGANIZATION OF THE DOCUMENT

This document contains five chapters:

- Chapter 1: 1988 Overview
- Chapter 2: The Driver
- Chapter 3: The Vehicle
- Chapter 4: The Accident Setting
- Chapter 5: The Accident

Within each chapter, data are organized under specific topics. A glossary of terms and a copy of Form MCS 50-T are presented in the Appendix.

DATA CONVENTIONS

The following conventions are used throughout this document:

- Percentages shown in tables and figures are rounded to the nearest one-tenth of 1 percent. Percentages do not always total 100 due to rounding.
- Items which motor carriers left blank on the 50-T report are noted in tables and figures under the "Not Reported" category.
- When the size of the sample from which the data shown in a given figure were drawn is not readily apparent, the sample size is identified at the base of the figure. For example, "N = 32,778" means that the data shown were drawn from 32,778 accident reports.
- Accident consequences – notably fatality and injury rates – are usually expressed as a rate per 100 accidents.
- Specific parts of the *Federal Motor Carrier Safety Regulations* are referenced in the text of the document, as appropriate. For example, "49 CFR 394" means Title 49 of the *Code of Federal Regulations,* Part 394.

ADDITIONAL INFORMATION

- For answers to questions not addressed in this publication, please contact the Federal Highway Administration, Office of Motor Carriers, HIA-10, at 400 Seventh Street, S.W., Washington, D.C. 20590. The telephone number is 202-366-4023.

Chapter 1 1988 OVERVIEW

Accident Class Totals
Accident Consequences
State Accident Statistics
Five-Year Trends

In 1988, 32,778 accidents involving commercial vehicles of property were reported by the individuals and companies who operate those vehicles. These accidents resulted in 3,309 fatalities, 31,295 non-fatal injuries, and property damage estimated at $477,810,078. Fewer than 1 in 10 accidents involved fatalities, though more than 5 in 10 produced injuries. Trend data for the five-year period, 1984–1988, reveals that total accidents reported in 1988 increased by approximately 11 percent over the 1984 total. During the same period, however, fatalities increased by nearly 22 percent.

ACCIDENT CLASS TOTALS

The 32,778 accidents reported in 1988 fall into three *classes*:

- *Fatal Accidents.* This group includes all accidents for which at least one fatality was reported. These accidents may also have involved non-fatal injuries and property damage.
- *Injury Accidents.* At least one injury, but no fatalities, were reported for each accident in this category. Property damage may also have been a consequence of "injury" accidents.
- *Property Damage Accidents.* Each of these accidents resulted in actual or estimated property damage of $4,400 or more, but involved no fatalities or injuries.

Accidents are grouped into these classes according to accident severity. For example, accidents which resulted in fatalities and injuries are classified as "fatal" accidents. Accidents involving injuries and property damage fall into the "injury" category.

Table 1-1 summarizes 1988 accident data by the three accident classes.

In Table 1-2, class totals are broken down further by *carrier type, accident type,* and *trip type*. Carrier type includes for-hire and private. Accident type encompasses (1) collisions with moving, fixed, or parked objects; and (2) non-collisions, e.g., fires and jackknifes. Trip type indicates whether the commercial vehicles were engaged in over-the-road or local transportation when the accidents occurred.

Approximately 4 out of every 5 accidents reported in 1988 were the result of collisions; 3 out of 4 accidents occurred during over-the-road trips (i.e., on highways between two non-local destination points). In general, as accident severity increased—from property damage to injuries to fatalities—the likelihood that the resultant accidents entailed collisions also increased.

Table 1-1
1988 Accident Summary

	NUMBER	PERCENT
FATAL ACCIDENTS	2,675	8.2
INJURY ACCIDENTS	18,504	56.5
PROPERTY DAMAGE ACCIDENTS	11,599	35.4
TOTAL ACCIDENTS	32,778	100.1

For-hire carriers were involved in 98 percent of all accidents reported in 1988, suggesting that for-hire carriers, as a group, are either (1) much less safe than private carriers, or (2) much more likely to report their accidents than private carriers. Based on its long-term experience monitoring and regulating truck safety, OMC presumes the latter to be the case.

Table 1-3 breaks down accident class totals by type of for-hire carrier.

Table 1-2
Accident Class Totals
By Carrier Type, Accident Type, and Trip Type

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
CARRIER TYPE								
FOR-HIRE	2,571	96.1	18,125	98.0	11,275	97.2	31,971	97.5
PRIVATE	93	3.5	336	1.8	285	2.5	714	2.2
TYPE NOT RPTD.	11	0.4	43	0.2	39	0.3	93	0.3
TOTAL	2,675	100.0	18,504	100.0	11,599	100.0	32,778	100.0
ACCIDENT TYPE								
COLLISION	2,441	91.3	15,256	82.4	8,192	70.6	25,889	79.0
NON-COLLISION	234	8.7	3,248	17.6	3,407	29.4	6,889	21.0
TYPE NOT RPTD.	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	2,675	100.0	18,504	100.0	11,599	100.0	32,778	100.0
TRIP TYPE								
OVER-THE-ROAD	2,102	78.6	13,791	74.5	9,286	80.1	25,179	76.8
LOCAL	573	21.4	4,713	25.5	2,313	19.9	7,599	23.2
TYPE NOT RPTD.	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	2,675	100.0	18,504	100.0	11,599	100.0	32,778	100.0

Table 1-3
Breakdown of For-Hire Accidents

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
FOR-HIRE CARRIERS								
ICC AUTHORIZED	2,024	78.7	15,002	82.8	9,221	81.8	26,247	82.1
ICC EXEMPT	527	20.5	3,023	16.7	1,982	17.6	5,532	17.3
OTHER	20	0.8	100	0.6	72	0.6	192	0.6
TOTAL	2,571	100.0	18,125	100.1	11,275	100.0	31,971	100.0

ACCIDENT CONSEQUENCES

Fatalities, injuries, and property damage – the physical *consequences* of commercial vehicle accidents – are summarized in Tables 1-4 and 1-5. Table 1-4 shows that the majority of 1988 accident consequences were the result of (1) accidents involving for-hire carriers, (2) collision accidents, and (3) accidents occurring during over-the-road transportation. As with the class totals, nearly all (more than 96 percent) of the accident consequences reported involved for-hire carriers. Table 1-5 shows that most of these carriers were "ICC authorized."

Table 1-4
Accident Consequences
By Carrier Type, Accident Type, and Trip Type

	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	$	%
CARRIER TYPE						
FOR-HIRE	3,187	96.3	30,587	97.7	465,324,205	97.4
PRIVATE	110	3.3	632	2.0	10,832,206	2.3
TYPE NOT RPTD.	12	0.4	76	0.2	1,653,667	0.3
TOTAL	3,309	100.0	31,295	99.9	477,810,078	100.0
ACCIDENT TYPE						
COLLISION	3,009	90.9	26,705	85.3	308,694,261	64.6
NON-COLLISION	300	9.1	4,590	14.7	169,115,817	35.4
TYPE NOT RPTD.	0	0.0	0	0.0	0	0.0
TOTAL	3,309	100.0	31,295	100.0	477,810,078	100.0
TRIP TYPE						
OVER-THE-ROAD	2,633	79.6	23,345	74.6	399,964,522	83.7
LOCAL	676	20.4	7,950	25.4	77,845,556	16.3
TYPE NOT RPTD.	0	0.0	0	0.0	0	0.0
TOTAL	3,309	100.0	31,295	100.0	477,810,078	100.0

Table 1-5
Breakdown of For-Hire Accident Consequences

	FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	$	%
FOR-HIRE CARRIERS						
ICC AUTHORIZED	2,504	78.6	24,966	81.6	388,924,977	83.6
ICC EXEMPT	655	20.6	5,450	17.8	74,052,117	15.9
OTHER	28	0.9	171	0.6	2,347,111	0.5
TOTAL	3,187	100.1	30,587	100.0	465,324,205	100.0

In 1988, less than 1 out of every 10 (8.2 percent) commercial vehicle accidents produced fatalities. Fatal accidents averaged 1.2 deaths each. Figures 1-1, 1-2, and 1-3 show the rates at which fatalities, injuries, and property damage – by accident and trip type – were generated during 1988. In general, the fatality rate for collision accidents was three times higher than the rate for non-collision accidents (Figure 1-1). Non-fatal injuries also occurred more frequently in collisions than in non-collisions (Figure 1-2). Trip type – local versus over-the-road – does not appear to have significantly affected fatality and injury rates (Figures 1-1 and 1-2). Property damage in non-collision accidents was produced at a rate more than twice as high as in collision accidents (Figure 1-3). This may have been the result of relatively high cargo losses sustained during non-collision accidents (e.g., when vehicles jackknifed). Also, property damage resulting from over-the-road accidents was generated at a rate over 50 percent higher than in accidents occurring during local trips.

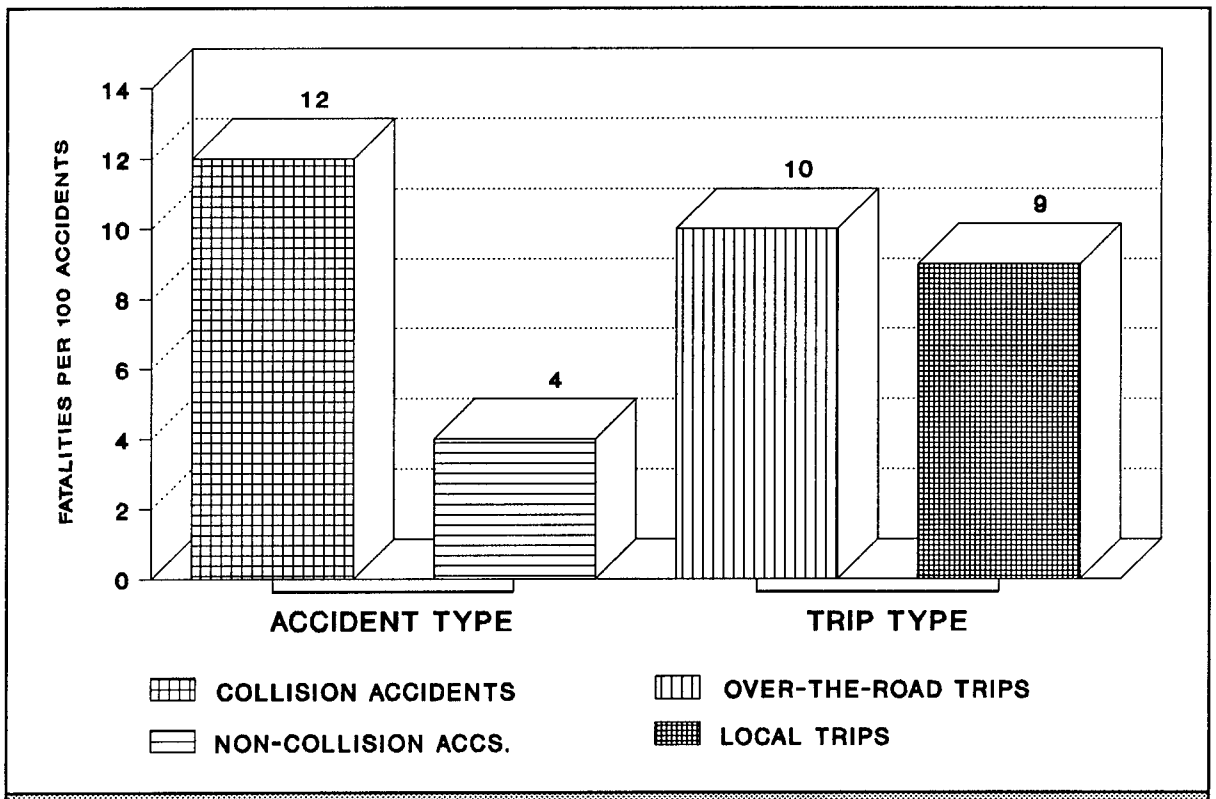

Figure 1-1
Fatalities Per 100 Accidents
By Accident Type and Trip Type

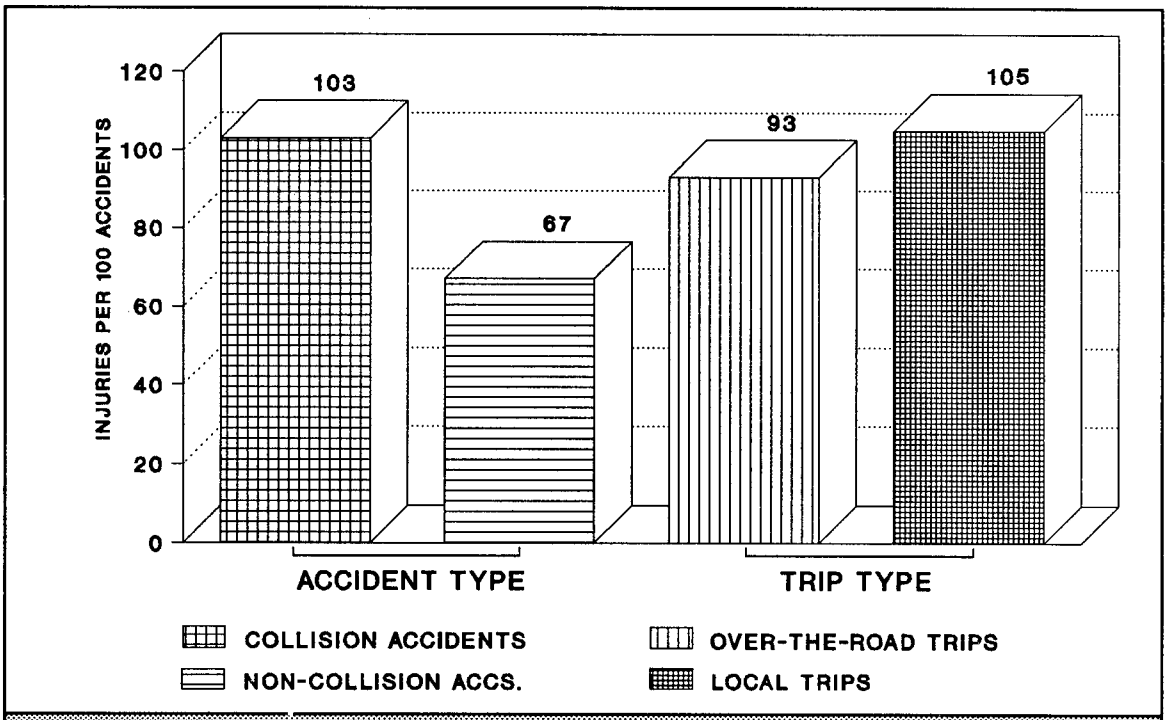

Figure 1-2
Injuries Per 100 Accidents
By Accident Type and Trip Type

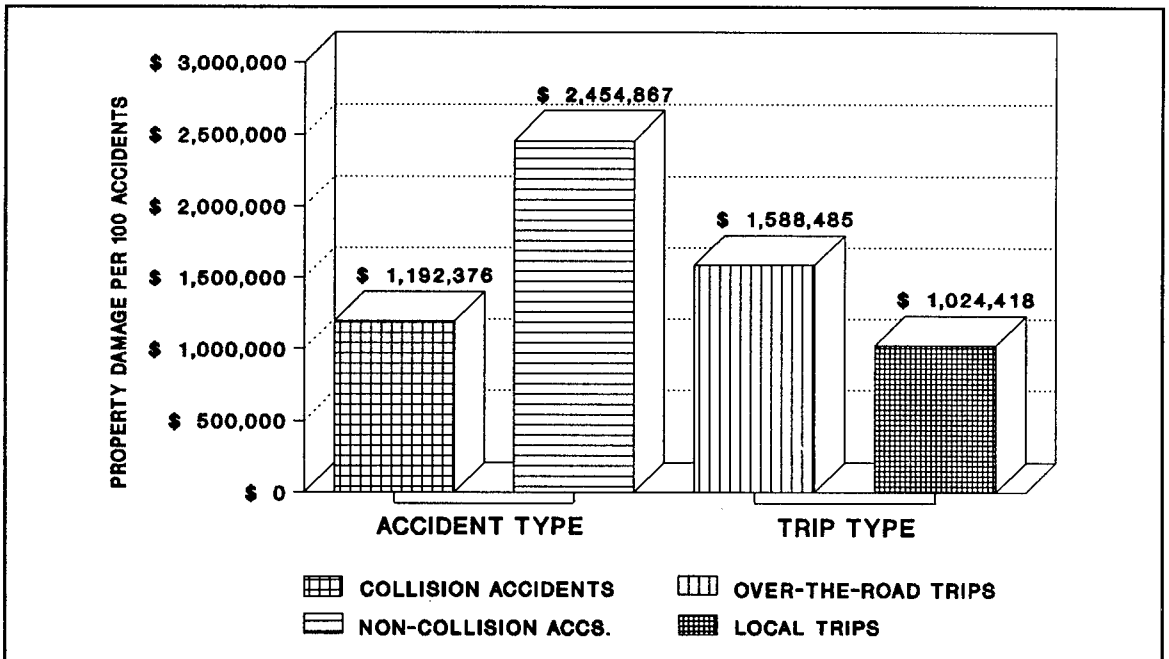

Figure 1-3
Property Damage Per 100 Accidents
By Accident Type and Trip Type

STATE ACCIDENT STATISTICS

During 1988, reported accidents occurred in every state, the District of Columbia, and U.S. territories. Additional accidents involving U.S. carriers in foreign commerce (in Canada and Mexico) were also reported.

Figure 1-4 compares levels of accidents by state. The largest number of accidents were reported in the travel corridor extending northeast, from Illinois to New York. Large numbers of accidents also occurred in Texas, California, and several southeastern states. In general, accidents in a given state were experienced in proportion to the volume of commercial vehicle traffic in that state. Hence, more accidents occurred in states east of the Mississippi River than in states west of the river.

Tables 1-6 and 1-7 summarize the statistics on accident classes and consequences by state. In 1988, reported accidents ranged from a low of 7 in Hawaii to a high of 2,148 in Pennsylvania (Table 1-6). Reported fatalities stretched from 0 in Hawaii to 239 in Texas (Table 1-7).

Twenty-nine percent of all accidents reported during the year occurred in just five states: Pennsylvania, Texas, Ohio, Illinois, and California (Table 1-6); 31 percent of the reported fatalities occurred in these states as well (Table 1-7).

Table 1-8 compares the percentage of accidents, by state, which were fatal.

