

INDIANA TRAFFIC SAFETY FACTS

May 2008

A collision produces three levels of data: collision, unit (vehicles), and individual. For this reason, readers should pay particular attention to the wording of statements about the data to avoid misinterpretations.

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic accidents. To help in the policy-making process, the Indiana University Center for Criminal Justice Research is collaborating with the Indiana Criminal Justice Institute to analyze 2007 vehicle crash data from the Automated Reporting Information Exchange System (ARIES), formally the Vehicle Crash Reporting System (VCRS), maintained by the Indiana State Police. Research findings will be summarized in a series of Fact Sheets on various aspects of traffic collisions, including alcohol-related crashes, light and large trucks, dangerous driving, children, motorcycles, occupant protection, and drivers. An additional publication will provide information on county and municipality data and the final publication will be the annual Indiana Crash Fact Book. These publications serve as the analytical foundation of traffic safety program planning and design in Indiana.

Indiana collision data are obtained from Indiana Crash Reports, as completed by police officers. As of January 1, 2008, approximately 95 percent of all collisions are entered electronically through the ARIES. Trends in collisions incidence as reported in these publications could incorporate the effects of changes to data elements on the Crash Report, agency-specific enforcement policy changes, re-engineered roadways, driver safety education programs and other unspecified effects. If you have questions regarding trends or unexpected results, please contact the Indiana Criminal Justice Institute, Traffic Safety Division for more information.

LIGHT TRUCKS 2007

In 2006, light trucks (pickup trucks,¹ sport utility vehicles, and vans) comprised approximately one-third of registered vehicles and 40 percent of vehicles involved in fatal collisions in the United States.² In 2007 in Indiana, 115,214 light truck drivers were involved in collisions, of which 465 were in fatal collisions. Light truck involvement in fatal collisions in Indiana increased over nine percent from 2006 to 2007. Of the 896 traffic fatalities that occurred in Indiana in 2007, 295 (33 percent) were light truck occupants.

When compared to passenger cars, light trucks are generally larger, heavier, have higher ground clearance and a greater propensity to roll over in a collision. Research has shown that these differences can be detrimental to the relative risk of injury among occupants of smaller vehicles, pedestrians, and pedalcyclists.³ This fact sheet analyzes light truck involvement in collisions in Indiana, including trends in injuries and collision circumstances, location, restraint use (including possible effects of the revised Indiana seat belt law), alcohol involvement, and county comparisons. Also discussed are results from existing research on the effects of light trucks on collision incidence and severity. Collision data are from the Indiana State Police Automated Reporting Information Exchange System (ARIES) and the Fatality Analysis Reporting System (FARS) of the National Highway Traffic Safety Administration (NHTSA), unless otherwise noted.

General Trends

In the past 10 years, the number of light trucks involved in Indiana fatal collisions increased by an average of 1.9 percent annually, whereas the number of registered light trucks in Indiana increased by only 1.1 percent (Table 1). Over the same time period, the involvement of light trucks in fatal collisions in Indiana, per 100,000 registered,

¹A pickup truck is classified as a *light truck* in Indiana when the gross vehicle weight rating is 10,000 pounds or less.

²Federal Highway Administration, *Highway Statistics*, (2006); National Highway Traffic Safety Administration, Fatality Analysis Reporting System.

³Evans, L. (2004). *Traffic safety*. Bloomfield, MI: Science Serving Society; National Center for Statistics and Analysis, National Highway Traffic Safety Administration. (March 2007). *An analysis of motor vehicle rollover crashes and injury outcomes*. (DOT HS 810 741).



Table 1: Light trucks involved in fatal collisions, by geographic region, 1997-2006

Year	Indiana light trucks		Involved, per 100,000 registered		
	Involved	Registered (millions)	Indiana	Great Lakes	USA
1997	405	1.8	22	21	27
1998	436	1.9	23	22	28
1999	447	2.0	23	22	27
2000	423	2.1	20	21	26
2001	429	2.1	20	20	25
2002	392	2.2	18	20	26
2003	439	2.2	20	20	26
2004	484	2.2	22	19	25
2005	531	2.0	26	19	24
2006	463	2.0	23	16	24
2007	465	--	--	--	--
Avg Annual Change (1997-2006)	1.9%	1.1%	1.0%	-3.0%	-1.5%

Source: Fatality Analysis Reporting System; Federal Highway Administration, *Highway Statistics*; Indiana Automated Reporting Information Exchange System, as of March 16, 2008

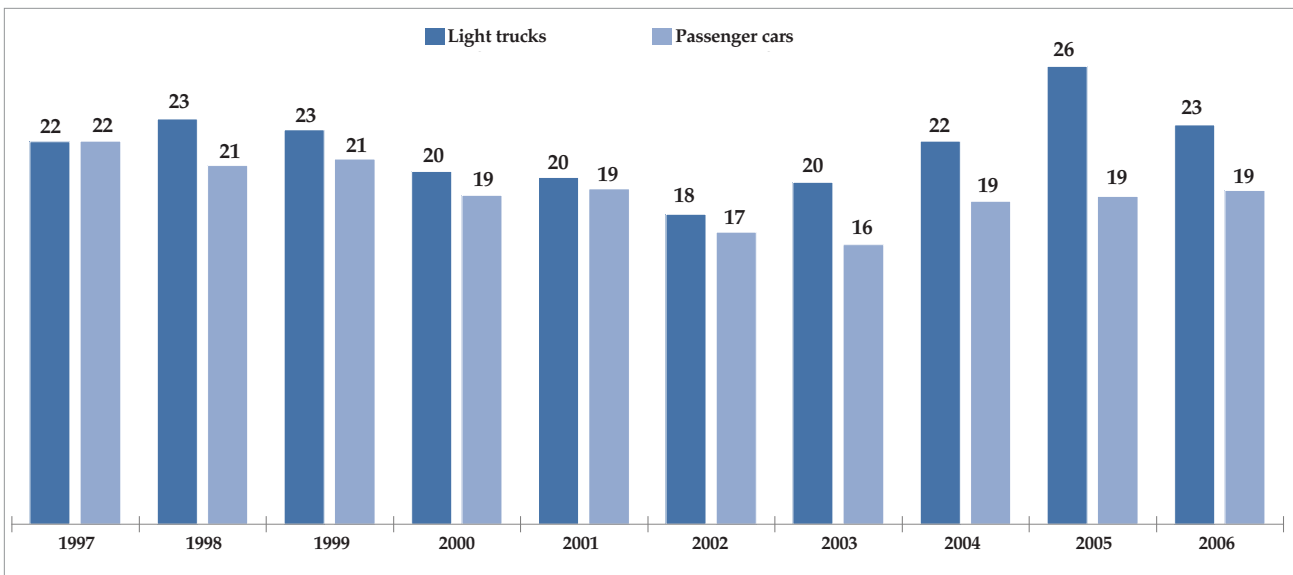
Notes: 'Great Lakes' includes Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. Indiana registered vehicle data for 2006 not reported to Federal Highway Administration; 2005 data used as a proxy. 2007 data not available for states other than Indiana

