INDIANA TRAFFIC SAFETY FACTS

June 2007

LIGHT TRUCKS 2006

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 Urban Policy and the Environment is collaborating with the Indiana Criminal Justice Institute to analyze data from the Vehicle Crash Records System database, maintained by the Indiana State Police. Research findings will be summarized in a series of Fact Sheets on various aspects of traffic accidents, including alcohol-related crashes, light trucks, large trucks, speeding, children, motorcycles, occupant protection, and young drivers. Additional briefs will provide information on county and municipality data. Portions of the content in these reports are based on guidelines provided by the U.S. National Highway Traffic Safety Administration (NHTSA). These Fact Sheets, combined with an annual Indiana Crash Fact Book, serve as the analytical foundation of traffic safety program planning and design in Indiana.

In 2005, 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.[1] 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.[2] This fact sheet analyzes light truck involvement in collisions in Indiana from 2003 to 2006, including trends in injuries and collision circumstances, relative risk factors, restraint use, alcohol involvement, and county comparisons. Also included are results from existing research on the effects of light trucks on collision incidence and severity. Collision data are taken from the Indiana State Police Vehicle Crash Records System (VCRS) and the Fatality Analysis Reporting System (FARS) of the National Highway Traffic Safety Administration (NHTSA), unless otherwise noted.[3]

"Indiana collision data suggest that the likelihood of serious injury or death is greater when a light truck is involved."

Trends in collisions involving light trucks

From 1996 to 2005, the number of light trucks involved in Indiana fatal collisions increased by an average of 3.5 percent annually, whereas the number of registered light trucks in Indiana increased by only 1.2 percent (see Table 1). Over the same time period, the involvement of light trucks in fatal collisions in Indiana, per 100,000 registered, increased by an average of 2.5 percent annually, whereas the rates for the Great Lakes Region and the United States both decreased. In 2005, light truck involvement in

[1]Federal Highway Administration, *Highway Statistics*, 2005; National Highway Traffic Safety Administration, Fatality Analysis Reporting System, 2005.

[2]Evans, 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).

[3]VCRS is now the Automated Reporting Information Exchange System (ARIES), incorporating other types of information related to traffic collisions. Data for this fact sheet are current as of April 9, 2007.

Table 1: Fatal collisions involving light trucks, 1996-2005

	Indiana		Involved, per 100,000 registered		
Year	Light trucks involved	Light trucks registered	Indiana	Great Lakes	United States
1996	398	1,810,107	22.0	26.7	26.9
1997	405	1,832,628	22.1	21.4	27.0
1998	436	1,863,373	23.4	21.9	27.6
1999	447	1,964,131	22.8	21.7	26.9
2000	423	2,076,599	20.4	21.1	26.3
2001	429	2,141,952	20.0	19.5	25.1
2002	392	2,189,397	17.9	19.6	25.9
2003	439	2,224,095	19.7	19.7	26.0
2004	484	2,187,788	22.1	18.5	24.9
2005	530	2,008,571	26.4	18.9	24.3
	Average percent change				
1996-2005	3.5	1.2	2.5	-3.6	-1.1