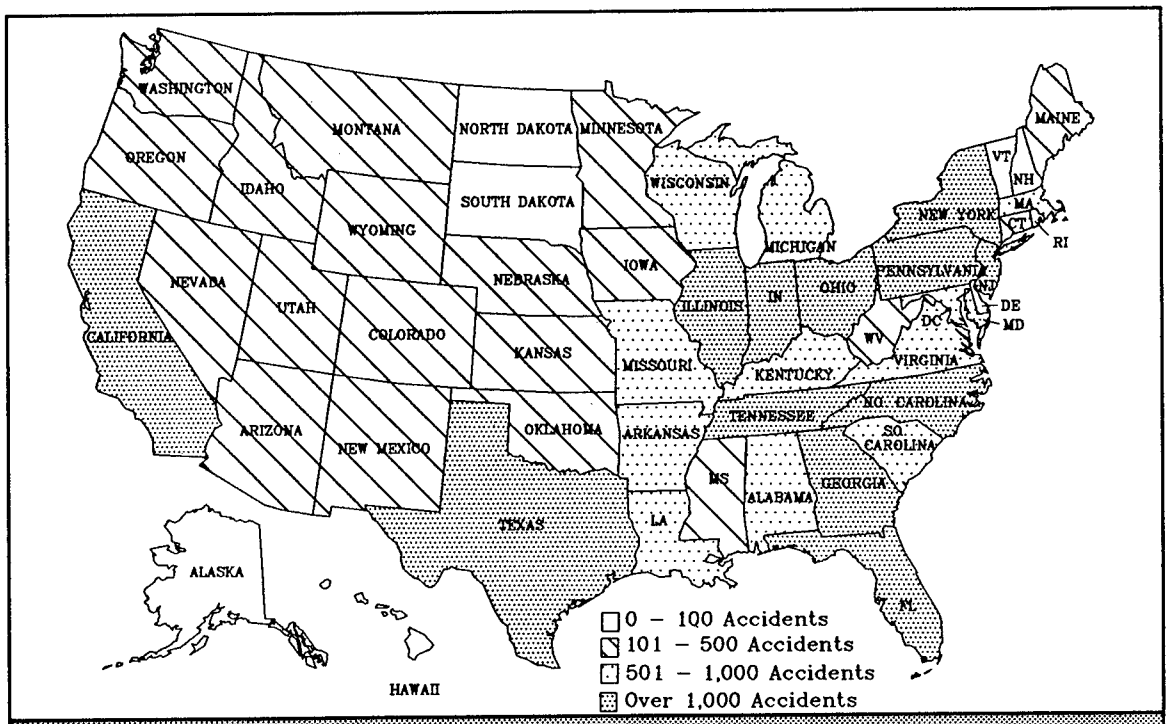

Figure 1-4
Accident Levels
By State

Table 1-6
Accident Class Totals
By State

STATE	FATAL ACCIDENTS #	FATAL ACCIDENTS %	INJURY ACCIDENTS #	INJURY ACCIDENTS %	PROPERTY DAMAGE ACCIDENTS #	PROPERTY DAMAGE ACCIDENTS %	TOTAL ACCIDENTS #	TOTAL ACCIDENTS %
ALABAMA	66	2.5	430	2.3	212	1.8	708	2.2
ALASKA	1	0.0	21	0.1	13	0.1	35	0.1
ARIZONA	41	1.5	218	1.2	121	1.0	380	1.2
ARKANSAS	55	2.1	288	1.6	166	1.4	509	1.6
CALIFORNIA	149	5.6	997	5.4	603	5.2	1,749	5.3
COLORADO	30	1.1	203	1.1	158	1.4	391	1.2
CONNECTICUT	26	1.0	238	1.3	203	1.8	467	1.4
DELAWARE	14	0.5	88	0.5	39	0.3	141	0.4
DIST. OF COLUMBIA	3	0.1	43	0.2	30	0.3	76	0.2
FLORIDA	109	4.1	701	3.8	292	2.5	1,102	3.4
GEORGIA	127	4.7	749	4.0	371	3.2	1,247	3.8
HAWAII	0	0.0	4	0.0	3	0.0	7	0.0
IDAHO	11	0.4	72	0.4	66	0.6	149	0.5
ILLINOIS	135	5.0	1,048	5.7	675	5.8	1,858	5.7
INDIANA	109	4.1	805	4.4	487	4.2	1,401	4.3
IOWA	46	1.7	237	1.3	167	1.4	450	1.4
KANSAS	32	1.2	233	1.3	189	1.6	454	1.4
KENTUCKY	61	2.3	341	1.8	238	2.1	640	2.0
LOUISIANA	49	1.8	400	2.2	195	1.7	644	2.0
MAINE	15	0.6	76	0.4	62	0.5	153	0.5
MARYLAND	43	1.6	477	2.6	189	1.6	709	2.2
MASSACHUSETTS	34	1.3	279	1.5	192	1.7	505	1.5
MICHIGAN	75	2.8	502	2.7	269	2.3	846	2.6
MINNESOTA	38	1.4	198	1.1	169	1.5	405	1.2
MISSISSIPPI	49	1.8	226	1.2	142	1.2	417	1.3
MISSOURI	70	2.6	526	2.8	333	2.9	929	2.8
MONTANA	9	0.3	54	0.3	83	0.7	146	0.4
NEBRASKA	24	0.9	129	0.7	108	0.9	261	0.8
NEVADA	9	0.3	80	0.4	62	0.5	151	0.5
NEW HAMPSHIRE	5	0.2	32	0.2	31	0.3	68	0.2
NEW JERSEY	63	2.4	613	3.3	414	3.6	1,090	3.3
NEW MEXICO	21	0.8	160	0.9	94	0.8	275	0.8
NEW YORK	76	2.8	694	3.8	560	4.8	1,330	4.1
NORTH CAROLINA	105	3.9	718	3.9	382	3.3	1,205	3.7
NORTH DAKOTA	6	0.2	23	0.1	31	0.3	60	0.2
OHIO	157	5.9	1,078	5.8	649	5.6	1,884	5.7
OKLAHOMA	37	1.4	243	1.3	164	1.4	444	1.4
OREGON	27	1.0	228	1.2	216	1.9	471	1.4
PENNSYLVANIA	191	7.1	1,195	6.5	762	6.6	2,148	6.6
RHODE ISLAND	3	0.1	40	0.2	17	0.1	60	0.2
SOUTH CAROLINA	45	1.7	377	2.0	214	1.8	636	1.9
SOUTH DAKOTA	8	0.3	43	0.2	47	0.4	98	0.3
TENNESSEE	78	2.9	634	3.4	343	3.0	1,055	3.2
TEXAS	185	6.9	1,117	6.0	684	5.9	1,986	6.1
UTAH	17	0.6	112	0.6	99	0.9	228	0.7
VERMONT	9	0.3	35	0.2	34	0.3	78	0.2
VIRGINIA	72	2.7	538	2.9	290	2.5	900	2.7
WASHINGTON	22	0.8	242	1.3	169	1.5	433	1.3
WEST VIRGINIA	37	1.4	187	1.0	139	1.2	363	1.1
WISCONSIN	43	1.6	324	1.8	212	1.8	579	1.8
WYOMING	26	1.0	120	0.6	145	1.3	291	0.9
CANADA	6	0.2	49	0.3	40	0.3	95	0.3
MEXICO	0	0.0	2	0.0	1	0.0	3	0.0
U.S. TERRITORIES	0	0.0	2	0.0	2	0.0	4	0.0
STATE NOT RPTD.	6	0.2	35	0.2	23	0.2	64	0.2
TOTAL	2,675	99.7	18,504	100.0	11,599	100.0	32,778	100.2

Table I-7
Accident Consequences
By State

STATE	FATALITIES #	FATALITIES %	INJURIES #	INJURIES %	PROPERTY DAMAGE $	PROPERTY DAMAGE %
ALABAMA	79	2.4	721	2.3	9,932,751	2.1
ALASKA	4	0.1	34	0.1	748,203	0.2
ARIZONA	53	1.6	400	1.3	6,490,960	1.4
ARKANSAS	82	2.5	518	1.7	9,214,725	1.9
CALIFORNIA	179	5.4	1,705	5.4	22,740,815	4.8
COLORADO	34	1.0	359	1.1	5,895,351	1.2
CONNECTICUT	29	0.9	380	1.2	5,090,350	1.1
DELAWARE	23	0.7	138	0.4	1,393,232	0.3
DIST. OF COLUMBIA	3	0.1	70	0.2	544,868	0.1
FLORIDA	143	4.3	1,143	3.7	15,212,746	3.2
GEORGIA	148	4.5	1,262	4.0	15,134,636	3.2
HAWAII	0	0.0	4	0.0	60,804	0.0
IDAHO	13	0.4	128	0.4	3,825,221	0.8
ILLINOIS	182	5.5	1,740	5.6	22,843,124	4.8
INDIANA	126	3.8	1,362	4.4	19,561,116	4.1
IOWA	56	1.7	405	1.3	6,778,111	1.4
KANSAS	43	1.3	359	1.1	8,057,663	1.7
KENTUCKY	64	1.9	590	1.9	8,887,199	1.9
LOUISIANA	67	2.0	759	2.4	7,604,182	1.6
MAINE	18	0.5	133	0.4	2,642,739	0.6
MARYLAND	50	1.5	802	2.6	9,374,942	2.0
MASSACHUSETTS	38	1.1	437	1.4	6,491,024	1.4
MICHIGAN	78	2.4	861	2.8	10,477,066	2.2
MINNESOTA	51	1.5	335	1.1	4,749,057	1.0
MISSISSIPPI	66	2.0	384	1.2	5,611,313	1.2
MISSOURI	90	2.7	874	2.8	12,834,717	2.7
MONTANA	9	0.3	98	0.3	2,997,313	0.6
NEBRASKA	30	0.9	192	0.6	3,521,913	0.7
NEVADA	12	0.4	153	0.5	2,743,742	0.6
NEW HAMPSHIRE	7	0.2	56	0.2	672,723	0.1
NEW JERSEY	73	2.2	993	3.2	12,497,682	2.6
NEW MEXICO	23	0.7	286	0.9	4,655,251	1.0
NEW YORK	88	2.7	1,106	3.5	16,301,538	3.4
NORTH CAROLINA	129	3.9	1,274	4.1	18,559,251	3.9
NORTH DAKOTA	6	0.2	43	0.1	981,626	0.2
OHIO	191	5.8	1,775	5.7	22,697,467	4.8
OKLAHOMA	41	1.2	412	1.3	6,836,593	1.4
OREGON	37	1.1	388	1.2	6,686,568	1.4
PENNSYLVANIA	221	6.7	2,017	6.4	30,673,452	6.4
RHODE ISLAND	3	0.1	74	0.2	738,325	0.2
SOUTH CAROLINA	73	2.2	709	2.3	8,410,218	1.8
SOUTH DAKOTA	8	0.2	82	0.3	1,437,930	0.3
TENNESSEE	97	2.9	1,040	3.3	14,080,238	2.9
TEXAS	239	7.2	1,921	6.1	25,980,089	5.4
UTAH	22	0.7	196	0.6	4,454,154	0.9
VERMONT	10	0.3	53	0.2	1,076,722	0.2
VIRGINIA	95	2.9	880	2.8	11,074,222	2.3
WASHINGTON	25	0.8	393	1.3	5,910,197	1.2
WEST VIRGINIA	44	1.3	287	0.9	6,155,222	1.3
WISCONSIN	54	1.6	569	1.8	37,713,136	7.9
WYOMING	38	1.1	209	0.7	5,711,454	1.2
CANADA	8	0.2	92	0.3	2,017,012	0.4
MEXICO	0	0.0	3	0.0	91,401	0.0
U.S. TERRITORIES	0	0.0	10	0.0	18,802	0.0
STATE NOT RPTD.	7	0.2	81	0.3	918,921	0.2
TOTAL	3,309	99.8	31,295	99.9	477,810,078	100.2

Table 1-8
Percent Fatal Accidents
By State

STATE	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
ALABAMA	66	708	9.3
ALASKA	1	35	2.9
ARIZONA	41	380	10.8
ARKANSAS	55	509	10.8
CALIFORNIA	149	1,749	8.5
COLORADO	30	391	7.7
CONNECTICUT	26	467	5.6
DELAWARE	14	141	9.9
DIST. OF COLUMBIA	3	76	3.9
FLORIDA	109	1,102	9.9
GEORGIA	127	1,247	10.2
HAWAII	0	7	0.0
IDAHO	11	149	7.4
ILLINOIS	135	1,858	7.3
INDIANA	109	1,401	7.8
IOWA	46	450	10.2
KANSAS	32	454	7.0
KENTUCKY	61	640	9.5
LOUISIANA	49	644	7.6
MAINE	15	153	9.8
MARYLAND	43	709	6.1
MASSACHUSETTS	34	505	6.7
MICHIGAN	75	846	8.9
MINNESOTA	38	405	9.4
MISSISSIPPI	49	417	11.8
MISSOURI	70	929	7.5
MONTANA	9	146	6.2
NEBRASKA	24	261	9.2
NEVADA	9	151	6.0
NEW HAMPSHIRE	5	68	7.4
NEW JERSEY	63	1,090	5.8
NEW MEXICO	21	275	7.6
NEW YORK	76	1,330	5.7
NORTH CAROLINA	105	1,205	8.7
NORTH DAKOTA	6	60	0.1
OHIO	157	1,884	8.3
OKLAHOMA	37	444	8.3
OREGON	27	471	5.7
PENNSYLVANIA	191	2,148	8.9
RHODE ISLAND	3	60	5.0
SOUTH CAROLINA	45	636	7.1
SOUTH DAKOTA	8	98	8.2
TENNESSEE	78	1,055	7.4
TEXAS	185	1,986	9.3
UTAH	17	228	7.5
VERMONT	9	78	11.5
VIRGINIA	72	900	8.0
WASHINGTON	22	433	5.1
WEST VIRGINIA	37	363	10.2
WISCONSIN	43	579	7.4
WYOMING	26	291	8.9
CANADA	6	95	6.3
MEXICO	0	3	0.0
U.S. TERRITORIES	0	4	0.0
STATE NOT RPTD.	6	64	9.4
TOTAL	2,675	32,778	8.2

FIVE-YEAR TRENDS

Figures 1-5 through 1-8 summarize accident trends for the five-year period, 1984–1988. In reviewing these data, note that the property damage thresholds (i.e., the lower-end dollar boundaries at which accidents are reportable according to the Federal property damage criterion) have been adjusted for inflation in terms of 1975 dollars. Hence, those accidents which were reported, but which did not meet the adjusted thresholds, have been excluded from the figures and tables.

Key trends during the five-year period included the following:

- Accidents reported in 1988 increased 11 percent over total accidents reported in 1984 (Figure 1-5).
- Fatal accidents increased 22 percent over the 1984 total, to reach the 1988 peak of 2,675 (Figure 1-6). Total fatalities also increased by 22 percent to 3,309 in 1988 (Figure 1-7).
- Total injuries, exclusive of fatalities, increased 7 percent over the 1984 value, to 31,295 in 1988 (Figure 1-8).

Table 1-9 summarizes the statistical data for the five-year period. Percentage changes from year to year are shown for each statistic. In general, accidents, fatalities, injuries, and property damage, after declining in 1985 and 1986, increased significantly in 1987 and 1988.