Since 1998, light truck involvement in Indiana fatal collisions, per 100,000 registered, has been greater than that of passenger cars (Figure 1). From 2001 to 2005, the disparity between light trucks and passenger cars in fatal collision involvement rates has increased, with a slight decline from 2005 to 2006. While light truck involvement has increased one percent annually on average over the past 10 years, the involvement of passenger cars in fatal collisions has decreased an average of 1.2 percent per year. Passenger car involvement has remained relatively constant since 2004, at 19 per 100,000 registered.

increased by an average of one percent annually, whereas the rates for the Great Lakes Region and the United States both decreased. In 2006, light truck involvement in Indiana fatal collisions (23 per 100,000 registered) was greater than that of the Great Lakes (16 per 100,000), but was lower than the United States (24 per 100,000).

In 2007, 115,214 light truck drivers were involved in Indiana collisions, representing a 4.4 percent increase from 2005 and an average annual decrease of 0.7 percent since 2003 (Table 2). Light truck involvement in fatal collisions increased from 426 in 2006 to 465 in 2007. Conversely, light truck drivers in injury collisions and property damage collisions decreased on average

Figure 1: Light trucks and passenger cars involved in Indiana fatal collisions, per 100,000 registered, 1997-2006



Source: Fatality Analysis Reporting System, Federal Highway Administration, *Highway Statistics*

Notes: Indiana registered vehicle data for 2006 not reported to Federal Highway Administration; 2005 data used as a proxy

Table 2: Light truck drivers involved in Indiana collisions, 2003-2007

Light truck drivers involved	2003	2004	2005	2006	2007	Average Annual Change
All collisions	119,193	122,572	122,295	110,385	115,214	-0.7%
Fatal collisions	427	451	509	426	465	2.8%
Injury collisions	24,316	26,802	25,785	23,718	22,532	-1.6%
Property damage collisions	94,450	95,319	96,001	86,241	92,217	-0.4%
Urban collisions	73,435	75,827	75,118	68,009	76,427	1.3%
Rural collisions	45,201	46,647	47,050	42,279	38,684	-3.6%
Unknown locality	557	98	127	97	103	-17.6%
Multiple vehicle collisions	96,049	99,822	98,648	88,784	91,262	-1.1%
Single vehicle collisions	23,144	22,750	23,647	21,601	23,952	1.1%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

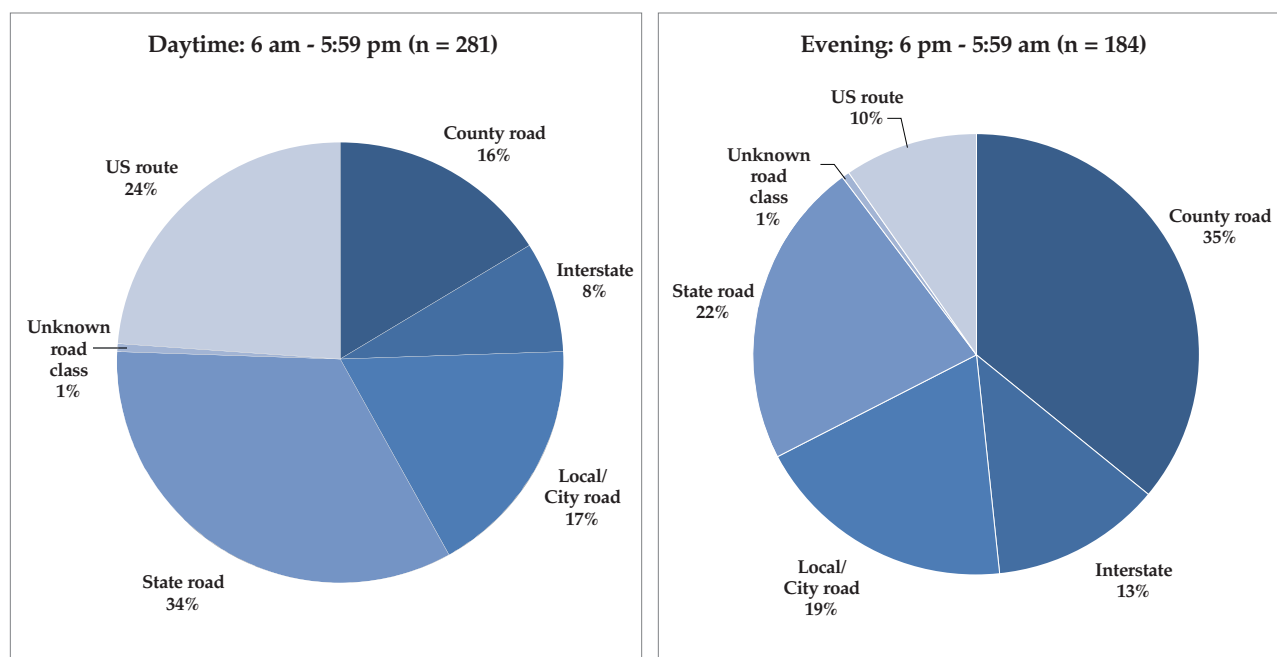
Notes: An urban locality collision is one that occurred within the incorporated limits of a city

In 2007, 115,214 light truck drivers were involved in Indiana collisions, representing a 4.4 percent increase from 2005 and an average annual decrease of 0.7 percent since 2003

over the same time period. Light truck driver involvement in rural collisions decreased an average of 3.6 percent per year from 2003 to 2007, whereas drivers in single-vehicle collisions increased on average during the same time period. Approximately one of every 247 light trucks drivers involved in a collision was involved in a fatal collision in 2007, as opposed to one of every 394 passenger car drivers (not shown in Table 2).