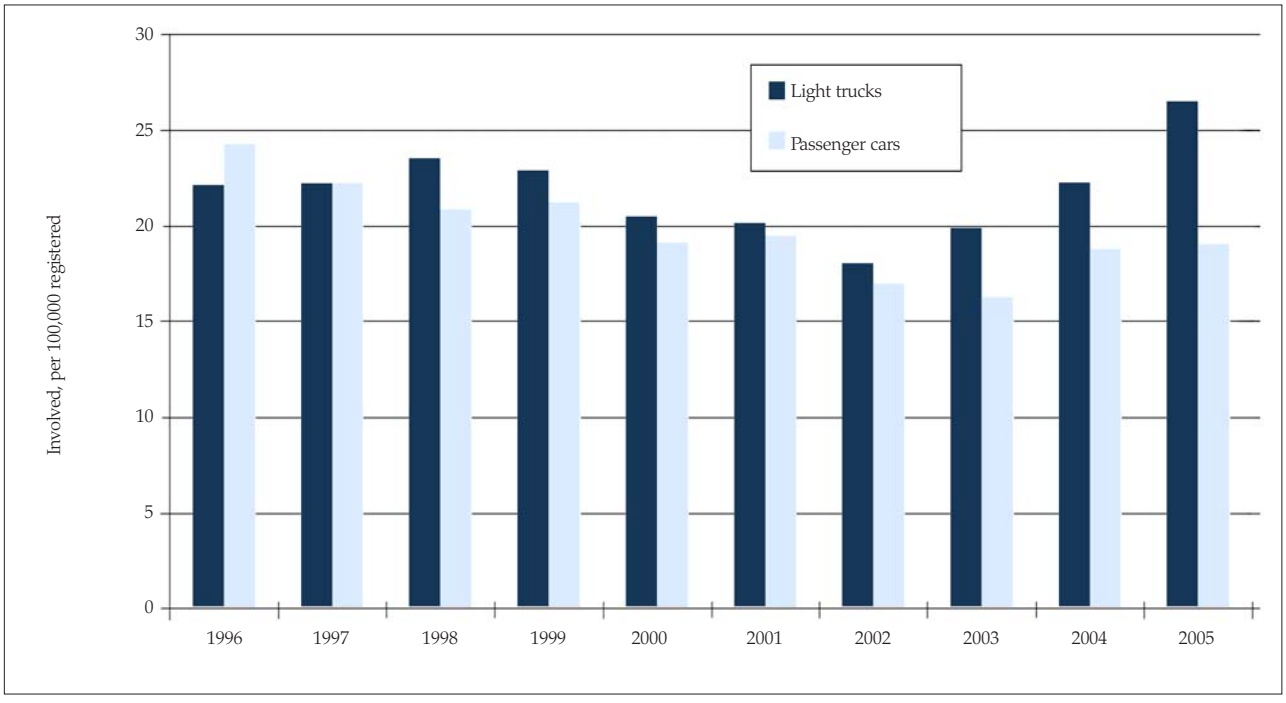
Note: 'Great Lakes' includes Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin.
Source: Fatality Analysis Reporting System; Federal Highway Administration, *Highway Statistics*

Indiana fatal collisions was greater than that of the Great Lakes and the United States by 7.5 and 2.1 per 100,000 registered, respectively.

Since 1998, light truck involvement in Indiana fatal collisions, per 100,000 registered, has been greater than that of passenger cars (see Figure 1). From 2001 to 2005, the disparity between light trucks and passenger cars in fatal collision involvement rates has increased. While light truck involvement has increased on average over the past 10 years, the involvement of passenger cars in fatal collisions has decreased 2.3 percent per year.

In 2006, 110,357 light trucks were involved in Indiana collisions, a 9.7 percent decrease from 2005 and an average annual decrease of 2.4 percent since 2003 (see Table 2). Light truck involvement in fatal collisions dropped from 509 in 2005 to 425 in 2006, as did injury collisions and collisions involving property damage only. Compared to passenger cars, a greater proportion of light trucks were involved in single-vehicle collisions (19.4 percent, versus 18.1 percent for passenger cars - not shown in Table 2). Approximately one of every 260 light trucks involved in a collision was involved in a fatal collision, as opposed to one of every 310 passenger cars (not shown in Table 2). As shown in Figure 2, fatalities among light truck occupants, per 10,000 light trucks involved in Indiana collisions, was highest on interstate roads, followed by county roads and state roads. Among vehicles

Figure 1: Vehicles involved in Indiana fatal collisions, per 100,000 registered, 1996-2005



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

Table 2: Light trucks involved in Indiana collisions, 2003-2006

				2006		2003-2006
Collision type	2003	2004	2005	Count	% total	Average % change
All	119,193	122,573	122,297	110,357		-2.4
Urban	81,118	84,138	83,205	75,587	68.5	-2.2
Rural	37,014	38,251	38,839	34,653	31.4	-2.0
Multiple vehicle	96,163	100,120	98,984	88,993	80.6	-2.4
Single vehicle	23,030	22,453	23,313	21,364	19.4	-2.3
Fatal	428	451	509	425	0.4	0.6
Injury	25,470	27,096	26,154	23,859	21.6	-2.0
Property damage only	70,830	79,083	82,104	73,466	66.6	1.7

Note 1: 'Injury' collisions are those with injuries and no fatalities.