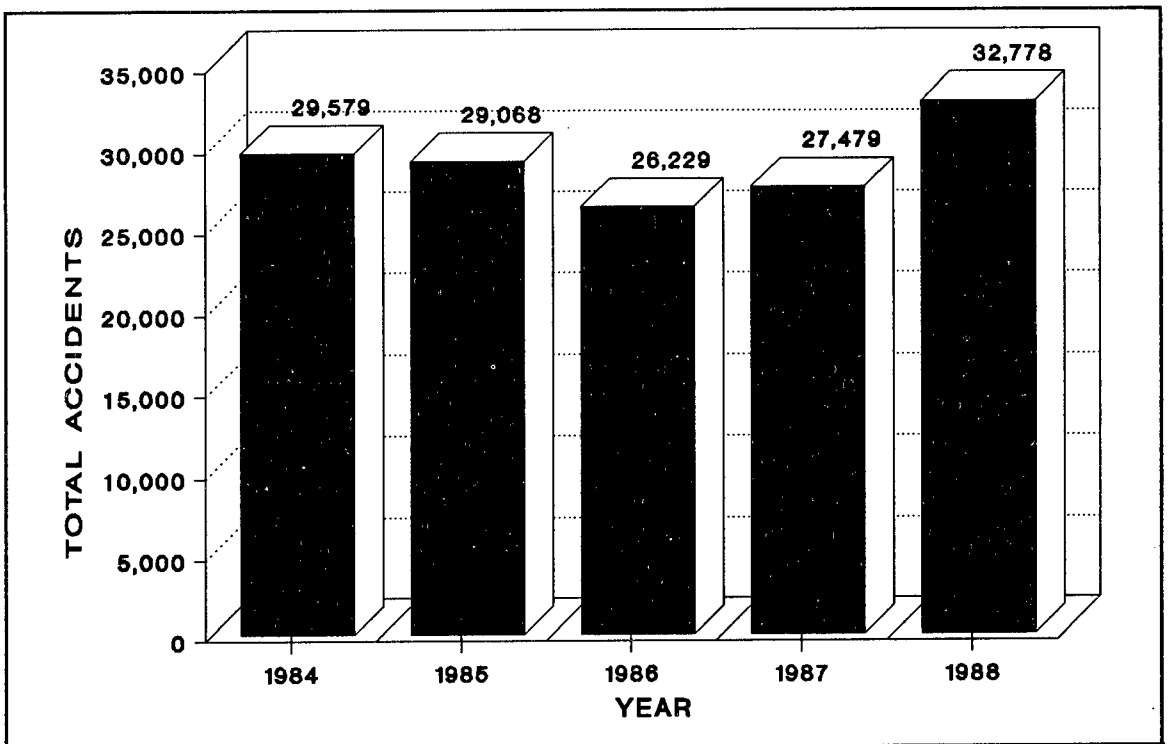

Figure 1-5
Total Accidents
By Year

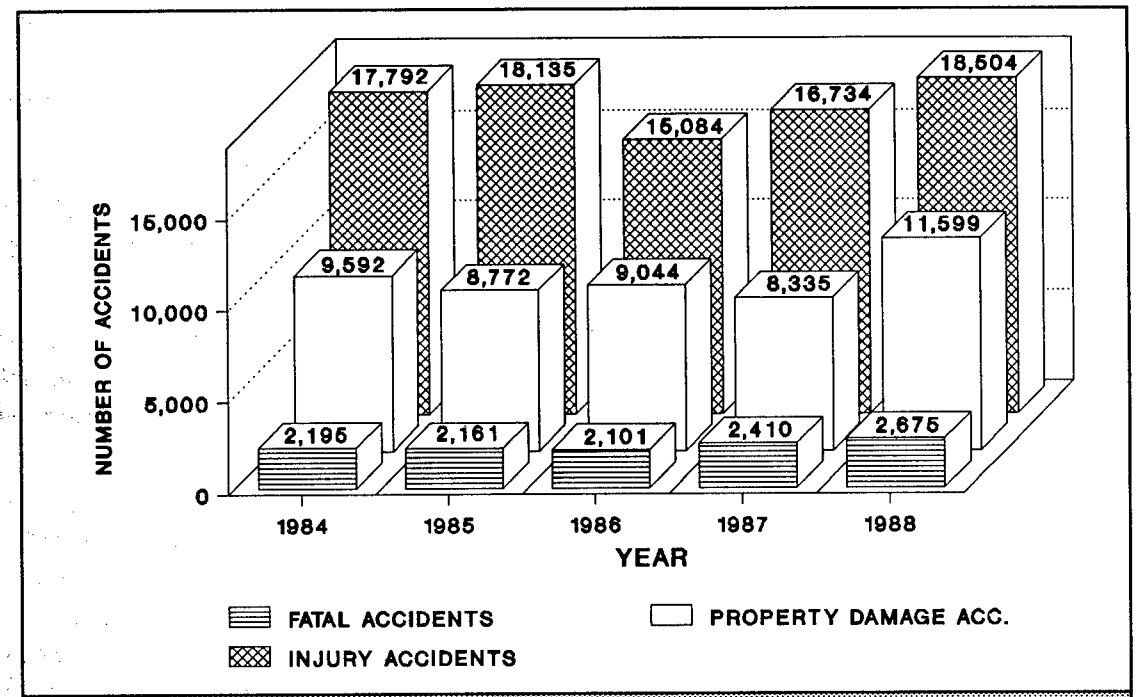

Figure 1-6
Accident Class Totals
By Year

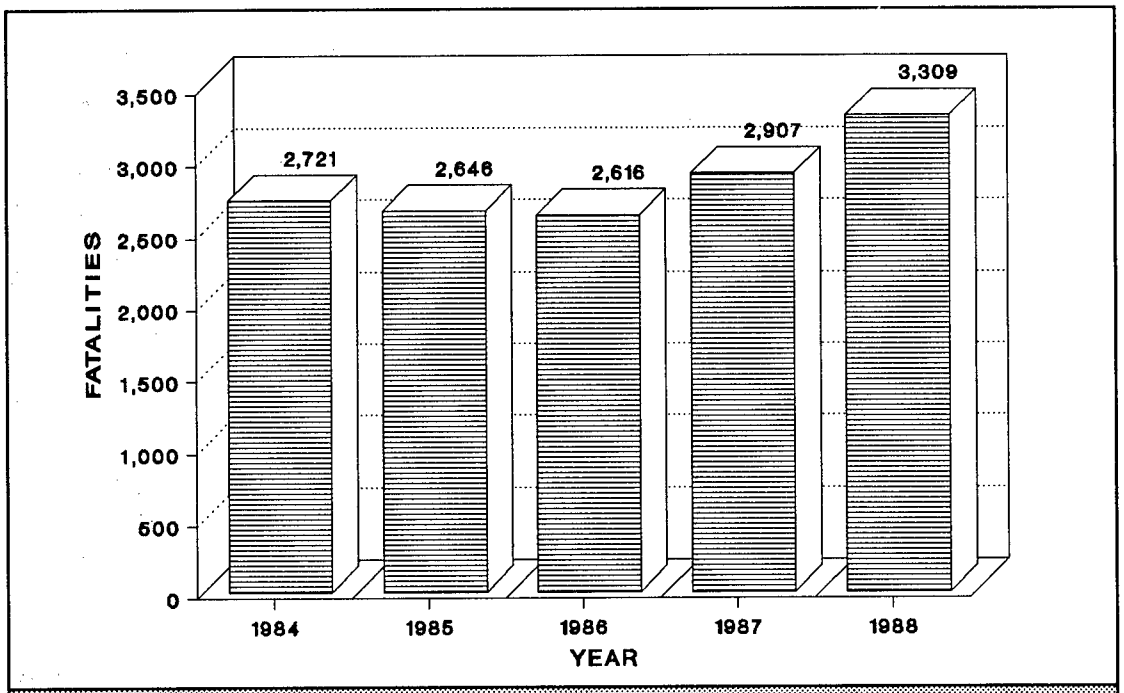

Figure 1-7
Fatalities By Year

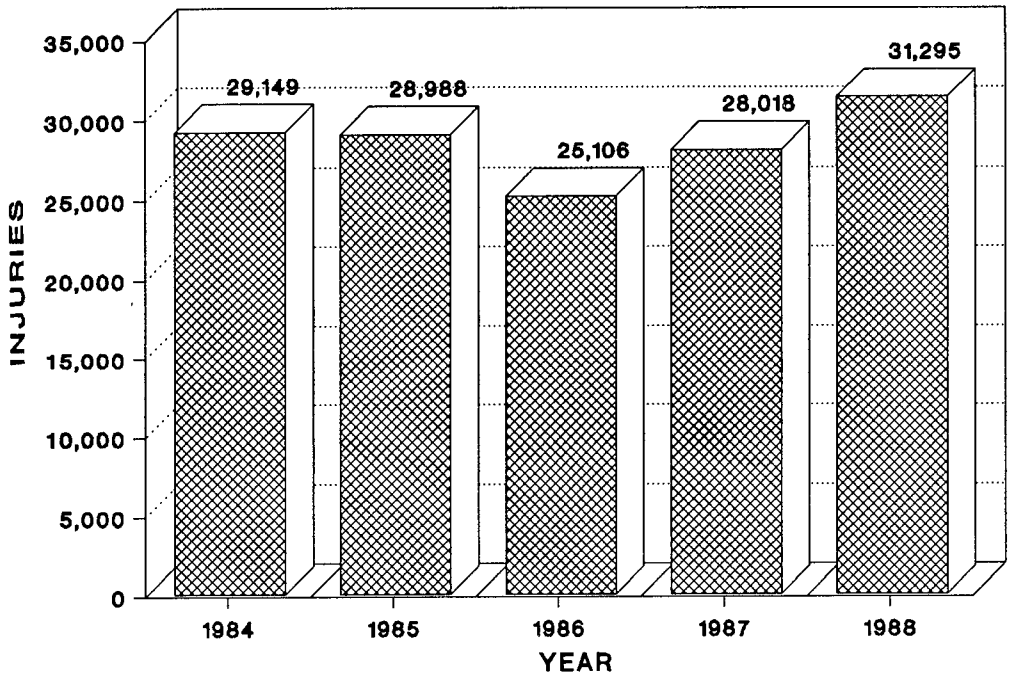

Figure 1-8
Injuries By Year

Table 1-9
Annual Percentage Change in Accident Statistics

	1984-1985	1985-1986	1986-1987	1987-1988	1984-1988
ACCIDENTS					
FATAL	-1.5	-2.8	+14.7	+11.0	+21.9
INJURY	+1.9	-16.8	+10.9	+10.6	+4.0
PROPERTY DAMAGE	-8.5	+3.1	-7.8	+39.2	+20.9
TOTAL	-1.7	-9.8	+4.8	+19.3	+10.8
CONSEQUENCES					
FATALITIES	-2.8	-1.1	+11.1	+13.8	+21.6
INJURIES	-0.6	-13.4	+11.6	+11.7	+7.4

Chapter 2 THE DRIVER

Physical Condition of Drivers
Accidents and Driver Age
Accidents and Hours Driven
Use of Seat Belts

At the time of the accident, the typical professional driver was male, between the ages of 25 and 45, and reported to be in good physical condition. Driver age appeared to impact accident severity only when drivers were under 25 or over 64; drivers in these age groups tended to be involved in accidents which produced more severe consequences than the accidents experienced by the truck driver population at large. The majority of accidents occurred within the first four hours of vehicle operation, probably because most trips made by commercial vehicles travelling interstate were at least four hours in duration. When accidents occurred, truck drivers who had not worn seat belts were five times more likely to be killed than drivers who used their belts.

PHYSICAL CONDITION OF DRIVERS

In 9 out of 10 accidents, physical impairment of the commercial vehicle driver was not a causal factor, according to carriers' accounts of the accidents reported in 1988. As shown in Table 2-1, driver's condition just prior to the accident was reported as "apparently normal" in 96 percent of the accidents; 2 percent of the drivers were acknowledged to have "dozed at the wheel"; and less than 1 percent of the drivers were reported to have "been drinking." A very small number of drivers (8) involved in accidents were said to have been granted "waiver of certain physical defects" (49 CFR 391.49).

Table 2-1
Accidents, Fatalities, Injuries, and Property Damage
By Condition of Driver at Time of Accident

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
CONDITION OF DRIVER								
APPARENTLY NORMAL	31,531	96.2	3,136	94.8	30,088	96.1	446,847,184	93.5
SICK	105	0.3	31	0.9	110	0.4	1,866,636	0.4
HAD BEEN DRINKING	188	0.6	23	0.7	171	0.5	4,278,823	0.9
DOZED AT WHEEL	684	2.1	62	1.9	686	2.2	20,266,907	4.2
MEDICAL WAIVER	8	0.0	0	0.0	8	0.0	86,204	0.0
OTHER	219	0.7	47	1.4	187	0.6	3,755,417	0.8
CONDITION NOT RPTD.	43	0.1	10	0.3	45	0.1	708,907	0.1
TOTAL	32,778	100.0	3,309	100.0	31,295	99.9	477,810,078	99.9

In reviewing the data on driver condition, it should be noted that carrier officials actually reporting the accidents to DOT were not usually present at the accident sites to observe the conditions of their drivers firsthand. Also, police reports which could help substantiate carriers' accounts of their drivers' conditions were not routinely available to DOT analysts in 1988.

Table 2-2 reveals that persons killed or injured in commercial vehicle accidents were more likely to be non-occupants of trucks (e.g., drivers and passengers in other vehicles, bicyclists, or pedestrians) than truck occupants. In 1988, 8 out of every 10 persons killed in commercial vehicle accidents were non-occupants of the trucks; nearly 7 out of every 10 persons injured were also non-occupants.

Table 2-2
Fatalities and Injuries Among
Truck Occupants and Truck Non-Occupants

	FATALITIES		INJURIES	
	#	%	#	%
DRIVER	494	14.9	7,835	25.0
RELIEF DRIVER	56	1.7	657	2.1
OTHER AUTHORIZED TRUCK OCCUPANT	41	1.2	786	2.5
UNAUTHORIZED TRUCK OCCUPANT	39	1.2	238	0.8
PERSON NOT IN TRUCK	2,679	81.0	21,779	69.6
TOTAL	3,309	100.0	31,295	100.0

ACCIDENTS AND DRIVER AGE

Figure 2-1 breaks down total accidents by driver age. Not surprisingly, the bulk of the accidents (82 percent) involved drivers between the ages of 25 and 54, which is consistent with the age spread of most of the nation's professional drivers. Approximately 1 percent of the accidents involved drivers under 21 and over 64.

Figure 2-2 compares accident severity by driver age. In general, when driver age was between 25 and 64, age did not appear to significantly impact the severity of accidents (fatalities and injuries per

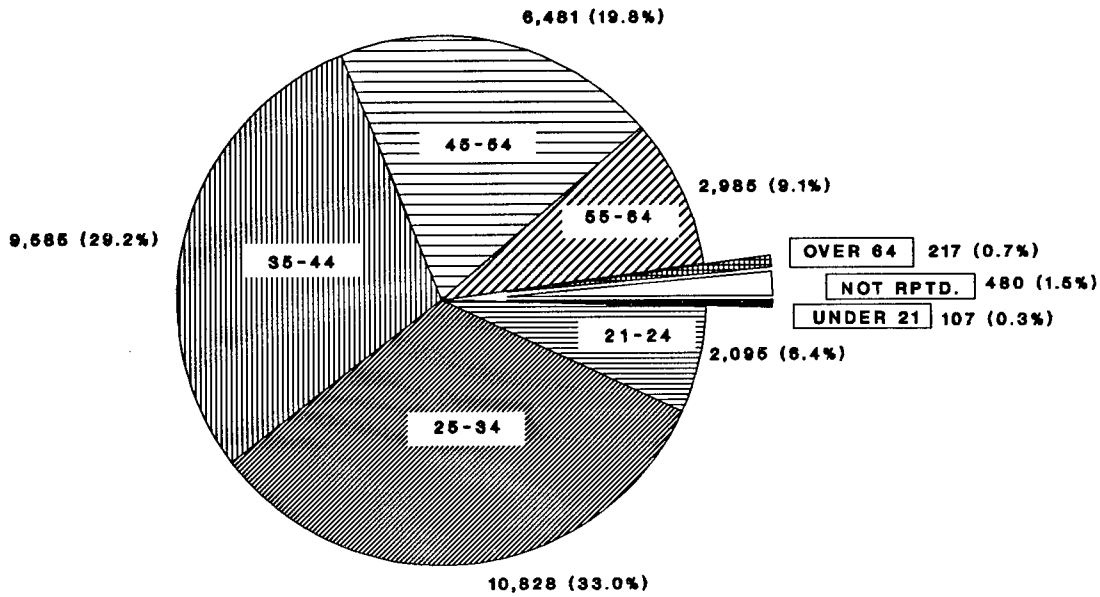

Figure 2-1
Accidents By Driver Age
(N = 32,778)

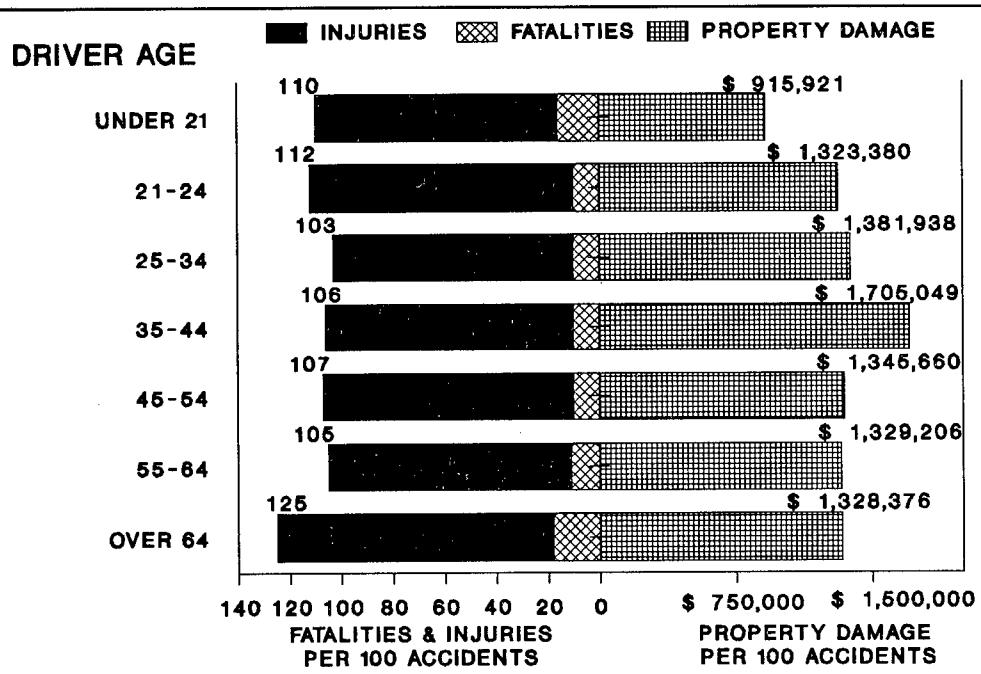

Figure 2-2
Accident Consequences
By Driver Age

100 accidents ranged from 103 to 107). In contrast, accidents involving drivers under 25 and over 64 were *more severe* (fatalities/injuries per 100 accidents ranged from 110 to 125). Hypotheses accounting for the higher accident severity experienced by very young and very old drivers were not tested for the 1988 data. It should be noted, however, that drivers under 21 were generally prohibited from operating commercial vehicles subject to Federal regulation (see 49 CFR 391.2 and 391.67, for exceptions).

The 1988 data, viewed in isolation, do not reveal whether drivers in some age groups are more accident-prone than drivers in other groups. To make such a determination, data on accident occurrences by age group would need to be examined in relation to the total number of drivers within each age category.

ACCIDENTS AND HOURS DRIVEN

As driving time increased, total accidents reported declined (Figure 2-3). Hence, 30 percent of all accidents occurred within 1–2 hours after the last eight-hour period off-duty, 25 percent within 3–4 hours, 18 percent within 5–6 hours, etc.

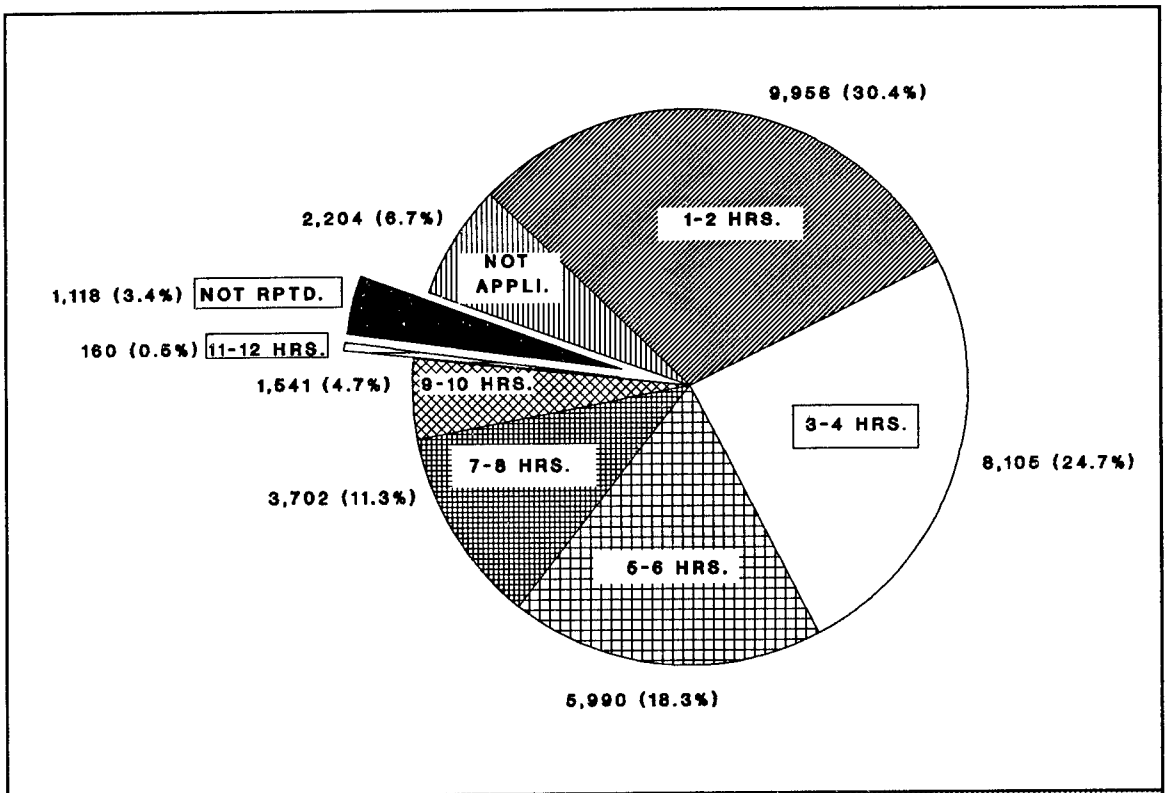

Figure 2-3
Accidents By Hours Driven Since Last Off Duty
(N = 32,778)

This pattern is not surprising since there were more vehicles still on the road 1–2 hours after the last off-duty period than there were, say, 11–12 hours after the last off-duty period. Consequently, the probability of a single accident happening after 1–2 hours was greater than after 11–12 hours.

Accidents were included in the "Not Applicable" category (Figure 2-3) if the last eight hours off-duty were accumulated in two separate rest periods (49 CFR 394.20(a), Item 11E).

Figure 2-4 compares the effect of hours driven on accident severity. In general, hours driven after the last rest period did not have a dramatic impact on fatalities and injuries, although there was an increase in the fatality rate and decrease in the injury rate when driving time reached 11–12 hours. The impact of hours driven on property damage, however, was more pronounced—property damage per 100 accidents was 28 percent higher when drivers had been operating for 11–12 hours instead of 1–2 hours. This increase may be partially explained by the escalation in non-collision accidents experienced as hours driven increased, particularly after the tenth hour (Table 2-3). Non-collision accidents tended to result in higher levels of property damage than collision accidents (see Chapter 1).