As shown in Figure 2, light truck drivers involved in fatal collisions were proportionally most common on state roads during the daytime (6am-5:59pm) and on county roads during the evening (6pm-5:59am). In comparing daytime and evening hour proportions, light truck involvement in fatal collisions was 11 percentage points lower on state roads, four percentage points higher on interstates, and 20 percentage points higher on county roads.

Figure 2: Light truck drivers involved in fatal collisions in Indiana, by time of day and road class, 2007



Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Table 3: Light truck occupants injured in Indiana collisions, by occupant type and injury status, 2003-2007

Injury type	2003	2004	2005	2006	2007	Average Annual Change
Fatal	228	247	301	251	295	7.8%
Drivers	168	190	224	188	214	7.2%
Injured occupants	60	57	77	63	81	10.1%
Incapacitating	1,201	1,161	1,149	1,040	1,012	-4.1%
Drivers	863	837	801	759	707	-4.9%
Injured occupants	338	324	348	281	305	-1.9%
Non-incapacitating	16,697	18,362	18,083	16,366	15,597	-1.4%
Drivers	11,664	12,872	12,805	11,588	10,846	-1.5%
Injured occupants	5,033	5,490	5,278	4,778	4,751	-1.2%
Other injury type	8,999	11,065	12,918	8,128	3,282	-14.2%
Drivers	8,679	10,800	12,622	7,999	3,221	-13.8%
Injured occupants	320	265	296	129	61	-28.7%
Total	27,125	30,835	32,451	25,785	20,186	-5.8%
% Fatal	0.8%	0.8%	0.9%	1.0%	1.5%	16.5%
% Incapacitating	4.4%	3.8%	3.5%	4.0%	5.0%	4.3%
% Non-incapacitating	61.6%	59.5%	55.7%	63.5%	77.3%	6.5%
% Other injury type	33.2%	35.9%	39.8%	31.5%	16.3%	-12.5%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: Table excludes individuals missing an injury status value

Other injury type includes not reported, refused (treatment), unknown, and invalid injury types, as entered on the Indiana Crash Report

Non-incapacitating injury category includes both non-incapacitating and possible injuries

Table 4: Injuries in two-vehicle collisions in Indiana, by occupant vehicle type, 2007

Injured vehicle occupants of a...	In a collision with a...				
	Light truck	Passenger car	Large truck	Motorcycle/moped	All other vehicle types
Light truck	5,229	6,112	364	61	269
Fatalities	32	31	35	0	3
Likelihood	0.6%	0.5%	9.6%	0.0%	1.1%
Passenger car	8,251	12,884	666	130	486
Fatalities	70	43	49	1	2
Likelihood	0.8%	0.3%	7.4%	0.8%	0.4%
Large truck	144	201	75	2	16
Fatalities	0	1	5	0	0
Likelihood	0.0%	0.5%	6.7%	0.0%	0.0%
Motorcycle/Moped	438	743	28	94	23
Fatalities	32	23	6	1	1
Likelihood	7.3%	3.1%	21.4%	1.1%	4.3%
All other vehicle types	246	350	18	2	79
Fatalities	2	0	2	0	0
Likelihood	0.8%	0.0%	11.1%	0.0%	0.0%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: Total injury counts include fatal, incapacitating, non-incapacitating, possible, not reported, refused (treatment), unknown, and invalid injury types

In Indiana collisions that occurred from 2003 to 2007, fatalities among light truck occupants increased an average of 7.8 percent per year to 295, whereas incapacitating injuries decreased an average of 4.1 percent per year to 1,012 (Table 3). Among all light truck occupant injuries in 2007, 1.5 percent were fatal, a statistic that has increased an average of 16.5 percent annually since 2003. Increases also occurred in the proportion of incapacitating and non-incapacitating injuries. These changes suggest an increase in the severity of light truck accidents over the past five years.

Risk Factors

On average, light trucks weigh 900 pounds more than passenger cars. The increase in occupant safety due to the size of light trucks has contributed to their success in the market; yet, in a collision, this increase in vehicle size is directly related to the risk of serious injury to pedestrians, pedalcyclists, and the occupants of smaller vehicles.⁴ Known as vehicle "aggressivity," the rigidity of the light truck body and higher center of gravity (i.e., higher point of impact) tends to distribute more of the force to the smaller vehicle. This collision incompatibility increases the incidence of serious upper-body injuries to occupants of the smaller vehicle and can also counteract the ameliorative effect of seat belts and airbags in smaller vehicles.⁵

⁴Jolly, B. T., Runge, J.W., & Todd, K. H. (August 1997). Vehicle weight and safety. *Annals of Emergency Medicine*, 30(2), 224-225.

⁵Gabler, H. C., & Hollowell, W. T. (1998). The aggressivity of light trucks and vans in traffic crashes. *SAE Transactions*, 107(6), 1444-1452; Roudsari, B. S., Mock, C. N., Kaufman, R., Grossman, D., Henary, B. Y., & Crandall, J. (2004). Pedestrian crashes: higher injury severity and mortality rate of light truck vehicles compared with passenger vehicles. *Injury Prevention*, 10, 154-158; Wenzel, T. P., & Ross, M. (2005). The effects of vehicle model and driver behavior on risk. *Accident Analysis & Prevention*, 37, 479-494.