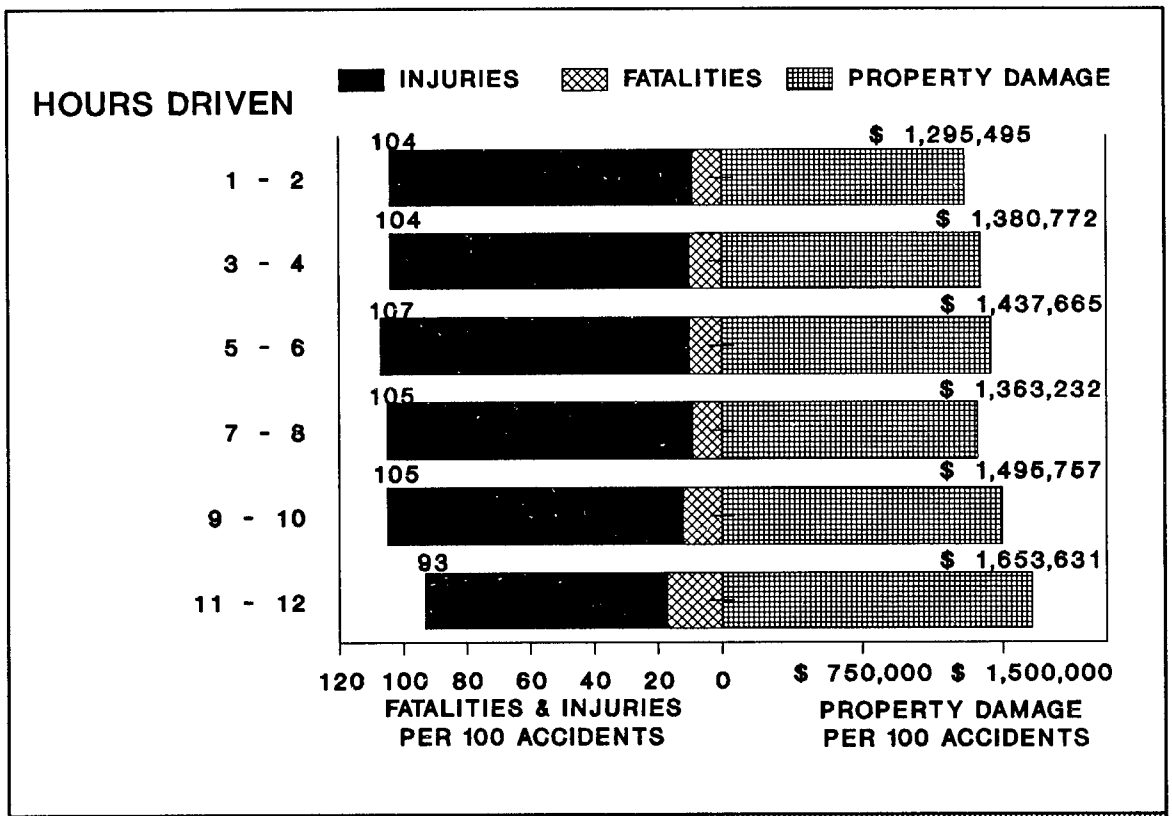

Figure 2-4
Accident Consequences
By Hours Driven

Table 2-3
Accident Type
By Hours Driven

	COLLISION ACCIDENTS		NON-COLLISION ACCIDENTS		NOT REPORTED		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
HOURS DRIVEN								
1-2 HOURS	7,975	80.1	1,983	19.9	0	0.0	9,958	100.0
3-4 HOURS	6,353	78.4	1,752	21.6	0	0.0	8,105	100.0
5-6 HOURS	4,726	78.9	1,264	21.1	0	0.0	5,990	100.0
7-8 HOURS	2,925	79.0	777	21.0	0	0.0	3,702	100.0
9-10 HOURS	1,197	77.7	344	22.3	0	0.0	1,541	100.0
11-12 HOURS	116	72.5	44	27.5	0	0.0	160	100.0
NOT APPLICABLE	1,762	79.9	442	20.1	0	0.0	2,204	100.0
HOURS NOT RPTD.	835	74.7	283	25.3	0	0.0	1,118	100.0
TOTAL	25,889	79.0	6,889	21.0	0	0.0	32,778	100.0

USE OF SEAT BELTS

While 98 percent of the commercial vehicles involved in reported accidents in 1988 were equipped with seat belts—and while use of seat belts by commercial drivers was mandated by Federal regulation (49 CFR 392.16)—belts were not worn in nearly 16 percent of the accidents, according to the carrier officials who reported the accidents (Figure 2-5). The impact of not wearing seat belts was straightforward—truck drivers who did not use the belts were five times more likely to be killed, and 50 percent more likely to be injured, than drivers who used their belts (Figure 2-6).

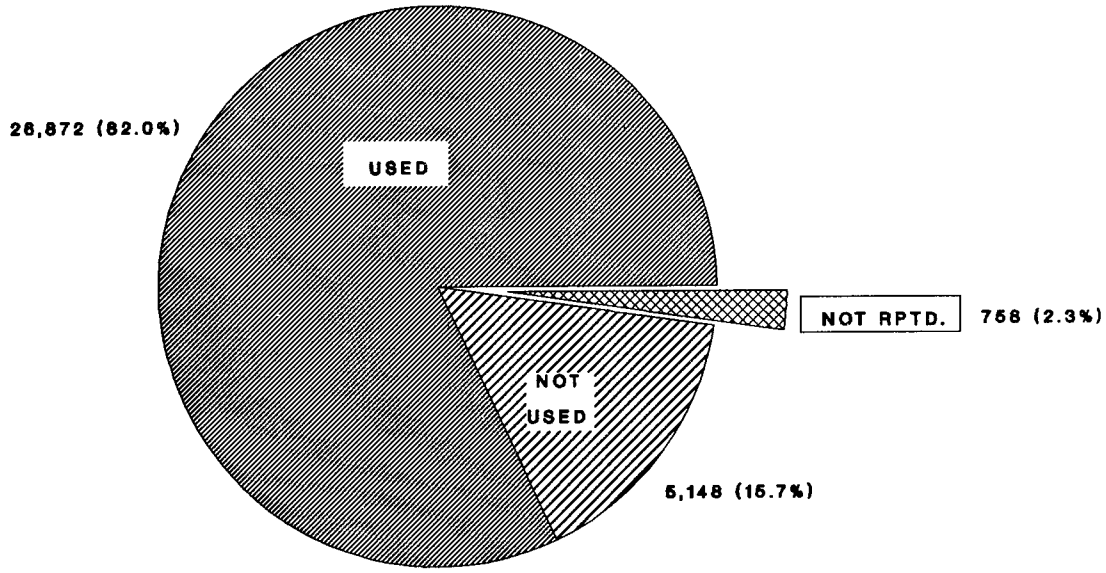

Figure 2-5
Seat Belt Usage
In Accidents
(N = 32,778)

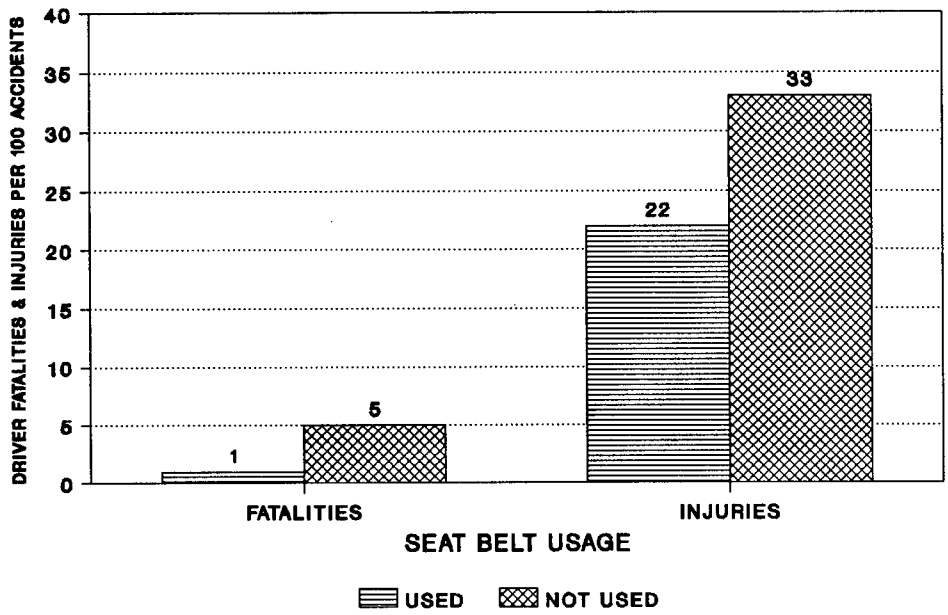

Figure 2-6
Driver Fatalities and Injuries
By Seat Belt Usage

Chapter 3 THE VEHICLE

Vehicle Type and Length
Gross Vehicle Weight
Cargo Types
Hazardous Materials
Mechanical Defects

The typical commercial vehicle involved in reportable accidents was a tractor-semitrailer. The vehicle was between 55 and 65 feet long, had a gross vehicle weight between 45,000 and 80,000 pounds, and was hauling "general freight" at the time of the accident. The average accident involving the typical vehicle resulted in excess of one death or injury. Vehicle defects were rarely cited as the cause of the accident. When defects were acknowledged, however, brake and wheel/tire failures were most often said to have been the problem.

VEHICLE TYPE AND LENGTH

Seventy-seven percent of all accidents reported in 1988 involved the tractor-semitrailer configuration (Table 3-1). These accidents accounted for 80 percent of all fatalities, 75 percent of the injuries, and 82 percent of the property damage reported during the year. In contrast, single-unit trucks accounted for just over 12 percent of all accidents. The tractor-semitrailer-full trailer configuration was involved in 4.5 percent of the accidents.

Table 3-2 summarizes the variance in total accidents and accident consequences by vehicle length. Over half of the accidents (56 percent) involved vehicles between 55 and 64 feet in length, and approximately 1 out of 4 (27 percent) of the accidents involved vehicles under 55 feet. Vehicle configurations in excess of 64 feet accounted for only 1 in 6 accidents (16 percent).

Figure 3-1 examines the relationship between the length of commercial vehicles involved in accidents and accident severity. Interestingly, shorter vehicles tended to be involved in accidents which produced the highest fatality/injury ratios.

Table 3-1
Accidents, Fatalities, Injuries, and Property Damage
By Vehicle Configuration

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
VEHICLE CONFIGURATION								
TRUCK	3,993	12.2	347	10.5	4,543	14.5	36,799,628	7.7
TRUCK-FULL TRAILER	429	1.3	56	1.7	373	1.2	7,758,534	1.6
TRUCK-OTHER	67	0.2	7	0.2	74	0.2	953,953	0.2
TRACTOR	1,211	3.7	113	3.4	1,302	4.2	11,785,740	2.5
TRACTOR-SEMITRAILER	25,297	77.2	2,637	79.7	23,362	74.7	391,883,016	82.0
TRACTOR-SEMI-FULL	1,472	4.5	130	3.9	1,400	4.5	24,242,858	5.1
TRACTOR-SEMI-FL-FL*	60	0.2	2	0.1	50	0.2	723,861	0.2
TRACTOR-OTHER	131	0.4	10	0.3	73	0.2	1,538,195	0.3
OTHER	118	0.4	7	0.2	118	0.4	2,124,293	0.4
CONFIG. NOT RPTD.	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	32,778	100.1	3,309	100.0	31,295	100.1	477,810,078	100.0

*FL = FULL

Table 3-2
Accident Class Totals
By Vehicle Length

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
VEHICLE LENGTH								
UNDER 20 FEET	118	4.4	1,358	7.3	454	3.9	1,930	5.9
20 - 34 FEET	235	8.8	1,819	9.8	850	7.3	2,904	8.9
35 - 49 FEET	153	5.7	1,020	5.5	608	5.2	1,781	5.4
50 - 54 FEET	201	7.5	1,210	6.5	681	5.9	2,092	6.4
55 - 59 FEET	841	31.4	5,475	29.6	3,463	29.9	9,779	29.8
60 - 64 FEET	682	25.5	4,696	25.4	3,331	28.7	8,709	26.6
65 - 69 FEET	351	13.1	2,178	11.8	1,671	14.4	4,200	12.8
OVER 69 FEET	74	2.8	632	3.4	479	4.1	1,185	3.6
LENGTH NOT RPTD.	20	0.7	116	0.6	62	0.5	198	0.6
TOTAL	2,675	99.9	18,504	99.9	11,599	99.9	32,778	100.0

GROSS VEHICLE WEIGHT

The gross vehicle weight (GVW) of commercial vehicles involved in accidents reported in 1988 ranged from under 10,000 pounds to more than 80,000 pounds. Table 3-3 shows that nearly 31 percent of all accidents involved vehicles having GVWs between 62,500 and 80,000 pounds; another 22 percent involved GVWs between 27,500 and 45,000 pounds. The data do not reveal whether vehicles in these two weight categories were actually more accident prone, or whether the majority of commercial vehicles (when loaded) fell into these weight categories anyway, and thus would be expected to be involved in a disproportionate number of total accidents.

There appears to be an inverse relationship between GVW and accident fatalities and injuries. In 1988, as GVW increased, the fatality/injury ratio decreased (see Figure 3-2). For instance, accidents involving commercial vehicles with GVWs over 80,000 pounds resulted in 19 percent fewer fatalities/injuries (100 per 100 accidents) than accidents of vehicles under 10,000 pounds (124 per 100 accidents).

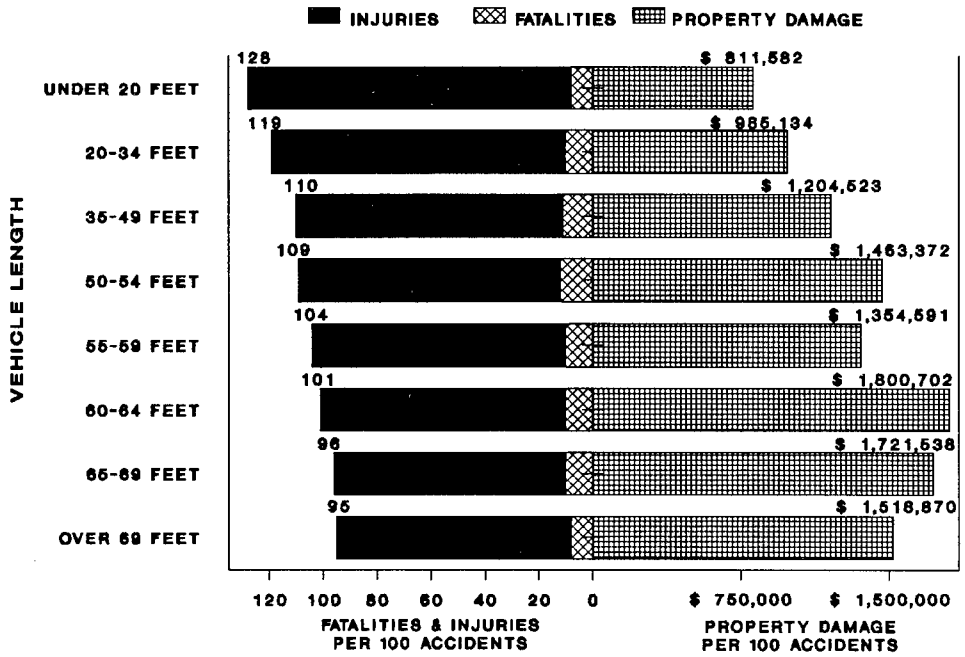

Figure 3-1
Accident Consequences
By Vehicle Length

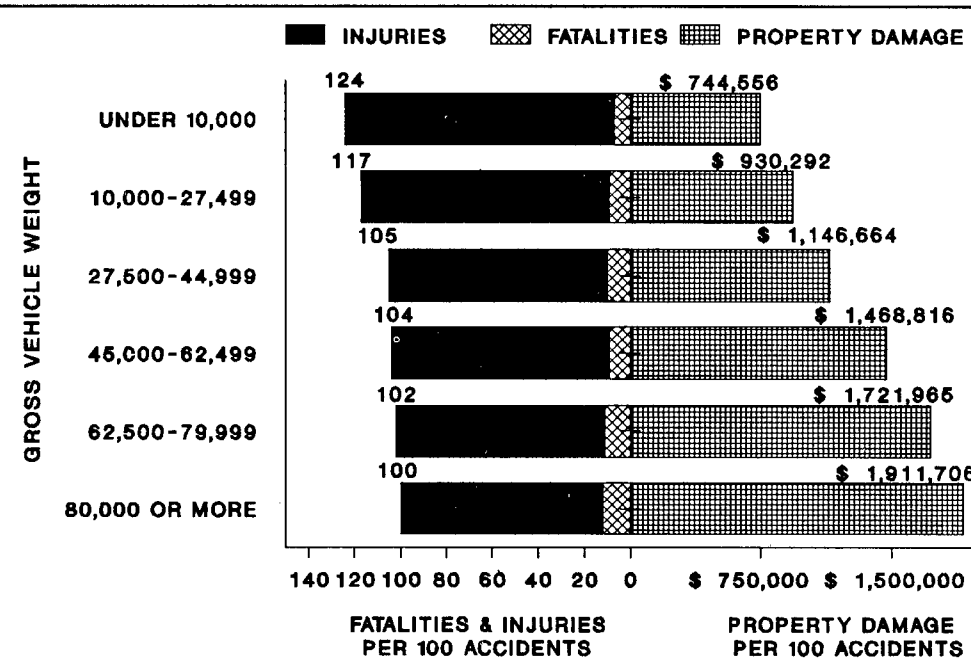

Figure 3-2
Accident Consequences
By Gross Vehicle Weight

Table 3-3
Accident Class Totals
By Gross Vehicle Weight

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
GROSS VEHICLE WEIGHT IN LBS.								
UNDER 10,000	64	2.4	811	4.4	279	2.4	1,154	3.5
10,000-27,499	318	11.9	2,799	15.1	1,196	10.3	4,313	13.2
27,500-44,999	590	22.1	4,077	22.0	2,622	22.6	7,289	22.2
45,000-62,499	355	13.3	2,569	13.9	1,683	14.5	4,607	14.1
62,500-79,999	876	32.7	5,464	29.5	3,805	32.8	10,145	31.0
80,000 OR MORE	204	7.6	1,040	5.6	800	6.9	2,044	6.2
WEIGHT NOT RPTD.	268	10.0	1,744	9.4	1,214	10.5	3,226	9.8
TOTAL	2,675	100.0	18,504	99.9	11,599	100.0	32,778	100.0

CARGO TYPES

Table 3-4 displays accident class totals by cargo type. In 1988, 31 percent of the commercial vehicles involved in reported accidents were carrying "general freight" at the time of the accidents; 20 percent of the vehicles were empty. Accident class totals, when examined by cargo type, tended to mirror the percentage breakdown of total accidents by cargo type. For example, "solids in bulk" were involved in 2.2 percent of all accidents and 2.0, 2.1, and 2.3 percent of all fatal, injury, and property damage accidents, respectively.

When accidents did occur, the likelihood that these accidents would result in fatalities appeared to vary by cargo classification (Table 3-5). For instance, commercial vehicles carrying logs/poles/lumber or farm products were involved in accidents which produced fatalities

Table 3-4
Accident Class Totals
By Cargo Classification

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
CARGO CLASSIFICATION								
GENERAL FREIGHT	738	27.6	5,840	31.6	3,552	30.6	10,130	30.9
HOUSEHOLD GOODS	57	2.1	522	2.8	390	3.4	969	3.0
METAL PRODUCTS	145	5.4	878	4.7	522	4.5	1,545	4.7
HEAVY MACHINERY	56	2.1	259	1.4	250	2.2	565	1.7
MOTOR VEHICLES	29	1.1	207	1.1	211	1.8	447	1.4
DRIVEAWAY-TOWAWAY	3	0.1	54	0.3	51	0.4	108	0.3
GASES IN BULK	14	0.5	80	0.4	51	0.4	145	0.4
SOLIDS IN BULK	53	2.0	396	2.1	269	2.3	718	2.2
LIQUIDS IN BULK	123	4.6	835	4.5	487	4.2	1,445	4.4
EXPLOSIVES	2	0.1	17	0.1	15	0.1	34	0.1
LOGS/POLES/LUMBER	69	2.6	346	1.9	260	2.2	675	2.1
EMPTY	573	21.4	3,735	20.2	2,279	19.6	6,587	20.1
REFRIGERATED FOODS	172	6.4	1,170	6.3	928	8.0	2,270	6.9
MOBILE HOME	7	0.3	66	0.4	96	0.8	169	0.5
FARM PRODUCTS	70	2.6	236	1.3	264	2.3	570	1.7
OTHER	554	20.7	3,770	20.4	1,912	16.5	6,236	19.0
CARGO NOT RPTD.	10	0.4	93	0.5	62	0.5	165	0.5
TOTAL	2,675	100.0	18,504	100.0	11,599	99.8	32,778	99.9

Table 3-5
Percent Fatal Accidents
By Cargo Classification

CARGO CLASSIFICATION	FATAL ACCIDENTS	TOTAL ACCIDENTS	% FATAL ACCIDENTS
GENERAL FREIGHT	738	10,130	7.3
HOUSEHOLD GOODS	57	969	5.9
METAL PRODUCTS	145	1,545	9.4
HEAVY MACHINERY	56	565	9.9
MOTOR VEHICLES	29	447	6.5
DRIVEAWAY-TOWAWAY	3	108	2.8
GASES IN BULK	14	145	9.7
SOLIDS IN BULK	53	718	7.4
LIQUIDS IN BULK	123	1,445	8.5
EXPLOSIVES	2	34	5.9
LOGS/POLES/LUMBER	69	675	10.2
EMPTY	573	6,587	8.7
REFRIGERATED FOODS	172	2,270	7.6
MOBILE HOME	7	169	4.1
FARM PRODUCTS	70	570	12.3
OTHER	554	6,236	8.9
CARGO NOT RPTD.	10	165	6.1
TOTAL	2,675	32,778	8.2

10–12 percent of the time. In contrast, commercial vehicles transporting driveaways/towaways or mobile homes were involved in accidents which resulted in fatalities only 3–4 percent of the time.

HAZARDOUS MATERIALS

Less than 5 percent of the accidents reported during 1988 involved commercial vehicles transporting hazardous materials, as defined by the *Hazardous Materials Regulations* (49 CFR 170 – 177). Table 3-6 shows that accidents in which hazardous materials were present resulted in 184 fatalities, 1,605 injuries, and property damage estimated at $34,455,289. Nearly all the reported accidents involved for-hire carriers – private carriers reported only 16 accidents in which hazardous materials were present.

Figure 3-3 compares the proportion of 1988 accidents, fatalities, injuries, and property damage involving hazardous materials.

MECHANICAL DEFECTS

Less than 4 percent of all carriers reporting accidents during 1988 said that their

Table 3-6
Accidents, Fatalities, Injuries, and Property Damage
Involving Hazardous Materials By Carrier Type

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
CARRIER TYPE								
FOR-HIRE	1,547	98.4	182	98.9	1,591	99.1	33,246,377	96.5
PRIVATE	16	1.0	2	1.1	9	0.6	1,138,481	3.3
TYPE NOT RPTD.	9	0.6	0	0.0	5	0.3	70,431	0.2
TOTAL	1,572	100.0	184	100.0	1,605	100.0	34,455,289	100.0

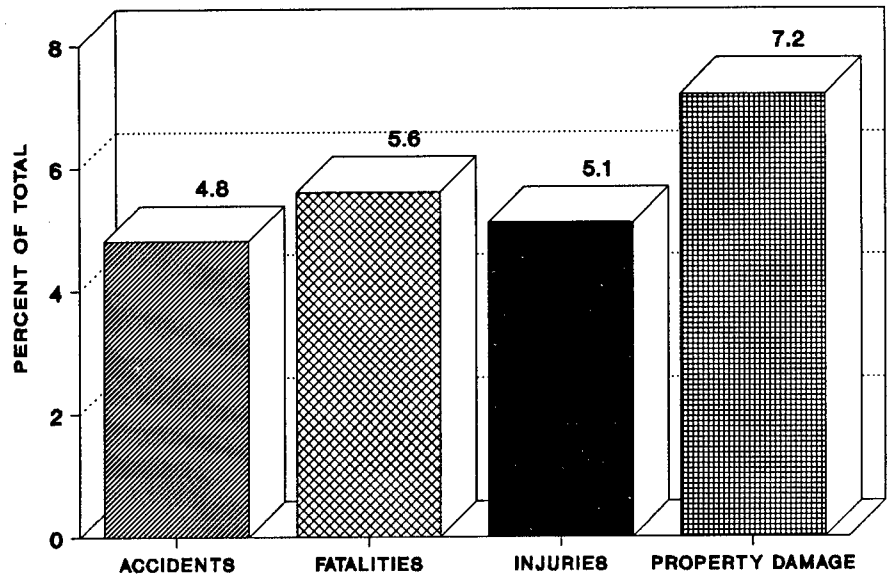

Figure 3-3
Hazardous Materials Accidents as a Percent of Total Accidents, Fatalities, Injuries, and Property Damage

vehicles exhibited mechanical defects or failures at the time of the accidents (Figure 3-4). Figure 3-5 indicates that when mechanical defects were cited, brake failures were most often said to be the cause of the accidents (27 percent), followed by problems with wheels and tires (23 percent).

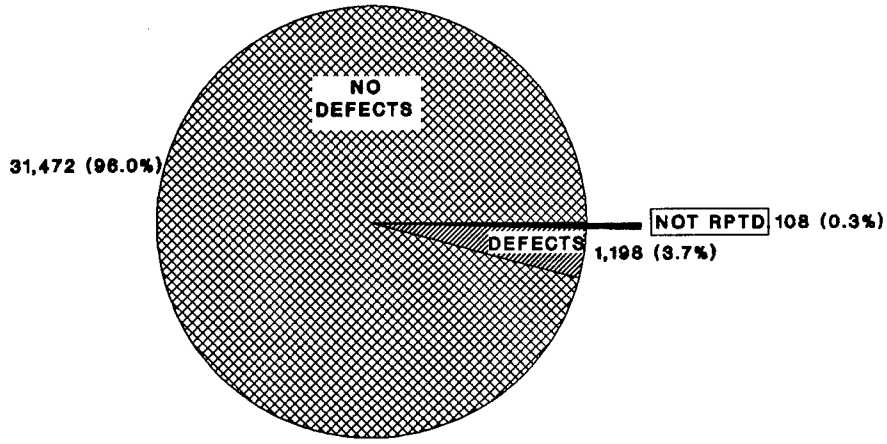

Figure 3-4
Presence of Mechanical Defects In Accidents (N = 32,778)

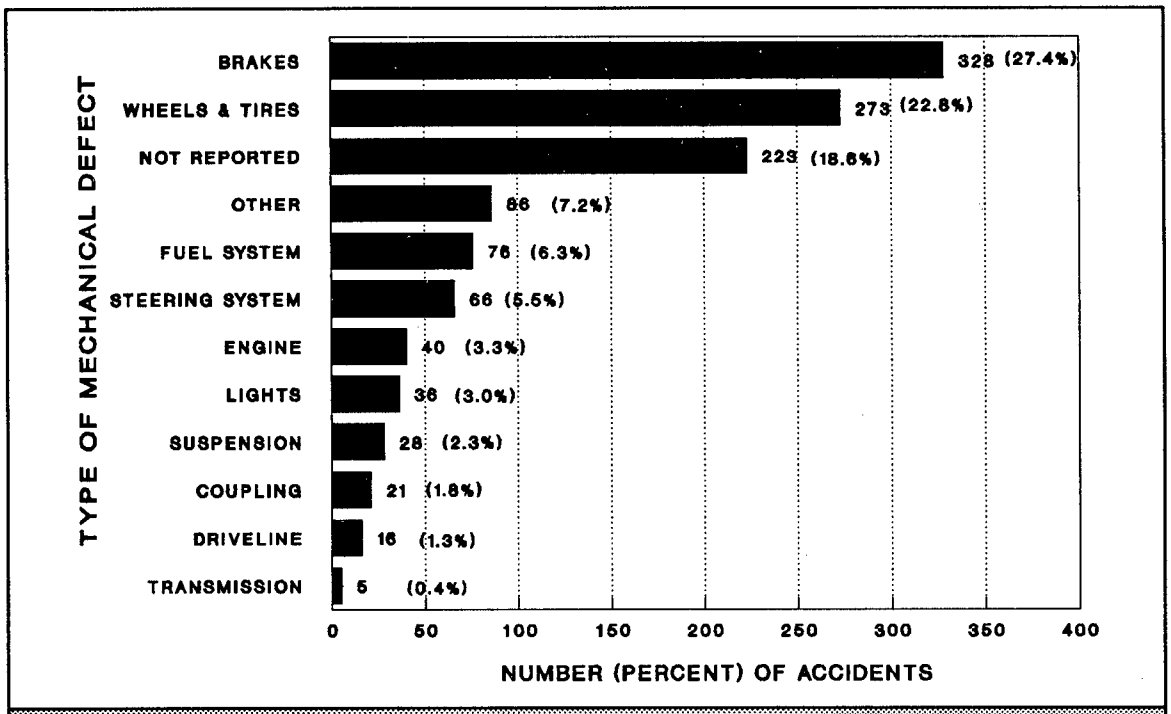

Figure 3-5
Accidents Involving Defects
By Type of Defect
(N = 1,198)

Chapter 4 THE ACCIDENT SETTING

Accident Locale
Environmental Conditions
Time of Day
Day of Week and Month of Year

The typical accident occurred in early winter, on a weekday afternoon. At the time of the accident, weather and road conditions were favorable. The accident happened while the truck was travelling on a divided highway through a rural district. When the accident occurred, the truck driver was probably not seriously hurt, but one person not in the truck was injured or, even occasionally, killed.

ACCIDENT LOCALE

Figure 4-1 shows that a larger proportion of the commercial vehicle accidents reported in 1988 occurred in rural districts (58 percent) than in business districts (36 percent). Table 4-1 similarly indicates that more accidents happened on divided highways (52 percent) than on undivided highways (42 percent).

Table 4-1 also reveals that nearly equal numbers of fatal accidents occurred on divided and undivided highways. However, accidents, when they occurred, were more likely to be fatal on undivided highways than on divided highways. In 1988, 9.3 percent of all commercial vehicle accidents on undivided highways were fatal; only 7.6 percent of the accidents on divided highways were fatal.

Seven percent of the reported accidents occurred on expressway entrance and exit ramps (Table 4-2). Whereas 8.2 percent of all commercial vehicle accidents were fatal, only 5.3 percent of all ramp accidents were fatal. Hence, ramp accidents were 35 percent less likely to generate fatalities than commercial vehicle accidents generally.

ENVIRONMENTAL CONDITIONS

Figure 4-2 examines the relationship between weather, road surface, and light conditions. When a carrier reported rain, snow, sleet, fog, or smog at the time of the accident, the weather conditions were classified as "unfavorable." Similarly,

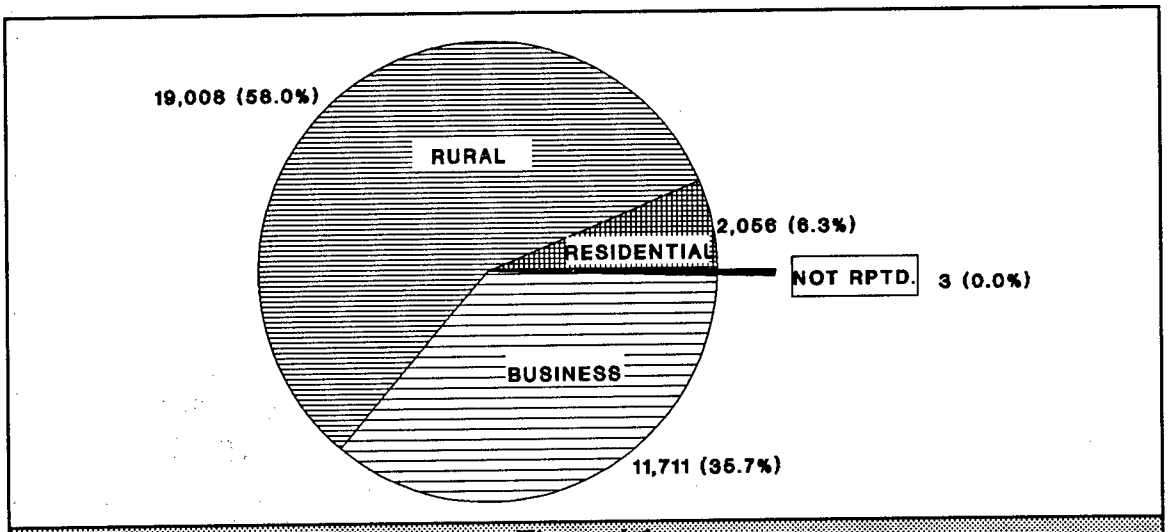

Figure 4-1
Accidents By Land Use
(N=32,778)

Table 4-1
Accident Class Totals
By Highway Type

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
HIGHWAY TYPE								
DIVIDED	1,305	48.8	9,966	53.9	5,888	50.8	17,159	52.3
UNDIVIDED	1,298	48.5	7,962	43.0	4,653	40.1	13,913	42.4
TYPE NOT RPTD.	72	2.7	576	3.1	1,058	9.1	1,706	5.2
TOTAL	2,675	100.0	18,504	100.0	11,599	100.0	32,778	99.9

Table 4-2
Expressway Ramp Accidents

	FATAL ACCIDENTS		INJURY ACCIDENTS		PROPERTY DAMAGE ACCIDENTS		TOTAL ACCIDENTS	
	#	%	#	%	#	%	#	%
ENTRANCE RAMP	54	5.0	617	57.6	401	37.4	1,072	100.0
EXIT RAMP	61	5.5	619	56.2	421	38.2	1,101	99.9
TOTAL RAMP	115	5.3	1,236	56.9	822	37.8	2,173	100.0
ALL ACCIDENTS	2,675	8.2	18,504	56.5	11,599	35.4	32,778	100.1

when a carrier characterized roads as wet, snowy, or icy, road surface conditions were classified as "unfavorable."

Of all commercial vehicle accidents for which environmental conditions were reported in 1988, 62 percent occurred in daylight, 27 percent in the dark, 8 percent at dawn or dusk, and 3 percent under artificial light. Approximately 7 out of every 10 accidents occurred under favorable weather/favorable road condi-

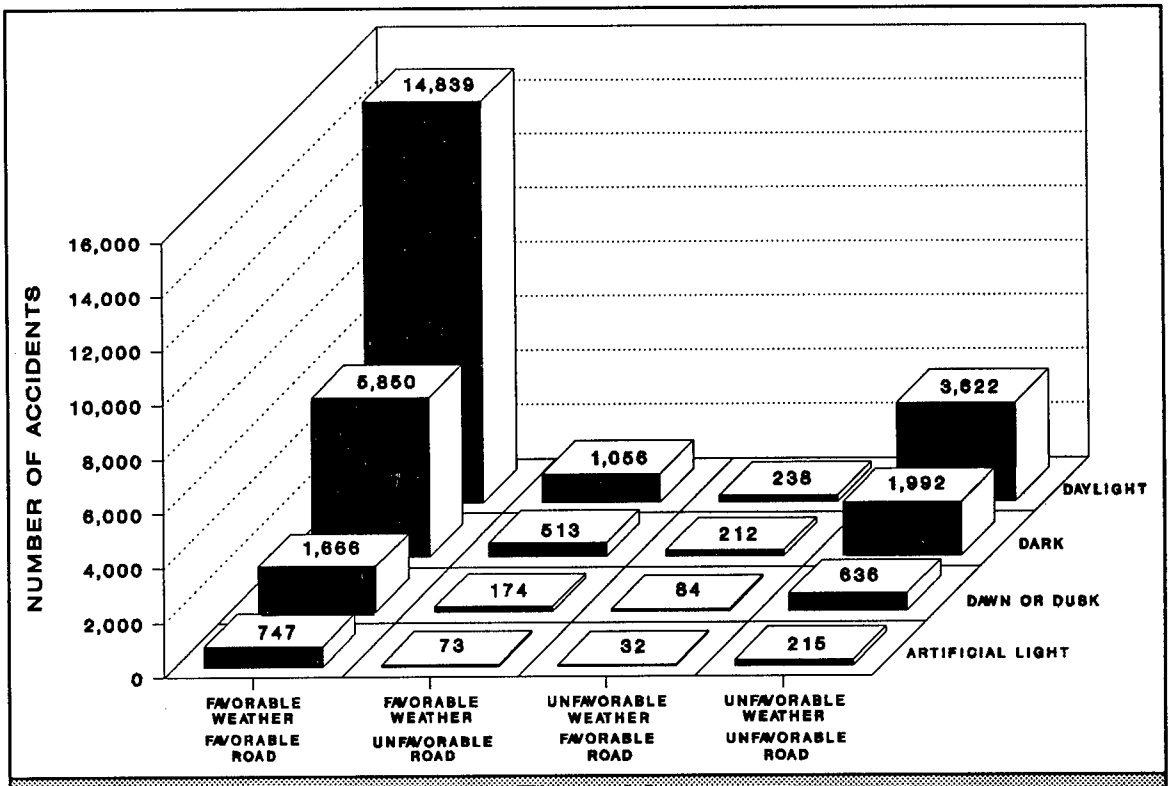

Figure 4-2
Total Accidents
By Light, Weather, and Road Conditions
(N=31,949)

tions. In fact, nearly 5 out of every 10 reported accidents took place in daylight under favorable weather/favorable road conditions.

Figure 4-3 compares accident consequences generated during daylight under favorable weather/favorable road conditions to those produced in the dark under unfavorable weather/unfavorable road conditions. Interestingly, accidents which occurred under ideal environmental conditions resulted in more fatalities/injuries (106 per 100 accidents) than did accidents which happened under adverse conditions (93 per 100 accidents). Was this because drivers were more cautious—and drove slower—under adverse environmental conditions so that accidents, even when they occurred, were less severe? Or was it simply that there was less traffic on the highways—and consequently fewer opportunities for collisions—when environmental conditions were poorest? In examining these data, it should be remembered that they are based on the environmental conditions occurring at the time of the accidents, as reported by the carriers themselves. There is, of course, the possibility that reports of favorable weather/favorable road conditions were exaggerated, given that the *FMCSR* (49 CFR 392.14) specifically prohibit the operation of commercial vehicles under "sufficiently dangerous" conditions.