Table 5: Drivers involved in Indiana collisions, by collision severity and vehicle rollover status, 2007

Drivers involved, by vehicle type	Fatal collisions		Non-fatal injury collisions		Property damage collisions		All collisions	
	Vehicle rollovers	Pct. all drivers in	Vehicle rollovers	Pct. all drivers in	Vehicle rollovers	Pct. all drivers in	Vehicle rollovers	Pct. all drivers in
Light trucks	15	3.2%	375	1.7%	469	0.5%	859	0.7%
Pickup trucks	7	3.0%	126	1.4%	204	0.5%	337	0.7%
SUVs	7	4.6%	209	2.5%	220	0.7%	436	1.0%
Vans	1	1.2%	40	0.8%	45	0.2%	86	0.3%
Passenger cars	13	2.7%	260	0.7%	242	0.2%	515	0.3%
Large trucks	3	2.1%	17	2.1%	146	1.2%	27	0.2%
Other vehicles	2	8.3%	44	4.0%	8	0.2%	193	3.6%
All vehicle types	33	3.0%	696	1.1%	865	0.3%	1,594	0.5%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: Non-fatal injury collisions includes collisions with incapacitating, non-incapacitating, or possible injuries

Indiana collision data suggest a direct relationship between the likelihood of vehicle occupant dying and the size of the other vehicle in the collision. As shown in Table 4, occupants of vehicles in a collision with a light truck generally had a higher probability of incapacitating injury or death. Specifically in 2007, 0.6 percent of injured light truck occupants were killed in a collision with another light truck, whereas 0.5 percent were killed when colliding with a passenger car, a difference in magnitude of 1.2. Moreover, 7.3 percent of motorcycle and moped riders were killed when in a collision with a light truck, compared to 0.8 percent for passenger car occupants colliding with a light truck. The implication that vehicle size is directly related to the propensity of a fatality in the other vehicle is corroborated by examining two-vehicle collisions involving large trucks.⁶ In fact, light truck occupants were 15 times more likely to have been killed when in a collision with a large truck, as opposed to another light truck. These data corroborate research findings on the effects of light trucks on small vehicle safety.

The likelihood that a light truck will overturn (i.e., rollover) in a single-vehicle crash is, in general, higher than that of passenger vehicles. The risk of rollover is most affected by driver behavior, road conditions, and the static stability factor (SSF) of the vehicle. The SSF is defined as the ratio of one-half of the vehicle track width to the center of gravity (i.e., the height) of the vehicle. The center of gravity in light trucks is generally higher than that of passenger cars, but without the corresponding increase

in track width. As a result, light trucks are less stable. A study of nationwide single-vehicle collision data from 1995 to 1998 found that, compared to passenger cars, light trucks were twice as likely to rollover.⁷

In 2007, 0.7 percent of all light truck drivers in collisions rolled over compared to 0.3 percent of passenger car drivers, a difference in magnitude of 2.5 (Table 5). In comparing rollovers as a proportion of all vehicles involved, light trucks (3.2 percent) were 1.2 times more likely to have rolled over than were passenger cars (2.7 percent) in fatal collisions and 1.5 times more likely than large trucks (2.1 percent) in fatal collisions. Within the light truck category, SUVs were more likely to have rolled over than pickup trucks and vans across all collision severity types. These types of driving actions suggest that the higher SSF puts light trucks at greater risk of rollover, as outlined in other empirical research.

Restraint Use

Restraint use among occupants of SUVs and vans has been generally consistent with that of passenger cars; however, restraint use among pickup truck occupants has been lower than other vehicle types.⁸ In examining restraint use in traffic collisions, the rate among occupants of light trucks in traffic collisions has historically been lower than that of passenger car occupants.⁹ Until recently in Indiana, pickup trucks and certain SUVs and vans registered as trucks were exempt from front-

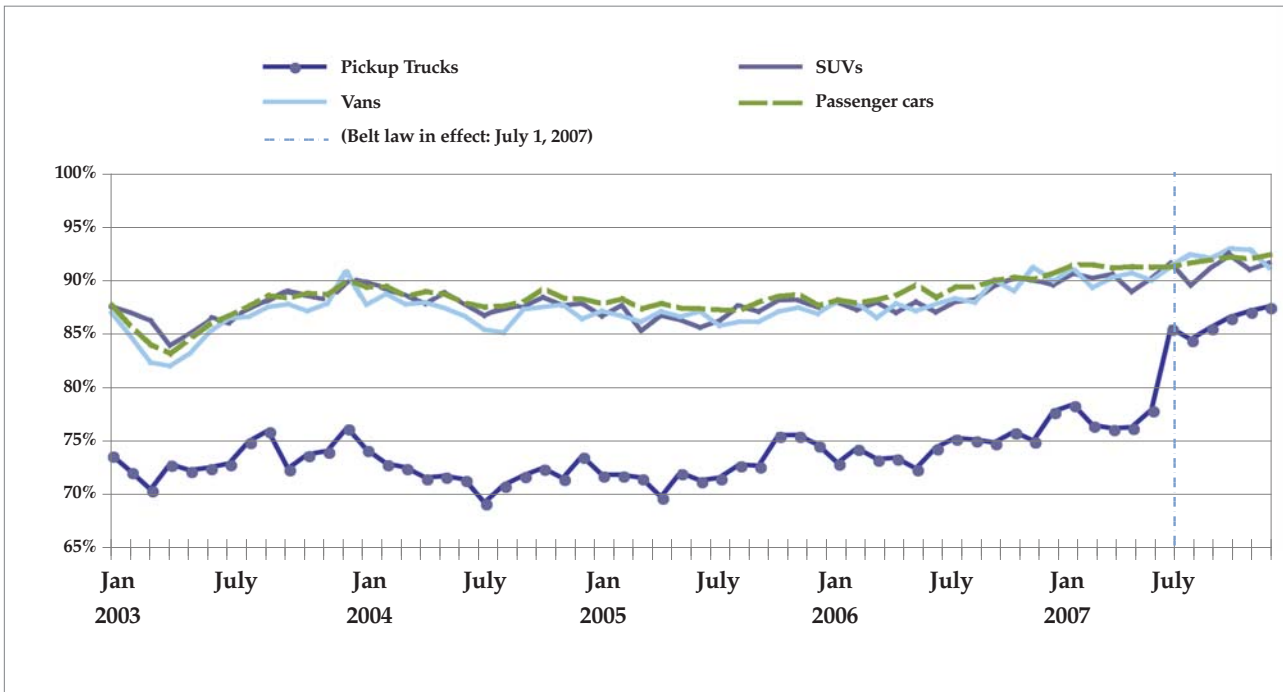
⁶A large truck is defined as one of the following types, as defined on the *Indiana Crash Report*: (1) truck (single 2 axle, 6 tires); (2) truck (single 3 or more axles); (3) truck/trailer (not semi); (4) tractor/one semi trailer; (5) tractor/double trailer; (6) tractor/triple trailer; (7) tractor (cab only, no trailer); or (8) pickup truck with gross vehicle weight rating greater than 10,000 pounds.