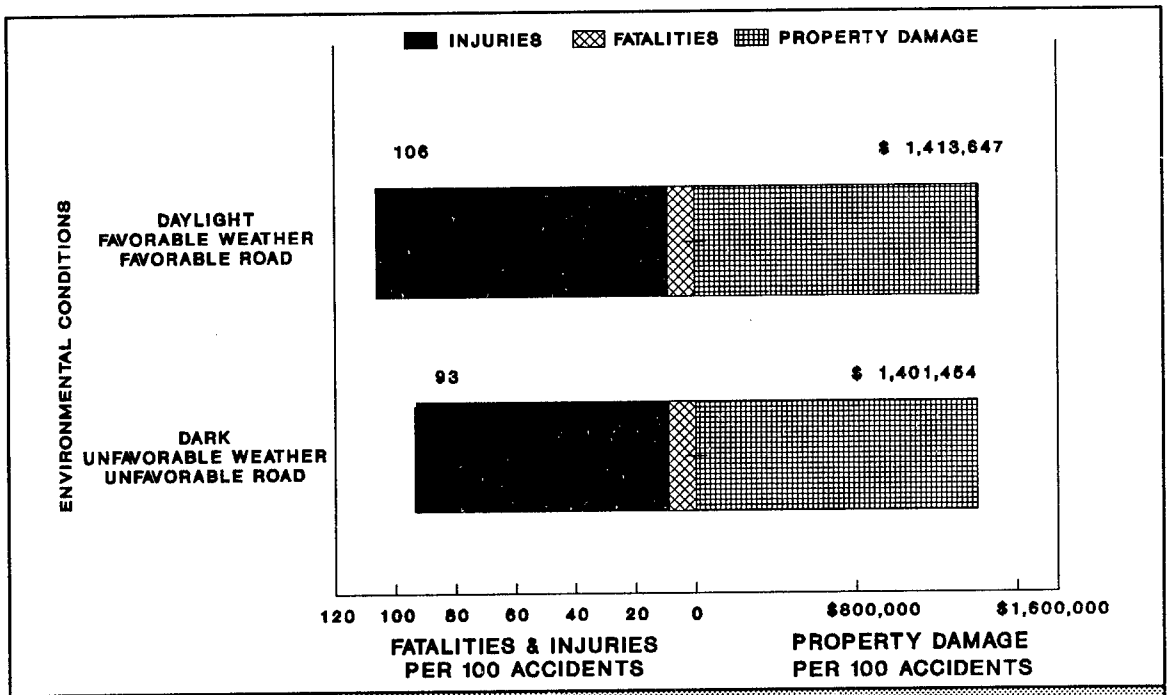

Figure 4-3
Accident Consequences
By Environmental Conditions

TIME OF DAY

Seven out of every 10 commercial vehicle accidents reported in 1988 occurred between 6 a.m. and 7 p.m., the hours during which traffic normally flowed its heaviest. The fewest accidents occurred during the evening hours, from 8 p.m. to 1 a.m.

Figures 4-4 through 4-6 compare accident experience by time of day. On weekdays, total accidents appeared to fluctuate with the general flow of traffic, peaking at noon and again at 3 p.m. (Figure 4-4); not surprisingly, counts of weekend accidents showed less variability, regardless of time of day. Collision accidents (Figure 4-5) peaked between 11 a.m. and 4 p.m., whereas non-collision accident counts were highest at 6 a.m. and at noon. Reported accidents involving both over-the-road vehicles and vehicles transporting goods locally occurred in much greater numbers during the day than at night (Figure 4-6). This was less true for over-the-road accidents, however. While the number of accidents involving local vehicles was over 8 times higher at noon than at midnight, over-the-road accidents were less than two times higher at noon than at midnight. This lower variability in over-the-road accidents may reflect the round-the-clock orientation of long-distance haulers.

Figure 4-7 examines fatalities/injuries for truck occupants and truck non-occupants by time of day. In general, the data show that truck occupants were most likely to be killed or injured in accidents which

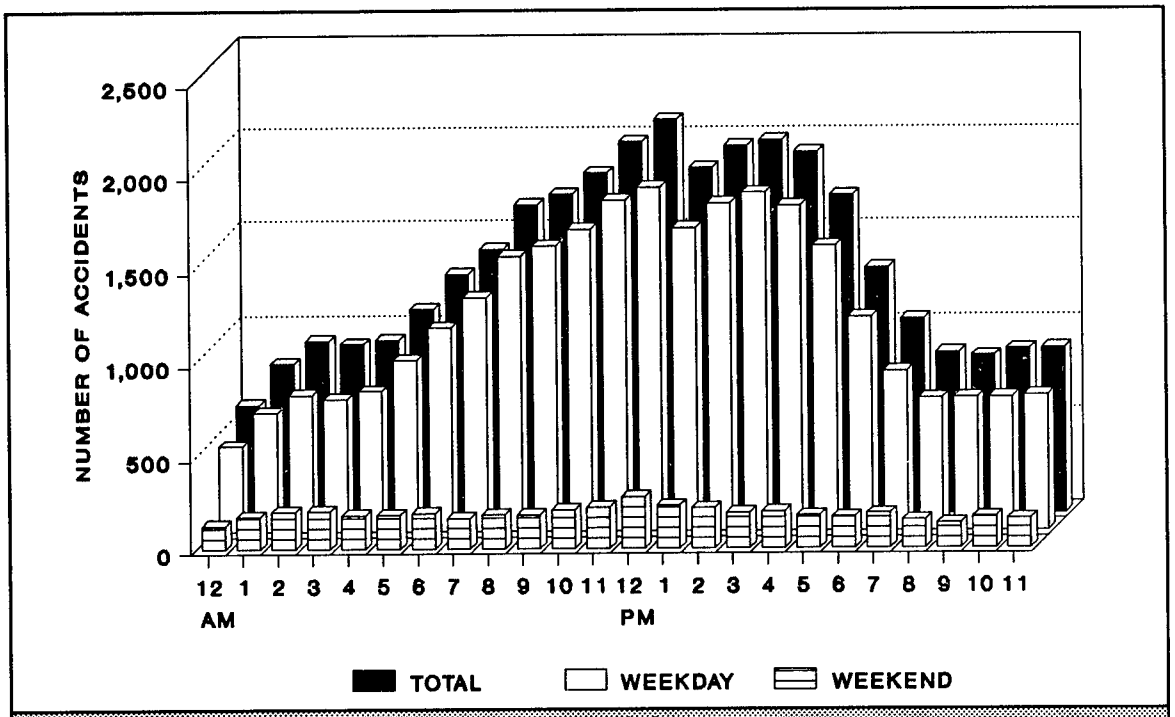

Figure 4-4
Accidents By Time and Type of Day
(N = 32,435)

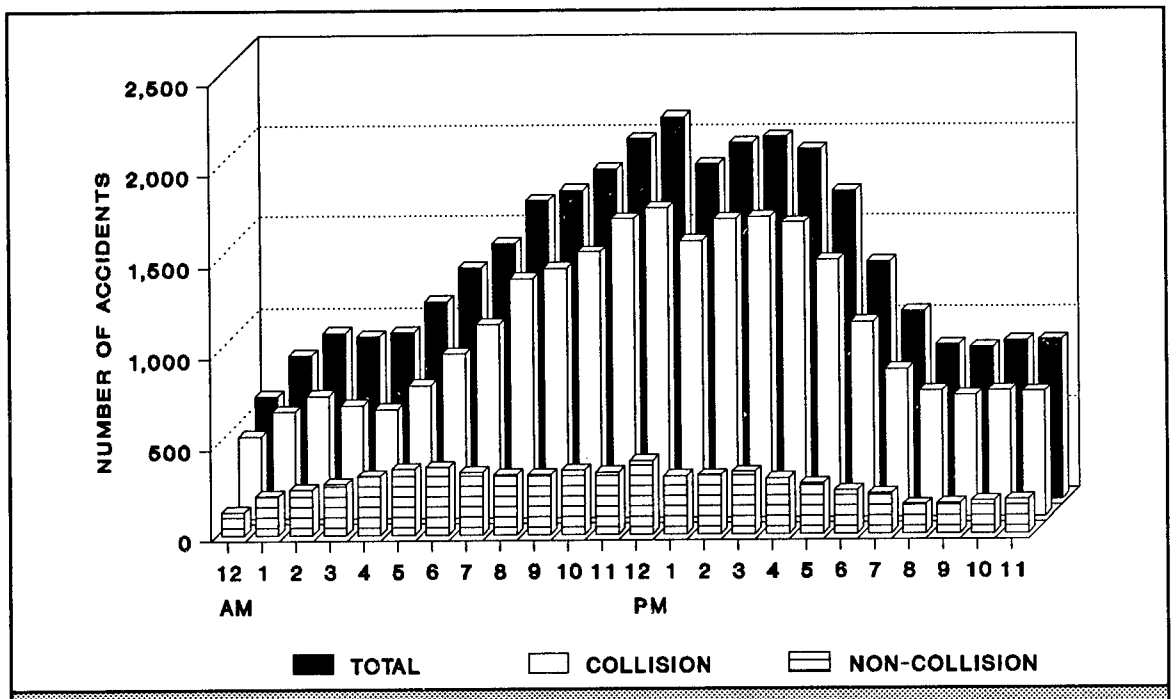

Figure 4-5
Accidents By Time of Day and Accident Type
(N = 32,435)

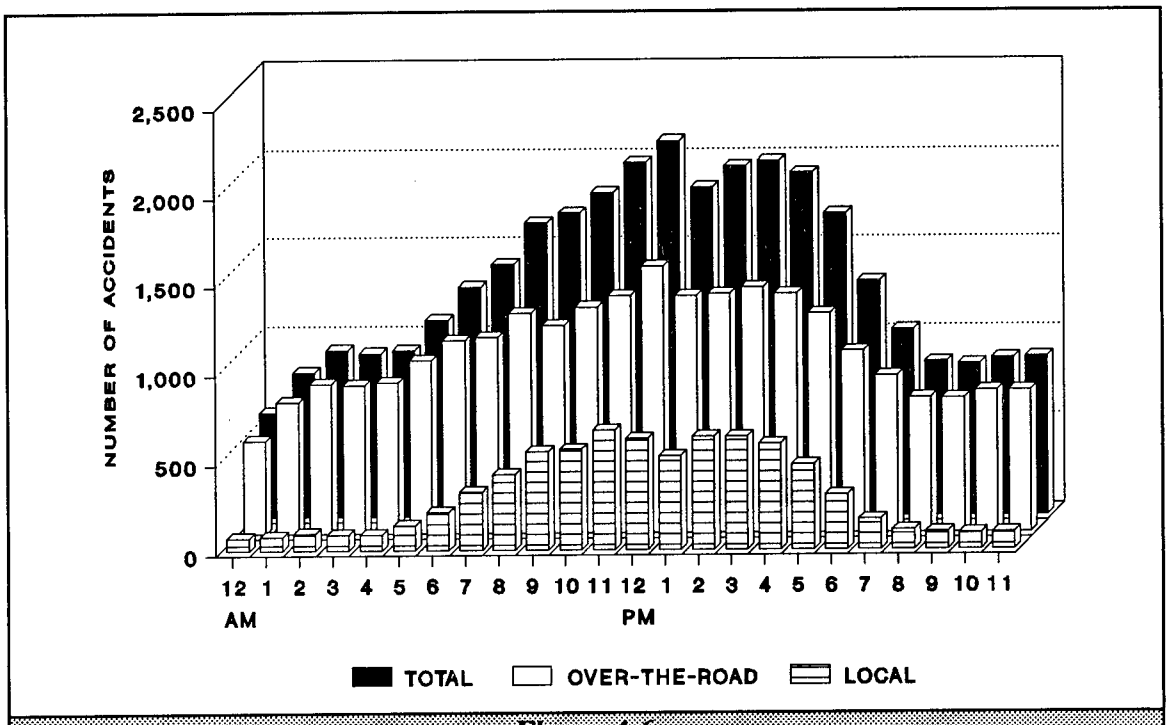

Figure 4-6
Accidents By Time of Day and Trip Type
(N = 32,435)

occurred during the predawn hours. For instance, truck drivers were 56 percent more likely to be killed or injured in accidents which happened between 1 and 6 a.m. than between 1 and 6 p.m. The pattern for truck non-occupants was different: persons not in the truck at the time of the accident were killed or injured at a rate 27 percent higher between 1 and 6 p.m. than between 1 and 6 a.m.

Given that truck occupants were most likely to be killed or injured in accidents which occurred in the predawn hours, one might surmise that nighttime accidents would have been even more severe if the traffic flow during those hours had been heavier.

DAY OF WEEK AND MONTH OF YEAR

Figures 4-8 and 4-9 compare the percentages of 1988 accidents by day of week and month of year, respectively. As expected, considerably fewer accidents involving commercial vehicles occurred on Saturdays and Sundays than on other days of the week (Figure 4-8). Also, the greatest numbers of accidents were reported for the months of January, August, November, and December; the fewest accidents occurred in March, April, May, and July (Figure 4-9).

Table 4-3 displays total accidents, fatalities, injuries, and property damage by carrier type and month.

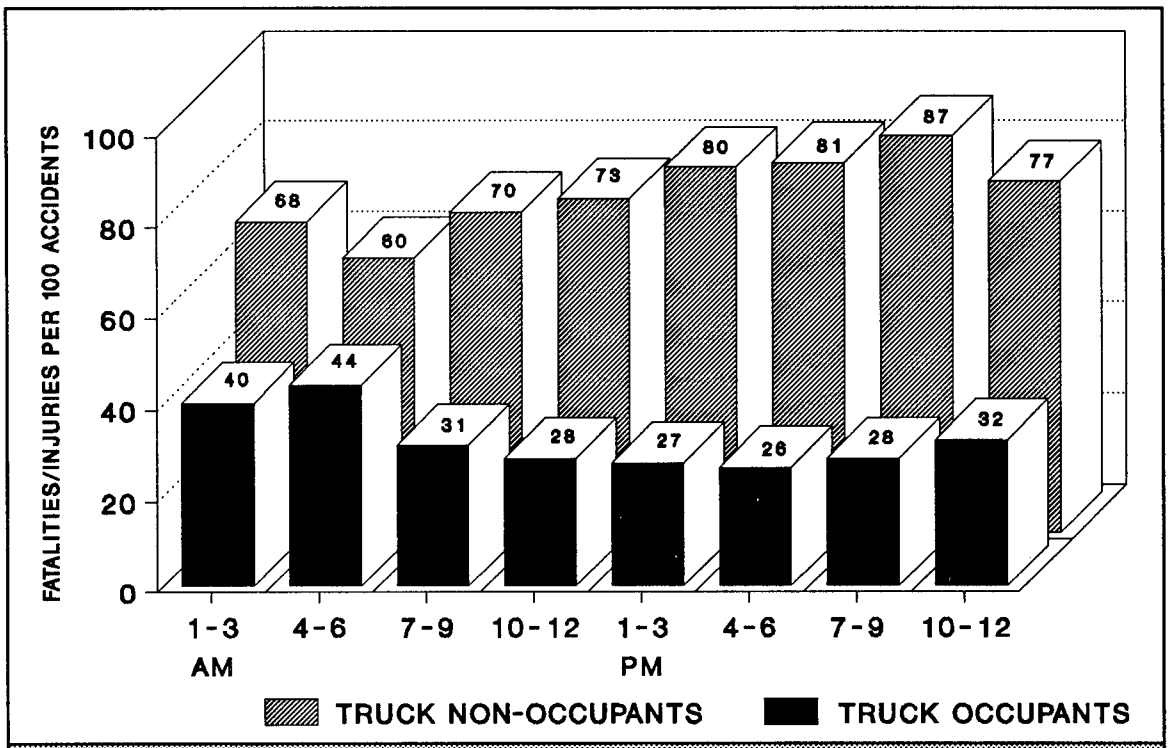

Figure 4-7
Fatalities and Injuries
By Time of Day

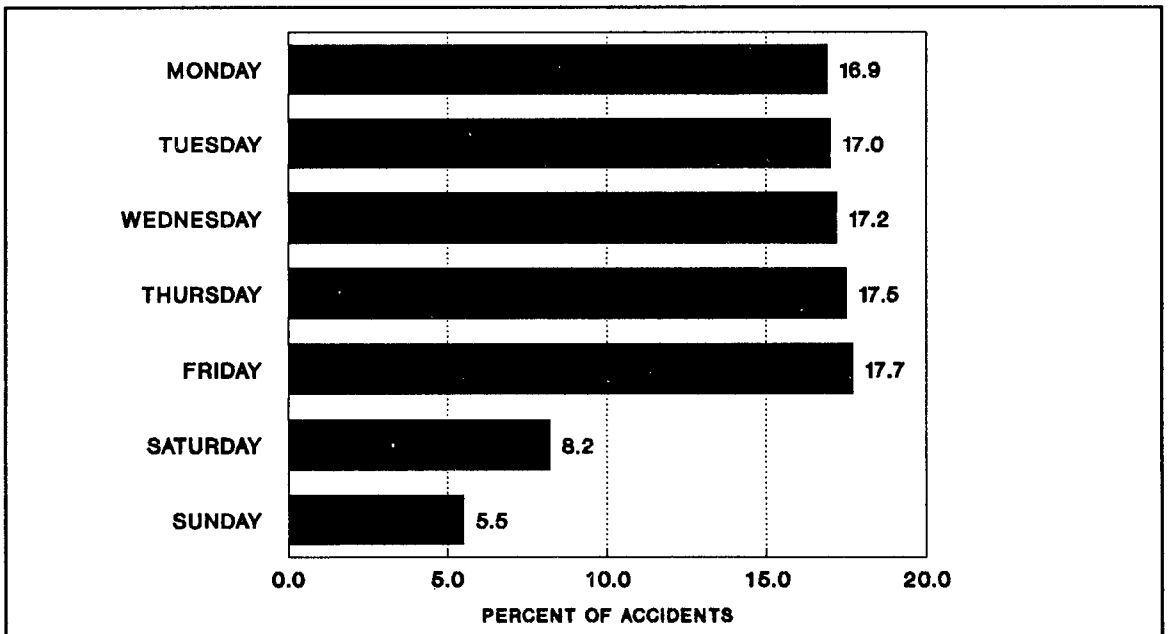

Figure 4-8
Percent of Total Accidents By Day of Week
(N = 32,778)

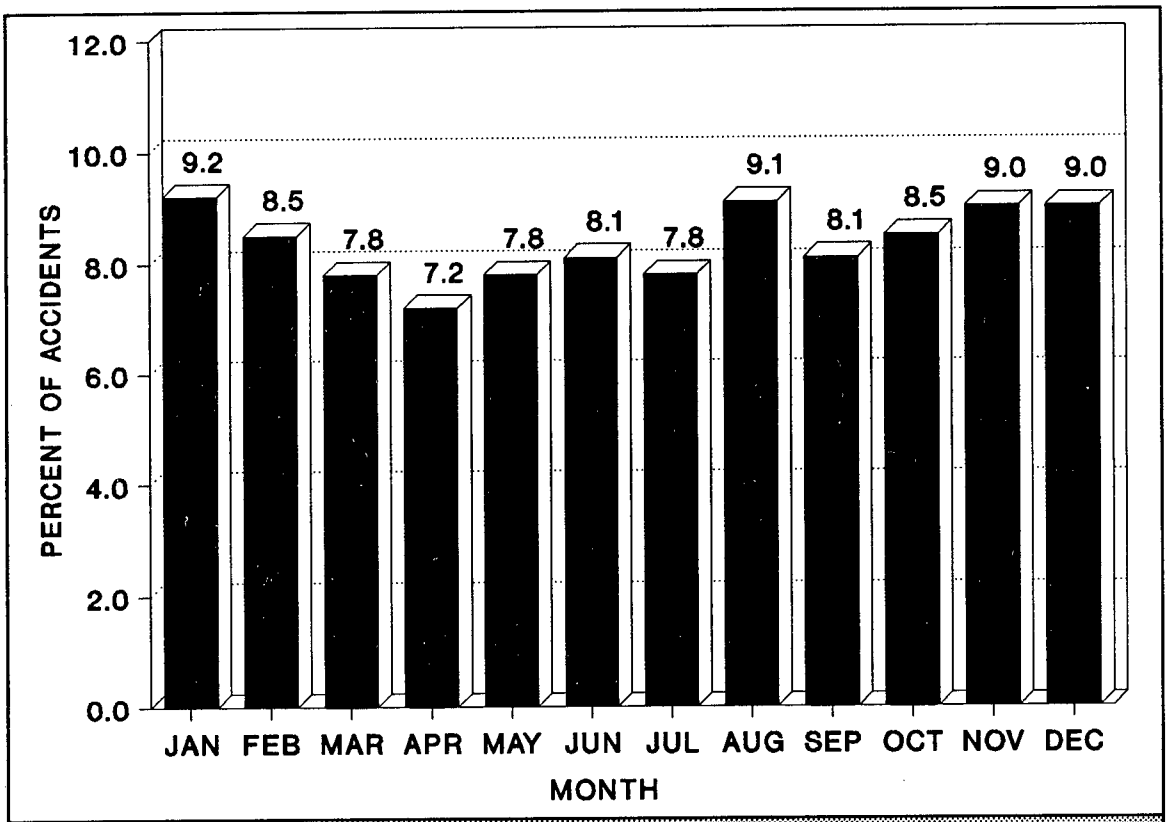

Figure 4-9
Percent of Total Accidents
By Month
(N = 32,778)