⁷Farmer, C. M., & Lund, A. K. (2002). Rollover risk of cars and light trucks after accounting for driver and environmental factors. *Accident Analysis & Prevention*, 34, 163-173.

⁸National Highway Traffic Safety Administration. (Sept. 2003). *Safety belt use in 2003*. (DOT HS 809 646); Bridge, C. S., Drake, M. L., Howells, J. M., Thomaz, J. E., & Zanca, R. C. (June 2003). *Indiana roadside observation survey of safety belt use and motorcycle helmet use*. Purdue University Center for the Advancement of Transportation Safety.

⁹Indiana Criminal Justice Institute (CJI), & the Center for Urban Policy and the Environment (CUPE). (2006). *Indiana traffic safety facts, 2007: Occupant protection*. Indianapolis, Indiana.

Figure 3: Restraint use rates among light truck and passenger car occupants involved in Indiana collisions, 2003-2007



Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: The comprehensive Indiana seat belt law (IC 9-19-10-2) took effect July 1, 2007

seat restraint use laws. Effective July 1, 2007, Indiana law required all occupants of pickup trucks to wear safety belts.¹⁰ Indiana law enforcement officers operate with primary enforcement power, which allows them to stop a vehicle and cite vehicle occupants for belt use violations.¹¹

As seen in Figure 3, restraint use among light truck occupants involved in collisions has increased most significantly in pickup truck occupants. After the Indiana belt law took effect on July 1, 2007, restraint use among pickup truck occupants increased nearly 10 percent from 77.5 percent in June to 85.1 percent in July. This change is in contrast to the average monthly change of 0.18 percent (January 2003 to December 2007). Restraint use among SUV and van occupants involved in collisions increased 1.6 percent and 1.4 percent from June 2007 to July 2007, respectively.

As of December 2007, Indiana collision data are inconclusive of the true effects of the seat belt law. Theoretically, one would

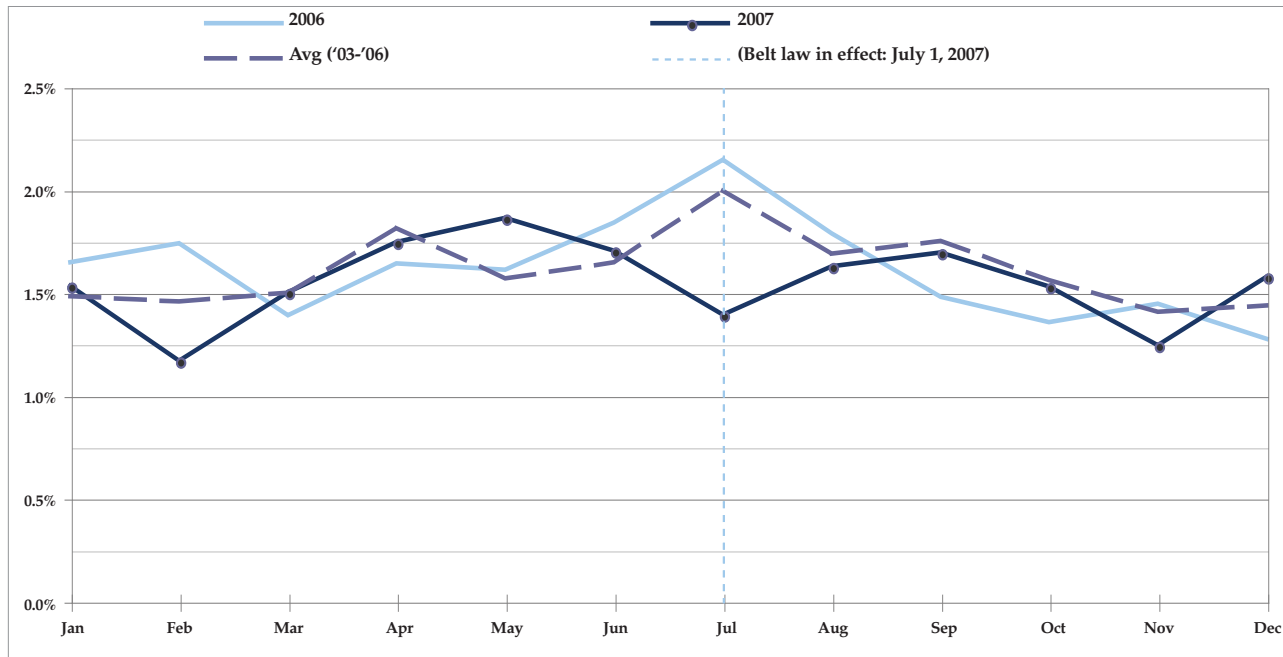
expect the passage of a more restrictive seat belt law to decrease the individuals killed or seriously injured as a proportion of all individuals involved. The incidence of fatal and incapacitating injuries (as a proportion of all light truck occupants involved) decreased in July 2007 but resumed the historical trend for the remainder of the year (Figure 4). Compared to data from 2006 and the average of 2003 through 2006, it appears that the seat belt law may have had an immediate impact (i.e., a proportional decrease in serious light truck injuries in July 2007), though this decrease could represent the effects of other factors or just historical variation. It must be emphasized that a larger times series and further investigation is necessary to reliably interpret the effects of the seat belt law.

In Indiana collisions in 2007, restraint use in light trucks was generally lower than that of other vehicle types. In particular, 53 percent of light truck occupants in fatal collisions were restrained compared to 66 percent of occupants of other vehicle

¹⁰115th Indiana General Assembly, P.L. 214-2007, Sec. 7. approved May, 2007.

¹¹CJI and CUPE, (2006).

Figure 4: Fatal and incapacitating light truck injuries, as a proportion of all light truck occupants involved in collisions, 2007



Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Table 6: Restraint use rates among vehicle occupants involved in Indiana collisions, 2007

Pct. vehicle occupants properly restrained	Light trucks				Other vehicle types	All vehicle types
	Pickup trucks	SUVs	Vans	All		
All collisions	81.4%	90.2%	90.8%	86.7%	90.3%	89.0%
Fatal	48.3%	51.5%	65.6%	53.3%	65.5%	60.1%
Incapacitating	60.0%	74.8%	80.8%	70.2%	77.8%	74.8%
Non-incapacitating	77.3%	89.8%	91.1%	85.4%	89.5%	88.0%
Property damage	83.1%	91.0%	91.1%	87.7%	91.0%	89.8%
Daytime collisions	83.4%	91.9%	91.5%	88.3%	91.7%	90.4%
Evening collisions	75.8%	85.8%	88.4%	82.2%	86.9%	85.2%
Fatal injury	28.3%	22.0%	57.9%	31.9%	51.6%	43.3%
Incapacitating injury	46.1%	61.7%	74.5%	57.4%	68.8%	64.7%
Non-incapacitating injury	70.7%	87.1%	88.7%	81.7%	87.7%	85.6%
Other injury	77.9%	87.5%	88.7%	83.9%	85.7%	85.0%
No injury	83.4%	91.3%	91.4%	88.0%	91.2%	90.0%
Drivers	81.9%	90.7%	91.2%	87.1%	90.8%	89.4%
Injured occupants	64.2%	80.8%	84.5%	77.1%	80.1%	78.9%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: Data excludes motorcyclists and moped operators

Other injury includes not reported, refused (treatment), unknown, and invalid injury types, as entered on the Indiana Crash Report

Non-incapacitating injury category includes both non-incapacitating and possible injuries

types (Table 6). Pickup truck occupants involved in fatal collisions had a restraint use rate of 48.3 percent, the lowest of all light truck types. Of those vehicle occupants that died, 32 percent in light trucks were restrained, whereas 52 percent of vehicle occupants of other vehicle types that died were restrained. Among occupants that died in Indiana collisions, 28 percent of pickup truck occupants and 22 percent of SUV occupants were restrained. Note again that an in-depth time series analysis on the effects of the Indiana seat belt law changes is necessary to gauge impacts on occupant protection.

Alcohol Involvement

Of the 5,094 light truck drivers involved in alcohol related colli-

Table 7: Light truck drivers involved in alcohol related Indiana collisions, by vehicle type and collision severity, 2003-2007

Drivers in alcohol-related collisions, by vehicle and severity	2003	2004	2005	2006	2007	Pct. all vehicle drivers	Average Annual Change
Pickup trucks	3,956	3,527	3,472	2,979	2,543	5.3%	-10.3%
Fatal	62	62	87	62	59	25.7%	1.7%
Incapacitating	178	169	120	165	142	19.7%	-2.6%
Non-incapacitating	1,150	1,130	1,076	908	819	9.8%	-8.0%
Property damage only	2,566	2,166	2,189	1,844	1,523	3.9%	-11.9%
SUVs	2,200	2,414	2,488	2,221	1,761	4.2%	-4.7%
Fatal	28	34	48	36	43	28.3%	14.3%
Incapacitating	76	93	103	108	91	15.2%	5.6%
Non-incapacitating	645	791	799	686	560	7.1%	-2.2%
Property damage only	1,451	1,496	1,538	1,391	1,067	3.2%	-6.7%
Vans	1,506	1,461	1,454	1,071	790	3.2%	-14.0%
Fatal	19	19	24	13	17	20.5%	2.8%
Incapacitating	50	58	61	26	40	12.6%	4.4%
Non-incapacitating	447	427	436	348	262	5.6%	-11.8%
Property damage only	990	957	933	684	471	2.4%	-15.9%
All light trucks	7,662	7,402	7,414	6,271	5,094	4.4%	-9.4%
Fatal	109	115	159	111	119	25.6%	5.2%
Incapacitating	304	320	284	299	273	16.7%	-2.4%
Non-incapacitating	2,242	2,348	2,311	1,942	1,641	7.9%	-7.1%
Property damage only	5,007	4,619	4,660	3,919	3,061	3.3%	-11.2%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Note: Non-incapacitating injury category includes both non-incapacitating and possible injuries

Table 8: Light truck occupants injured in Indiana collisions where the driver was drinking, by vehicle type and injury severity, 2003-2007

Light truck drivers involved	2003	2004	2005	2006	2007	Average Annual Change
Pickup trucks	1,206	1,247	1,284	1,096	828	-8.2%
Fatal	38	39	51	37	36	0.8%
Incapacitating	123	121	98	114	95	-5.2%
Non-incapacitating	802	774	789	714	639	-5.4%
Other injury type	243	313	346	231	58	-17.2%
SUVs	634	771	852	710	589	-0.4%
Fatal	17	23	30	27	32	18.6%
Incapacitating	58	67	67	71	66	3.6%
Non-incapacitating	432	485	520	440	426	0.2%
Other injury type	127	196	235	172	65	-3.7%
Vans	333	383	401	299	165	-12.6%
Fatal	7	9	9	9	10	9.9%
Incapacitating	28	28	33	10	21	14.5%
Non-incapacitating	221	227	250	193	118	-12.2%
Other injury type	77	119	109	87	16	-13.9%
All light trucks	2,173	2,401	2,537	2,105	1,582	-6.4%
Fatal	62	71	90	73	78	7.3%
Incapacitating	209	216	198	195	182	-3.3%
Non-incapacitating	1,455	1,486	1,559	1,347	1,183	-4.7%
Other injury type	447	628	690	490	139	-12.6%

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Notes: A driver is marked as 'had been drinking' when any of the following conditions are met: (1) 'Alcoholic Beverages' listed as a driver contributing factor; (2) 'Had been drinking' listed as the apparent physical condition of the driver; (3) Driver has a positive BAC test result; (4) Driver issued an OWI

Other injury type includes not reported, refused (treatment), unknown, and invalid injury types, as entered on the Indiana Crash Report

Non-incapacitating injury category includes both non-incapacitating and possible injuries

sions, 2.3 percent (119) were in fatal collisions (Table 7).¹² This statistic is nearly six times the incidence rate of light truck drivers in all collisions (alcohol- and non-alcohol-related). Since 2003, the incidence of light truck drivers in fatal collisions has increased on average, most notably in SUVs (14.3 percent per year). In 2007, over 25 percent of all fatal collisions in which light truck drivers were involved were alcohol related. The proportion of SUV drivers in alcohol-related fatal collisions (28.3 percent) was highest among all light truck vehicle types.