Table 4-3
Accidents, Fatalities, Injuries, and Property Damage
By Carrier Type and Month

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ACCIDENTS													
FOR-HIRE	2,941	2,733	2,500	2,302	2,488	2,585	2,502	2,915	2,575	2,707	2,848	2,875	31,971
PRIVATE	66	35	50	57	59	63	52	73	57	66	82	54	714
TYPE NOT RPTD.	9	5	6	5	13	5	5	10	8	11	9	7	93
TOTAL	3,016	2,773	2,556	2,364	2,560	2,653	2,559	2,998	2,640	2,784	2,939	2,936	32,778
FATALITIES													
FOR-HIRE	214	231	256	235	261	291	263	309	258	288	231	350	3,187
PRIVATE	8	6	8	9	13	5	9	16	8	6	17	5	110
TYPE NOT RPTD.	1	0	0	0	1	3	1	1	2	0	2	1	12
TOTAL	223	237	264	244	275	299	273	326	268	294	250	356	3,309
INJURIES													
FOR-HIRE	2,668	2,479	2,332	2,164	2,479	2,567	2,455	2,935	2,545	2,626	2,645	2,692	30,587
PRIVATE	45	27	41	54	69	50	.40	72	51	68	65	50	632
TYPE NOT RPTD.	3	7	5	3	4	5	3	4	13	7	17	5	76
TOTAL	2,716	2,513	2,378	2,221	2,552	2,622	2,498	3,011	2,609	2,701	2,727	2,747	31,295
PROPERTY DAMAGE*													
FOR-HIRE	37,345	33,326	64,476	31,843	35,201	38,263	34,958	40,475	35,480	37,220	37,720	39,018	465,324
PRIVATE	799	531	611	886	889	827	1,642	1,186	835	732	1,128	767	10,832
TYPE NOT RPTD.	96	45	187	60	241	33	224	279	87	149	200	54	1,654
TOTAL	38,240	33,902	65,274	32,790	36,331	39,122	36,823	41,940	36,402	38,101	39,048	39,839	477,810

* IN THOUSANDS (000'S) OF DOLLARS

Chapter 5 THE ACCIDENT

Accident Type Overview
Collision Accidents
Non-Collision Accidents

The typical accident entailed a collision between a commercial vehicle and automobile. Nearly 7 out of every 10 collisions resulted in one or more fatalities or injuries. In general, accident severity appeared to be determined by a variety of factors, including what the commercial vehicle was doing just prior to the accident. For instance, when the truck ventured into an opposing lane of traffic, the ensuing collision tended to be the most severe.

ACCIDENT TYPE OVERVIEW

Almost 80 percent of the accidents reported in 1988 involved collisions. Overall, collision accidents were responsible for 91 percent of the fatalities, 85 percent of the injuries, and 65 percent of the property damage reported. Table 5-1 breaks down accidents and their consequences by accident type.

Percentage breakdowns of collision, non-collision, and total accidents by accident class are shown in Figure 5-1.

Table 5-1
Accidents, Fatalities, Injuries, and Property Damage By Accident Type

	COLLISIONS		NON-COLLISIONS		NOT REPORTED		TOTAL	
	#	%	#	%	#	%	#	%
ACCIDENTS								
FATAL	2,441	91.3	234	8.7	0	0.0	2,675	100.0
INJURY	15,256	82.4	3,248	17.6	0	0.0	18,504	100.0
PROPERTY DAMAGE	8,192	70.6	3,407	29.4	0	0.0	11,599	100.0
TOTAL	25,889	79.0	6,889	21.0	0	0.0	32,778	100.0
FATALITIES	3,009	90.9	300	9.1	0	0.0	3,309	100.0
INJURIES	26,705	85.3	4,590	14.7	0	0.0	31,295	100.0
PROPERTY DAMAGE	$308,694,261	64.6	$169,115,817	35.4	0	0.0	$477,810,078	100.0

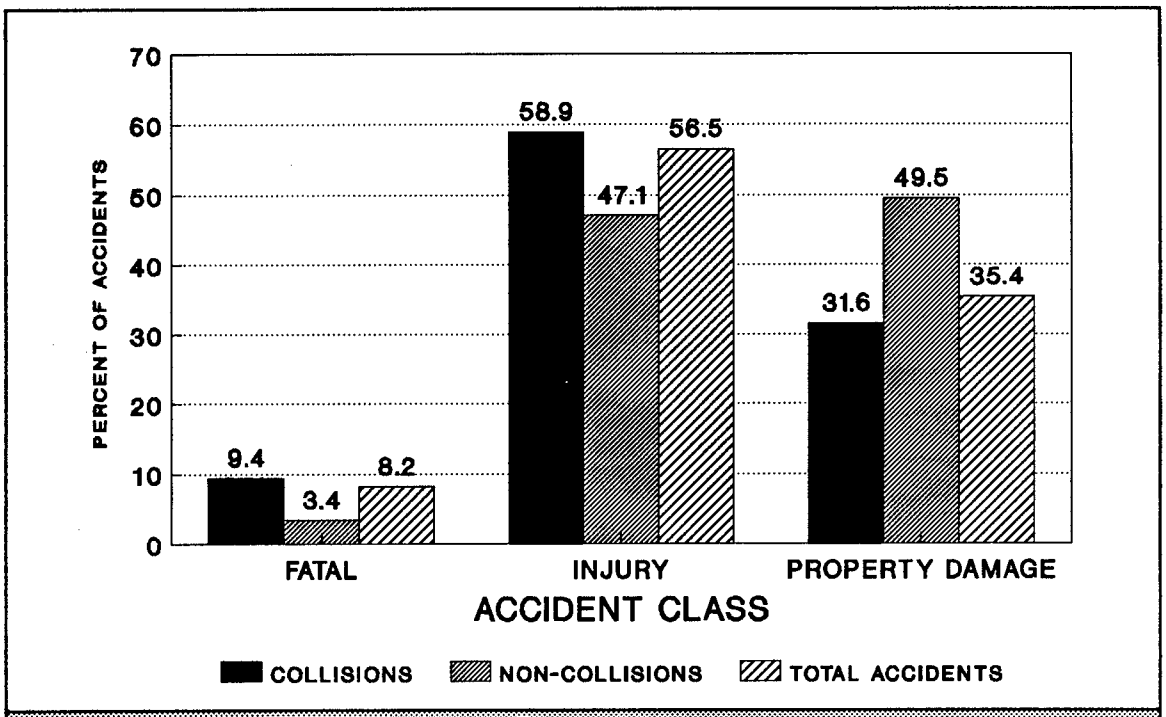

Figure 5-1
Collision, Non-Collision, and Total Accidents By Accident Class

Table 5-2
Accident Consequences By Accident Type

	FATALITIES #	INJURIES #	PROPERTY DAMAGE $
PER 100 COLLISION ACCIDENTS	12	103	1,192,376
PER 100 NON-COLLISION ACCIDENTS	4	67	2,454,867
PER 100 ACCIDENTS	10	95	1,457,716

Sixty-eight percent of the collision accidents resulted in fatalities or injuries, while only 51 percent of the non-collision accidents were as severe. Collisions were nearly three times more likely to result in fatalities, and 25 percent more likely to result in injuries.

Accident severity rates are compared by accident type in Table 5-2. While fatalities and injuries were greater in collisions, the property damage rate was more than twice as high in non-collision accidents.

COLLISION ACCIDENTS

Table 5-3 indicates that, in 1988, 61 percent of all collision accidents occurred when commercial vehicles and automobiles collided. In fact, truck/automobile accidents accounted for 65 percent of all collision-induced fatalities, 69 percent of the injuries, and

47 percent of the property damage. Although truck/pedestrian accidents comprised less than 2 percent of all collisions, they resulted in nearly 6 percent of the collision-induced fatalities. Similarly, truck/bus accidents accounted for just 0.7 percent of collisions, but over 2 percent of the collision-induced injuries.

Table 5-3
Collision Accidents, Fatalities, Injuries, and Property Damage By Type of Collision

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
OTHER OBJECT INVOLVED								
COMMERCIAL TRUCK	4,541	17.5	430	14.3	4,153	15.6	84,233,589	27.3
FIXED OBJECT	2,862	11.1	127	4.2	1,278	4.8	46,831,663	15.2
AUTOMOBILE	15,795	61.0	1,947	64.7	18,340	68.7	145,051,540	47.0
PEDESTRIAN	427	1.6	178	5.9	280	1.0	2,002,516	0.6
BUS	174	0.7	10	0.3	559	2.1	1,905,974	0.6
TRAIN	198	0.8	30	1.0	153	0.6	7,200,824	2.3
BICYCLIST	104	0.4	25	0.8	82	0.3	480,902	0.2
ANIMAL	167	0.6	7	0.2	72	0.3	2,377,712	0.8
MOTORCYCLE	196	0.8	47	1.6	172	0.6	1,095,965	0.4
OTHER	1,362	5.3	200	6.6	1,565	5.9	16,821,008	5.4
OBJECT NOT RPTD.	63	0.2	8	0.3	51	0.2	692,568	0.2
TOTAL	25,889	100.0	3,009	99.9	26,705	100.1	308,694,261	100.0

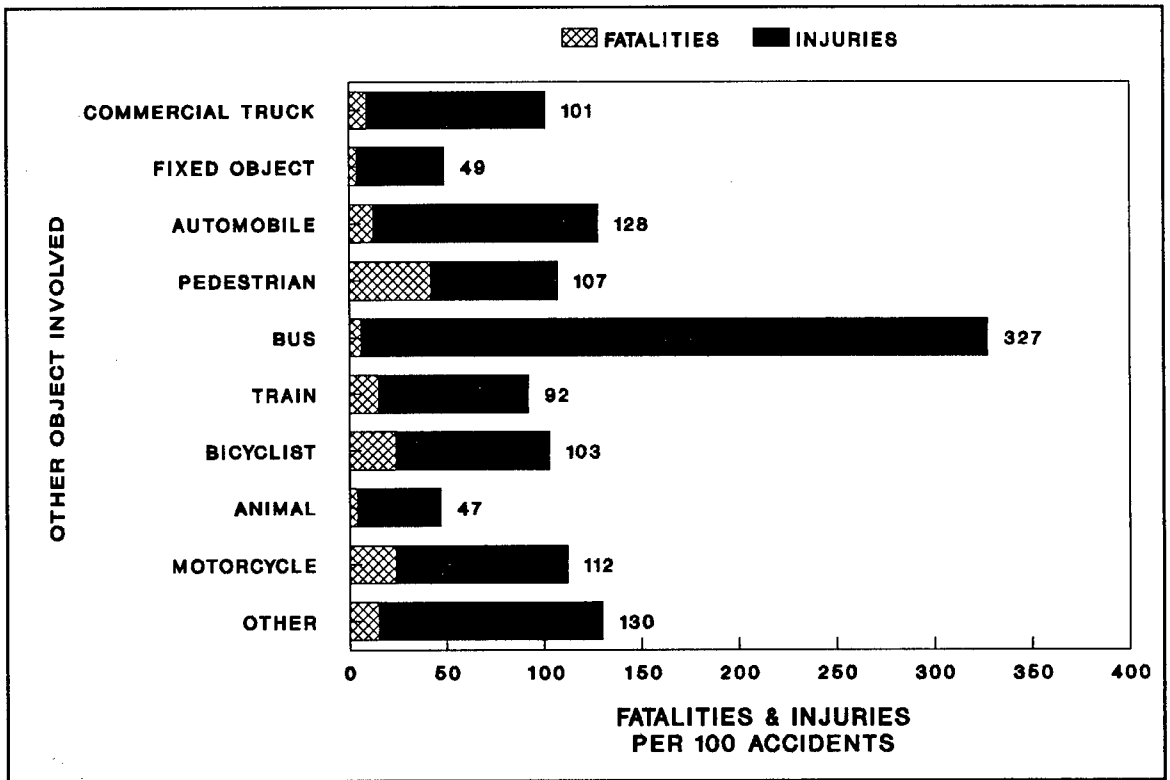

Figure 5-2
Fatalities and Injuries Per 100 Collision Accidents

Figure 5-2 examines fatalities/injuries per 100 accidents for collisions involving different combinations of vehicles, persons, and objects. Truck/bus accidents were the most severe, generating 327 fatalities/injuries per 100 accidents. One might reasonably infer that this was due largely to the disproportionately high number of bus passengers potentially exposed whenever truck/bus accidents occurred.

Accidents were frequently the most severe when commercial vehicles collided with pedestrians and other persons not protected inside vehicles. Hence, truck collisions with pedestrians, bicyclists, and motorcyclists generally resulted in higher rates of fatalities per accident than did truck collisions with other trucks, automobiles, or buses.

The estimated value of property damaged in collisions tended to vary according to the value of the property potentially exposed in each accident. Thus, the average value of property damaged in truck/train collisions was considerably higher than the value of property damaged in truck/truck collisions (Figure 5-3). Similarly, the average value of property damaged in truck/truck collisions was more than that damaged in truck/automobile collisions.

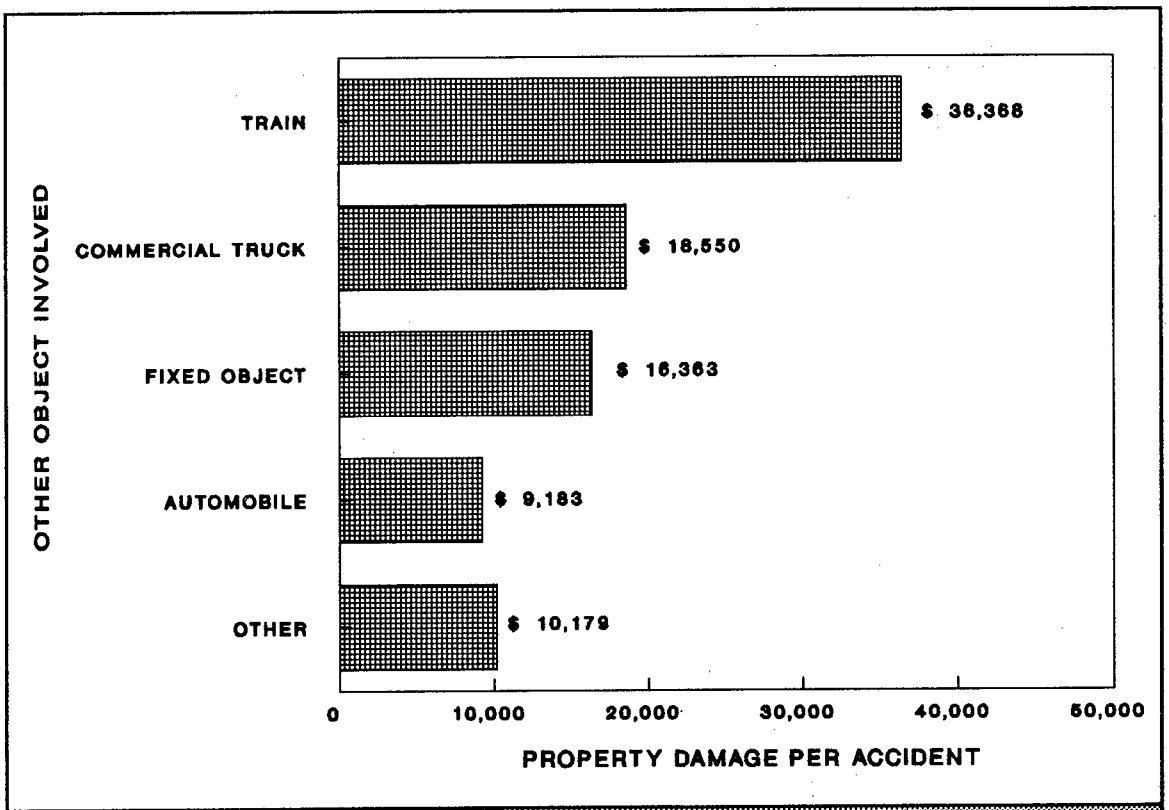

Figure 5-3
Property Damage Per Accident
By Type of Collision

Accident severity by the types of "movements" in which commercial vehicles were engaged just before the collisions occurred is summarized in Figure 5-4. In general, accidents were most severe when the commercial vehicles were reported to have crossed into opposing lanes of traffic—the head-on collisions resulting from lane crossings produced, on average, 204 fatalities/injuries per 100 accidents.

In reviewing the data in Figure 5-4, note that the vehicle movements shown pertain to the commercial vehicles only; the movements of other vehicles involved in the accidents are not presented.

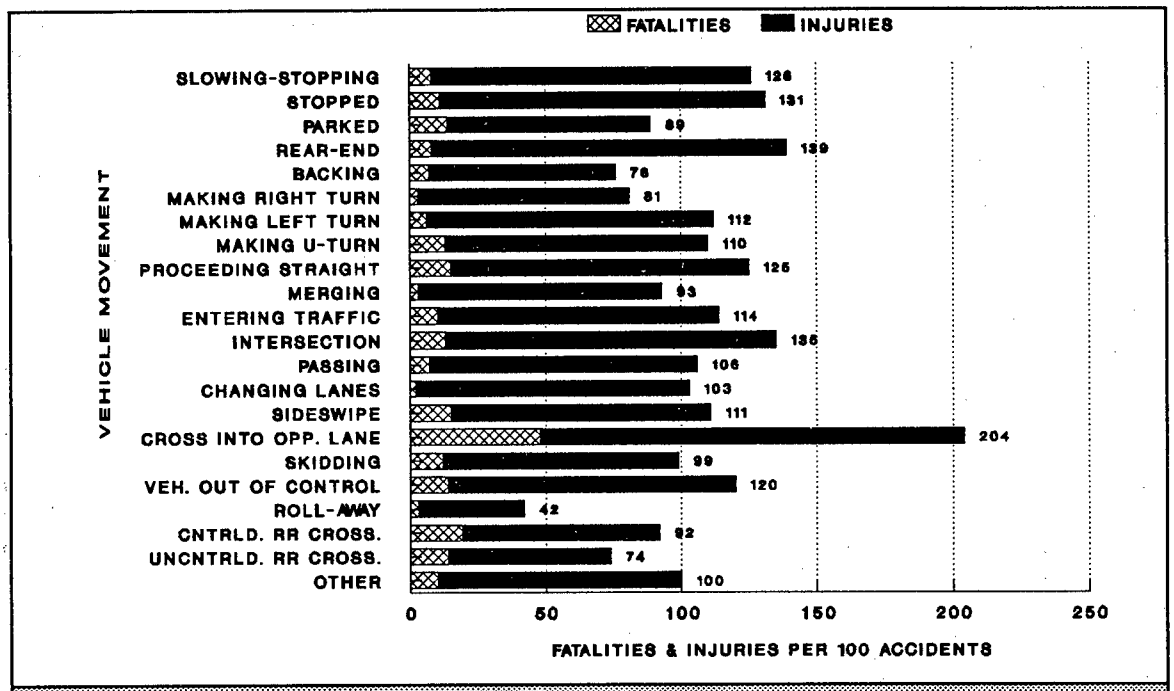

Figure 5-4
Fatalities and Injuries in Vehicular Collisions By Reporting Vehicle Movement

NON-COLLISION ACCIDENTS

As indicated in Table 5-4, most 1988 non-collision accidents were the result of one of three actions: truck overturns (47 percent), trucks running off the road (27 percent), and truck jackknifes (16 percent). Overturns and trucks running off the road accounted for approximately 4 out of every 5 non-collision fatalities and injuries.