Table 8 lists injuries to light truck occupants with a driver who had been drinking. Among these occupants, fatalities as a proportion of all injuries in 2007 was highest among van occupants (six percent), followed by SUV occupants (5.4 percent) and pickup truck occupants (4.3 percent). Similar to the incidence of light trucks in alcohol related collisions, the incidence of fatalities has increased across each light truck type on average since 2003, especially in SUVs (18.6 percent).

Indiana county comparisons

Table 9 shows that, in 2007 in Indiana, nearly 38 percent of vehicles involved in fatal collisions were light trucks (465 of 1,234). The highest incidence of light truck involvement in fatal collisions occurred in Tipton County (4 of 5 vehicles), while

¹²A collision is identified as alcohol-related if any vehicle driver or non-motorist (pedestrian or pedalcyclist) involved in the collision had a measurable blood-alcohol content (BAC) result or appears to have been drinking, if alcoholic beverages are listed as a contributing or primary factor in the collision, or if an Operating While Intoxicated (OWI) citation is issued to a driver.

no light trucks were involved in Newton, Noble, Pike, Perry, and Union counties. Of all fatalities in Indiana in 2007, 33 percent (295 of 896) were light truck occupants. The counties with the highest raw counts of light truck occupant fatalities were in

Marion (24), Lake (21), and Elkhart (18) counties. Proportional to all fatalities, the counties with the most light truck fatalities were Blackford (two of two) and Kosciusko (8 of 10).

Table 9: Drivers and injured occupants in Indiana fatal collisions, by vehicle type and county, 2007

County	All vehicle drivers	Light truck drivers	Pct. all vehicle drivers	State rank	All fatalities	Light truck occupants	Pct. all fatalities	State rank
Adams	4	2	50.0%	15	3	2	66.7%	7
Allen	34	13	38.2%	47	21	6	28.6%	53
Bartholomew	31	12	38.7%	46	19	6	31.6%	45
Benton	4	1	25.0%	77	4	1	25.0%	59
Blackford	3	2	66.7%	5	2	2	100.0%	1
Boone	18	6	33.3%	57	12	5	41.7%	28
Brown	6	4	66.7%	5	4	2	50.0%	13
Cass	12	4	33.3%	57	7	2	28.6%	53
Clark	10	4	40.0%	38	7	1	14.3%	78
Clay	14	4	28.6%	72	8	2	25.0%	59
Clinton	5	2	40.0%	38	5	2	40.0%	30
Crawford	9	5	55.6%	14	5	3	60.0%	11
Daviess	8	3	37.5%	48	7	2	28.6%	53
De Kalb	9	2	22.2%	79	5	1	20.0%	65
Dearborn	18	4	22.2%	79	10	2	20.0%	65
Decatur	6	2	33.3%	57	6	1	16.7%	75
Delaware	33	13	39.4%	45	27	7	25.9%	58
Dubois	14	3	21.4%	81	8	0	0.0%	81
Elkhart	63	25	39.7%	44	47	18	38.3%	35
Fayette	3	1	33.3%	57	2	0	0.0%	81
Floyd	14	4	28.6%	72	10	2	20.0%	65
Fountain	3	2	66.7%	5	4	3	75.0%	3
Franklin	10	5	50.0%	15	8	3	37.5%	36
Fulton	3	2	66.7%	5	2	1	50.0%	13
Gibson	16	8	50.0%	15	9	6	66.7%	7
Grant	24	7	29.2%	70	14	4	28.6%	53
Greene	20	9	45.0%	32	15	5	33.3%	38
Hamilton	33	12	36.4%	52	22	9	40.9%	29
Hancock	20	7	35.0%	55	13	4	30.8%	47
Harrison	15	3	20.0%	83	9	0	0.0%	81
Hendricks	20	7	35.0%	55	17	5	29.4%	52
Henry	18	8	44.4%	33	10	2	20.0%	65
Howard	15	6	40.0%	38	11	2	18.2%	73
Huntington	6	2	33.3%	57	4	1	25.0%	59
Jackson	9	3	33.3%	57	6	2	33.3%	38
Jasper	12	3	25.0%	77	8	1	12.5%	79
Jay	3	2	66.7%	5	2	1	50.0%	13
Jefferson	10	2	20.0%	83	8	1	12.5%	79
Jennings	5	2	40.0%	38	5	1	20.0%	65
Johnson	22	8	36.4%	52	15	6	40.0%	30
Knox	9	7	77.8%	2	8	6	75.0%	3
Kosciusko	14	9	64.3%	11	10	8	80.0%	2
La Porte	40	13	32.5%	68	26	8	30.8%	47
Lagrange	4	2	50.0%	15	2	0	0.0%	81
Lake	64	21	32.8%	67	53	21	39.6%	34
Lawrence	14	7	50.0%	15	11	5	45.5%	26
Madison	24	7	29.2%	70	18	4	22.2%	64
Marion	113	41	36.3%	54	79	24	30.4%	49

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Table 9: Drivers and injured occupants in Indiana fatal collisions, by vehicle type and county, 2007