Non-collision accident severity rates ranged from 16 fatalities/injuries per 100 accidents when fires were the primary accident event, to 80–81 fatalities/injuries per 100 accidents when trucks ran off the road or overturned (Figure 5-5). Although fires were the least severe type of non-collision accident, they were the most costly in terms of property damage, averaging $153,433 per accident (Figure 5-6).

Table 5-4
Non-Collision Accidents, Fatalities, Injuries, and Property Damage
By Type of Non-Collision

	ACCIDENTS		FATALITIES		INJURIES		PROPERTY DAMAGE	
	#	%	#	%	#	%	$	%
TYPE OF NON-COLLISION								
OVERTURN	3,218	46.7	114	38.0	2,478	54.0	73,008,289	43.2
RAN OFF THE ROAD	1,833	26.6	127	42.3	1,348	29.4	40,033,412	23.7
JACKKNIFE	1,093	15.9	19	6.3	490	10.7	11,925,861	7.1
FIRE	235	3.4	6	2.0	32	0.7	36,056,711	21.3
LOSS OF CARGO	192	2.8	2	0.7	93	2.0	3,113,149	1.8
CARGO SHIFT	102	1.5	3	1.0	51	1.1	2,224,931	1.3
SEPARATION OF UNITS	98	1.4	4	1.3	25	0.5	1,358,053	0.8
TYPE NOT RPTD.	71	1.0	20	6.7	50	1.1	896,404	0.5
OTHER	47	0.7	5	1.7	23	0.5	499,007	0.3
TOTAL	6,889	100.0	300	100.0	4,590	100.0	169,115,817	100.0

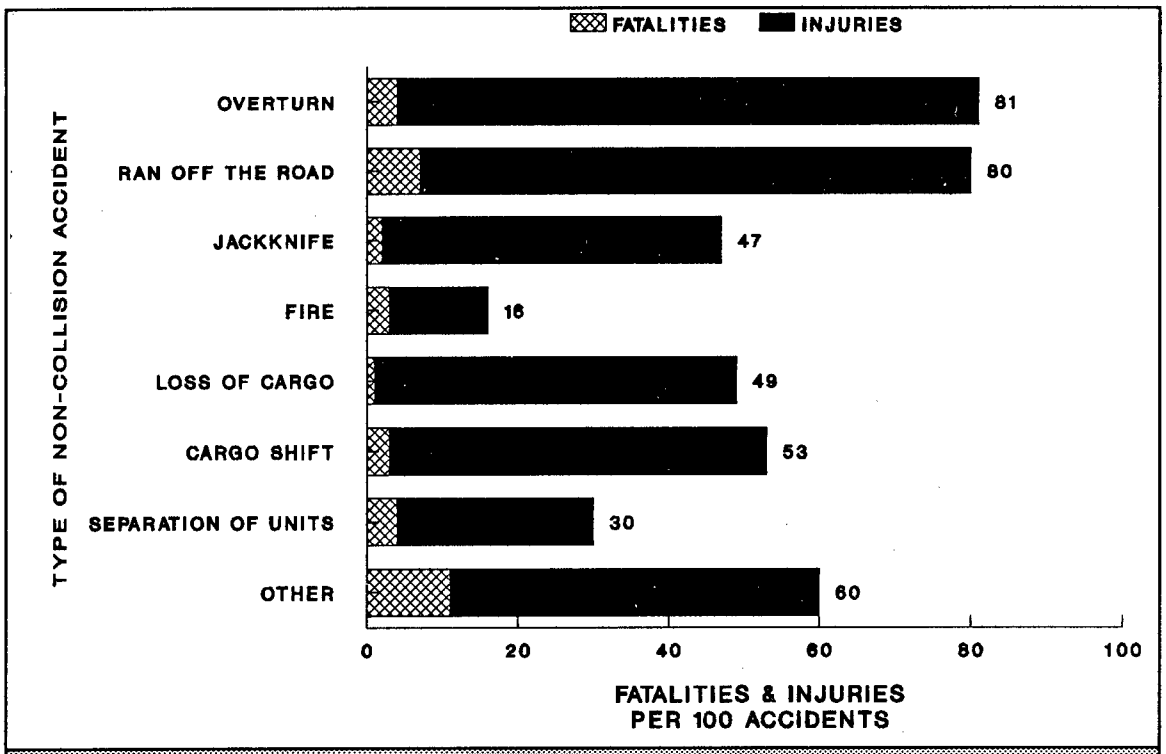

Figure 5-5
Fatalities and Injuries
Per 100 Non-Collision Accidents

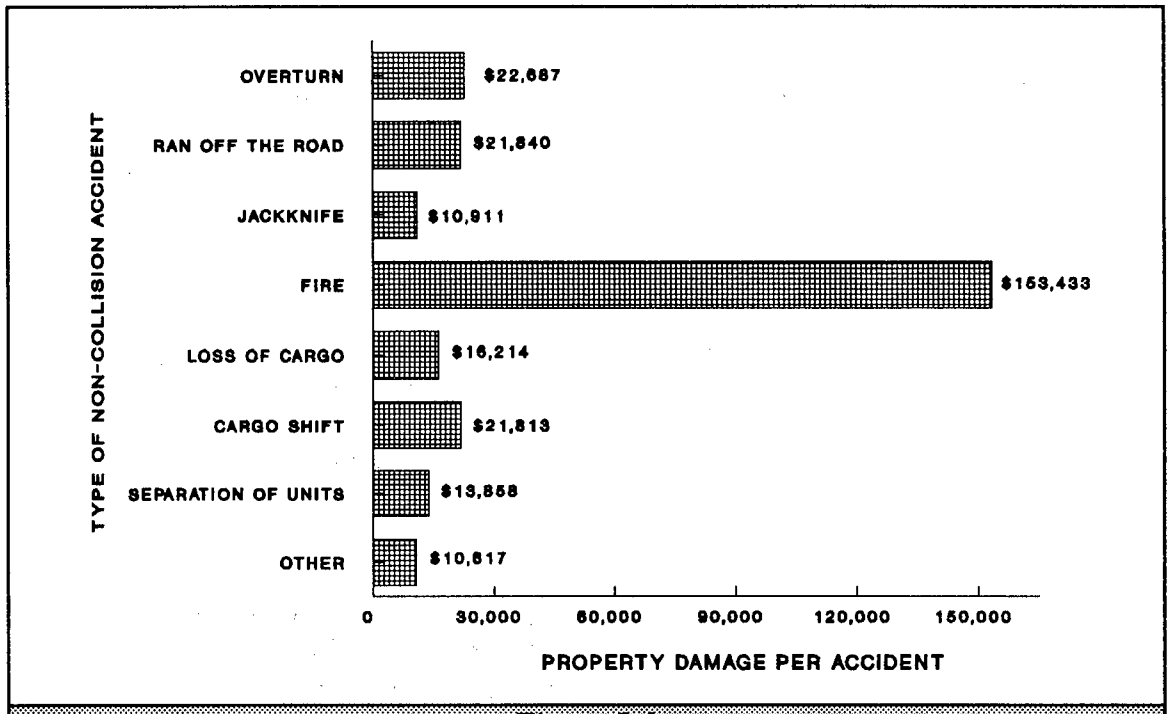

Figure 5-6
Property Damage Per Accident
By Type of Non-Collision

APPENDIX

Glossary
MCS 50-T Accident Report Form

GLOSSARY

Accident Classes. Used to categorize commercial vehicle accidents according to accident severity. The three classes referred to in this report are: fatal accidents, injury accidents, and property damage accidents.

Accident Consequences. The physical results of motor vehicle accidents. Consequences include fatalities, injuries, and property damage.

Accident Severity. Measures the seriousness of an accident according to the type and quantity of the accident's consequences. In this report, fatalities are more severe than injuries, and injuries are more severe than property damage. See also "Fatalities/Injuries."

Accident Type. "Collision" or "non-collision."

Carrier Type. "For-hire" or "private."

Collision Accident. An accident involving a collision between a commercial motor vehicle and another object. Collision objects include trains, other motor vehicles, pedestrians, bicyclists, animals, and fixed objects.

Driveaway-Towaway. Refers to a carrier operation, such as a fleet of tow trucks, used to transport other vehicles, when some or all wheels of the vehicles being transported touch the road surface (49 CFR 390.9).

Fatal Accident. An accident for which at least one fatality was reported.

Fatalities/Injuries. Refers to the average number of fatalities and injuries which occurred per one hundred accidents. Frequently used in this report as an index of accident severity.

Fatality. A death resulting from a motor vehicle accident.

Fatality Rate. The average number of fatalities which occurred per accident or per one hundred accidents.

50-T Report. Form MCS 50-T, the *Motor Carrier Accident Report (Property-Carrying).* Commercial carriers subject to the Department of Transportation Act are required to submit a 50-T report to the Federal Highway Administration on each reportable accident in which they are involved.

FMCSR. *Federal Motor Carrier Safety Regulations*. The FMCSR are contained in the *Code of Federal Regulations*, Title 49, Chapter III, Subchapter B.

For-Hire Carrier. A commercial motor carrier whose primary business activity is the transportation of property by motor vehicle.

ICC Authorized Carrier. A for-hire motor carrier engaged in interstate or foreign commerce, subject to economic regulation by the Interstate Commerce Commission.

ICC Exempt Carrier. A for-hire motor carrier transporting commodities or conducting operations not subject to economic regulation by the Interstate Commerce Commission.

Injury. Bodily injury resulting from a motor vehicle accident. To qualify as an

"injury," the injured person must require and receive medical treatment away from the accident scene.

Injury Accident. An accident for which at least one injury, but no fatalities, were reported.

Injury Rate. The average number of non-fatal injuries per accident or per one hundred accidents.

Jackknife. A non-collision accident in which a tractor and its trailer slide together, forming a V-shaped angle of 90 degrees or less.

Local Trip. An intracity or short mileage trip by commercial motor vehicle.

Non-Collision Accident. A motor vehicle accident which does not involve a collision. Non-collision accidents include jackknifes, overturns, fires, cargo shifts and spills, and incidents in which trucks run off the road.

Over-the-Road Trip. An intercity movement by commercial motor vehicle.

Private Carrier. A commercial motor carrier whose highway transportation activities are incidental to, and in furtherance of, its primary business activity.

Property Damage. The dollar value of property damage incurred in motor vehicle accidents, as estimated by the carrier reporting the accident.

Property Damage Accident. An accident for which property damage of $4,400 or more, but no fatalities or injuries, was reported.

Property Damage Rate. The average amount of property damage per accident or per one hundred accidents.

Property Damage Threshold. The amount of property damage used to determine whether an accident not involving fatalities or injuries is reportable under the *FMCSR*. In 1988, the property damage threshold was $4,400.

Reportable Accident. A motor vehicle accident involving a carrier subject to the Department of Transportation Act, which results in a fatality, injury, or property damage of $4,400 or more (49 CFR 394.3).

Trip Type. "Local" or "over-the-road."

Vehicle Configuration. The combination of vehicular units comprising a commercial motor vehicle. One of the most common vehicle configurations is the "tractor-semitrailer" configuration.

Form Approved
OMB No. 004–R2394

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF MOTOR CARRIER SAFETY

MOTOR CARRIER ACCIDENT REPORT

Original and two copies of MCS 50-T shall be filed with the Director, Regional Motor Carrier Safety Office, FHWA, as required by 394.9. Copy shall be retained in carrier's file. Circle or (X) appropriate boxes below.

1. Name of carrier *(Corporate business name)* (7–21)

2. Principal Address *(Street and no., City, State, ZIP Code.)* (22–50)

3. Type of carrier (51–66) [A] Private, Employer ID No. (IRS)_____ [B] ICC authorized, MC _____ [C] Other *(Specify)* _____ Employer ID No. (IRS)_____

4. Type of trip (67) [A] Over-the-road [B] Local pick-up and delivery operation

5. Place accident occurred *(Nearest Town or City, State)* (68–78)

5A. Type of district (79) [A] Residential [B] Rural [C] Primarily business

6. Street or highway *(Route or Name)* (7–16)

6A. Location if off highway (17–26)

7. Day of week (27) [A] M [B] T [C] W [D] TH [E] F [F] S [G] S

8. Date accident occurred (28–33) ...../...../.....

9. Time accident occurred *(Military time to nearest hour)* (34–35)

10. ACCIDENT TYPE *(Primary Event)*

10A. Collision *(Check appropriate box)* (36) [A] Not applicable [B] Collision with moving object [C] Collision with fixed or parked object

10B. Collision *(Check other object involved)* (37–45)
[A] Not applicable
[B] Commercial truck
[C] Fixed object
[D] Automobile
[E] Pedestrian
[F] Bus
[G] Train
[H] Bicyclist
[I] Animal
[J] Motorcycle
[K] Other *(Specify)*_____

10C. Collision with another vehicle—Accident Classification *(Check appropriate box)* zzz [ ] not applicable

(46–48)	VEHICLES 1	2	3	ACTION	(46–48)	VEHICLES 1	2	3	ACTION
A				Slowing—Stopping	L				Intersection
B				Stopped	M				Passing
C				Parked	N				Changing Lanes
D				Rear-end	O				Sideswipe—Opposite Direction
E				Backing	P				Head-On—Crossed Into Opposing Lane
F				Making Right Turn	Q				Skidding
G				Making Left Turn	R				Vehicle Out-Of-Control
H				Making U-Turn	S				Roll-Away
I				Proceeding Straight	T				Controlled Railroad Crossing
J				Merging	U				Uncontrolled Railroad Crossing
K				Entering Traffic From Shoulder, Median, Parking Strip or Private Drive	V				Other *(Specify)*_____

10D. Non-collision *(Check primary event)* (49–57)
[A] Not applicable
[B] Ran off road
[C] Jackknife
[D] Overturn
[E] Separation of units
[F] Fire
[G] Loss or spillage of cargo
[H] Cargo shift
[I] Other *(Specify)* _____

10E. If not primary event, did accident result in (58) [A] Not applicable
[B] Spillage of hazardous cargo
[C] Fire
[D] Spillage of non-hazardous cargo
[E] Explosion

11. DRIVER INFORMATION

11A. Name of your driver (59–72)

11B. Age (73–74)

11C. Social Security No. (7–15) ...../...../.....

11D. How long employed as your driver *(To nearest year)* (16–17)

11E. Hours actually driving since last period of 8 consecutive hours off duty (18)
[A] 1 hr. [B] 2 hrs. [C] 3 hrs. [D] 4 hrs. [E] 5 hrs. [F] 6 hrs. [G] 7 hrs. [H] 8 hrs. [I] 9 hrs. [J] 10 hrs. [K] 11–12 hrs. [L] Not applicable

11F. Estimated hours of driving for entire trip or portion of trip, since last period of 8 consecutive hours off duty (19)
[A] 1 hr. [B] 2 hrs. [C] 3 hrs. [D] 4 hrs. [E] 5 hrs. [F] 6 hrs. [G] 7 hrs. [H] 8 hrs. [I] 9 hrs. [J] 10 hrs. [K] 11–12 hrs. [L] Not applicable

11G. Condition of driver (20–28)
[A] Apparently normal
[B] Sick
[C] Had been drinking
[D] Dozed at wheel
[E] Medical waiver
[F] Other *(Specify)* _____

11H. Date of last medical certificate (29–34) ...../...../.....

Form MCS 50–T (Property-Carrying) (Rev. 8–72) Previous editions of this form are obsolete
(over)

12. CARRIER'S VEHICLE(S)

	Type (35–39)	Year (40–41)	No. of Axles (42–43)	Make (44–53)	Model No. (54–63)	Company No. (64–69)	TYPE OF BODY (70–74) Van	Flat	Tank	Auto Carrier	Other (Specify)
A	Truck										
B	Tractor										
C	Semi-trailer										
D	Full trailer										
E	Full trailer (2nd)										
F	Other (Specify)_____										

13. Total length of vehicle/comb. (7–9) Ft. | 13A. Total width of vehicle or cargo (10–11) Ft. | 13B. Weight (cargo) (12–17) Lbs. | 13C. Weight (gross) (18–23) Lbs.

14. Type of fuel [A] Gasoline [B] Diesel [C] L.P.G. [D] Other (Specify)_____ (24–29)

15. Cargo at time of accident (Your vehicle) (30–38)
[A] Hazardous materials in cargo (Specify classification) _____ [B] Non-hazardous materials in cargo

16. Check one of the following as principal type of cargo
[A] General freight
[B] Household goods or uncrated furniture/fixtures
[C] Metal: Coils, sheets, rods, plates, etc.
[D] Heavy machinery or other large objects
[E] Motor vehicles
[F] Driveaway-towaway
[G] Gases in bulk
[H] Solids in bulk
[I] Liquids in bulk
[J] Explosives
[K] Logs, poles, lumber
[L] Empty
[M] Refrigerated foods
[N] Mobile home (39–44)
[O] Farm products
[P] Other (Specify) _____

17. Was your driver killed? (45) [A] Yes [B] No | 17A. Was driver injured? (46) [A] Yes [B] No | 17B. Was your relief driver killed? (47) [A] Yes [B] No [C] N/A | 17C. Was relief driver injured? (48) [A] Yes [B] No [C] N/A

18. Number of other authorized persons in your vehicle
Killed _____ Injured _____ (49–50)

18A. Number of unauthorized persons in your vehicle
Killed _____ Injured _____ (51–52)

19. Total number of other persons killed____ injured____ (53–56) | 19A. Amount of total property damage in dollars $_____ (57–61)

20. Were mechanical defects or failures apparent on your vehicle at time of accident? [A] Yes [B] No (62)

21. Check appropriate boxes (Mechanical defects or failures) (63–69)
[A] Not applicable
[B] Fuel system
[C] Wheels and tires
[D] Steering system
[E] Suspension
[F] Transmission
[G] Driveline
[H] Engine
[I] Brakes
[J] Lights
[K] Coupling
[L] Other (Specify) _____

22. Was your vehicle equipped with seat belts? [A] Yes [B] No (70)

23. Were seat belts in use by your driver(s) at time of accident? [A] Yes [B] No (71)

24. OTHER VEHICLES INVOLVED

24A. Company name or operator (Vehicle #2) | 24B. Address | 24C. Type of vehicle

24D. Company name or operator (Vehicle #3) | 24E. Address | 24F. Type of vehicle

25. Weather (7–12)
[A] Rain [C] Snow [E] Cloudy/overcast
[B] Clear [D] Fog/Smog [F] Sleet [G] Other (Specify) _____

25A. Light (13–18)
[A] Day [C] Dawn [E] Dusk [F] Dark
[B] Artificial lights [D] Other (Specify) _____

26. Road surface (19–23)
[A] Dry [C] Snowy [E] Other
[B] Wet [D] Icy (Specify)_____

26A. Total number of lanes (24)
[A] One lane [C] Three lanes
[B] Two lanes [D] Four or more lanes

26B. Type of highway (25)
[A] Divided [B] Undivided

26C. Check appropriate box [A] Entrance ramp (Expressway) [B] Exit ramp (Expressway) [C] Not applicable (26)

27. Account of accident by carrier official

28. Name and title of person signing report | 29. Signature

30. Telephone Number
Area Code | 31. Date report submitted (27–32) ____/____/____

Form MCS 50–T (8–72)

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