County	All vehicle drivers	Light truck drivers	Pct. all vehicle drivers	State rank	All fatalities	Light truck occupants	Pct. all fatalities	State rank
Marshall	8	3	37.5%	48	6	3	50.0%	13
Martin	3	1	33.3%	57	3	1	33.3%	38
Miami	11	5	45.5%	29	10	5	50.0%	13
Monroe	3	1	33.3%	57	4	2	50.0%	13
Montgomery	5	3	60.0%	12	4	2	50.0%	13
Morgan	14	6	42.9%	36	10	3	30.0%	50
Newton	9	0	0.0%	86	5	0	0.0%	81
Noble	2	0	0.0%	86	2	0	0.0%	81
Ohio	2	1	50.0%	15	2	1	50.0%	13
Orange	4	2	50.0%	15	2	1	50.0%	13
Owen	4	2	50.0%	15	4	2	50.0%	13
Parke	1	0	0.0%	86	1	0	0.0%	81
Perry	3	0	0.0%	86	2	0	0.0%	81
Pike	4	3	75.0%	3	3	1	33.3%	38
Porter	32	9	28.1%	75	23	4	17.4%	74
Posey	4	2	50.0%	15	3	1	33.3%	38
Pulaski	4	2	50.0%	15	4	2	50.0%	13
Putnam	16	7	43.8%	35	10	3	30.0%	50
Randolph	9	4	44.4%	33	6	2	33.3%	38
Ripley	7	4	57.1%	13	7	4	57.1%	12
Rush	3	2	66.7%	5	3	2	66.7%	7
Scott	5	2	40.0%	38	6	1	16.7%	75
Shelby	10	2	20.0%	83	10	2	20.0%	65
Spencer	4	3	75.0%	3	4	3	75.0%	3
St Joseph	21	10	47.6%	27	15	4	26.7%	57
Starke	8	3	37.5%	48	8	2	25.0%	59
Steuben	11	5	45.5%	29	8	4	50.0%	13
Sullivan	5	2	40.0%	38	5	2	40.0%	30
Switzerland	1	0	0.0%	86	1	0	0.0%	81
Tippecanoe	34	14	41.2%	37	22	5	22.7%	63
Tipton	5	4	80.0%	1	3	2	66.7%	7
Union	3	0	0.0%	86	3	0	0.0%	81
Vanderburgh	18	9	50.0%	15	16	5	31.3%	46
Vermillion	6	2	33.3%	57	5	2	40.0%	30
Vigo	19	5	26.3%	76	14	5	35.7%	37
Wabash	3	1	33.3%	57	2	0	0.0%	81
Warren	7	2	28.6%	72	6	2	33.3%	38
Warrick	6	3	50.0%	15	4	3	75.0%	3
Washington	11	5	45.5%	29	9	4	44.4%	27
Wayne	10	3	30.0%	69	6	1	16.7%	75
Wells	13	6	46.2%	28	12	6	50.0%	13
White	8	3	37.5%	48	5	1	20.0%	65
Whitley	14	3	21.4%	81	10	2	20.0%	65
INDIANA	1,234	465	37.7%		896	295	32.9%	

Source: Indiana Automated Reporting Information Exchange System, as of March 16, 2008

Summary

Light trucks are generally larger, heavier, have higher ground clearance and a greater propensity to roll over in a collision than do smaller vehicles. Light truck involvement in Indiana fatal collisions has increased over the past 10 years, as has involvement compared to passenger cars. The incidence of fatalities among light truck occupants has increased since 2003, whereas non-fatal injuries have decreased. Light trucks are more likely to have been involved in a fatal collision on county roads in the evening and on state roads during the daytime hours. Indiana collision data corroborate research findings that the risk of rollover is most affected by driver behavior and road conditions.

The risk of serious injury to occupants of other vehicles was greater when in a collision with a light truck than otherwise. The likelihood of death among passenger car occupants after colliding with a light truck was approximately 2.5 times that of a collision with a passenger car. Among alcohol-related collisions, SUVs have experienced the greatest average increase in fatalities and in fatal collisions.

In general, restraint use for injured occupants in Indiana collisions was generally lower in light trucks, especially in fatal collisions and in pickup trucks. Passage of the updated Indiana seat belt law, requiring occupants of all vehicles to wear a safety belt appears to have had an effect on restraint use among individuals in collisions. Further research is needed to estimate the direct impact that this change to the law has had on occupant safety.

In 2006, light trucks (pickup trucks, sport utility vehicles, and vans) comprised approximately one-third of registered vehicles and 40 percent of vehicles involved in fatal collisions in the United States. In 2007 in Indiana, 115,214 light truck drivers were involved in collisions, of which 465 were in fatal collisions.

This publication was prepared on behalf of the Indiana Criminal Justice Institute by the Indiana University Center for Criminal Justice Research (CCJR). Please direct any questions concerning data in this document to ICJI at 317-232-1233.

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An electronic copy of this document can be accessed via the CCJR website (www.criminaljustice.iupui.edu), the ICJI traffic safety website (www.in.gov/cji/traffic/), or you may contact the Center for Criminal Justice Research at 317-261-3000.

The Indiana Criminal Justice Institute (ICJI)

Guided by a Board of Trustees representing all components of Indiana's criminal and juvenile justice systems, the Indiana Criminal Justice Institute serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. ICJI develops long-range strategies for the effective administration of Indiana's criminal and juvenile justice systems and administers federal and state funds to carry out these strategies.

The Governor's Council on Impaired & Dangerous Driving

The Governor's Council on Impaired & Dangerous Driving, a division of the Indiana Criminal Justice Institute, serves as the public opinion catalyst and the implementing body for statewide action to reduce death and injury on Indiana roadways. The Council provides grant funding, training, coordination and ongoing support to state and local traffic safety advocates.

Indiana University Public Policy Institute

The Indiana University (IU) Public Policy Institute is a collaborative, multidisciplinary research institute within the Indiana University School of Public and Environmental Affairs (SPEA), Indianapolis. The Institute serves as an umbrella organization for research centers affiliated with SPEA, including the Center for Urban Policy and the Environment, the Center for Health Policy, and the Center for Criminal Justice Research. The Institute also supports the Office of International Community Development and the Indiana Advisory Commission on Intergovernmental Relations (IACIR).

The Center for Criminal Justice Research (CCJR)

The Center for Criminal Justice Research, one of three applied research centers currently affiliated with the Indiana University Public Policy Institute, works with public safety agencies and social services organizations to provide impartial applied research on criminal justice and public safety issues. CCJR provides analysis, evaluation, and assistance to criminal justice agencies; and community information and education on public safety questions. CCJR research topics include traffic safety, crime prevention, criminal justice systems, drugs and alcohol, policing, violence and victimization, and youth.

The National Highway Traffic Safety Administration (NHTSA)

NHTSA provides leadership to the motor vehicle and highway safety community through the development of innovative approaches to reducing motor vehicle crashes and injuries. The mission of NHTSA is to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

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