Note 2: 'Urban' and 'Rural' collisions may not sum to the total because of an unreported locality on the collision report.

Note 3: 'Property damage only' collisions are those with no fatalities, no injuries, and at least $1,000 in estimated damage.

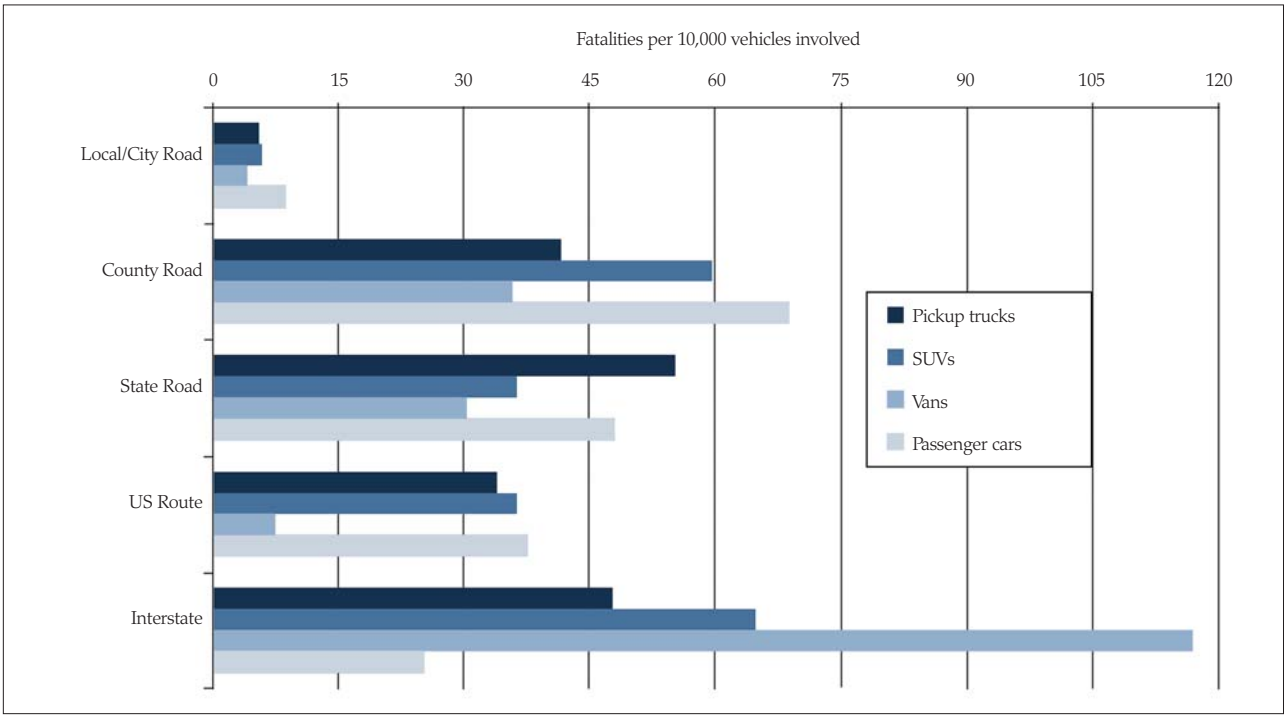
Note 4: Fatal collision counts do not equal those in Table 1 due to differences in vehicle classifications between FARS and the Indiana collision report.

Source: Indiana Vehicle Crash Records System, April 9, 2007

included in the light truck category, pick-up trucks had the highest fatal injury rate on state roads (55 per 10,000 vehicles involved), SUVs on county roads (59.4), and vans on interstate roads (116.7). The fatal injury rates on interstate roads of vehicles in the light truck category were between two and five times that of passenger cars.

In Indiana collisions that occurred between 2003 and 2006, fatalities among light truck occupants increased an average of 4.5 percent per year to 251, whereas incapacitating injuries decreased an average of 4.6 percent per year to 1,039 (see Table 3). Of the 251 light truck occupant fatalities, 75 percent (188) were driv-

Figure 2: Fatalities in Indiana collisions, per 10,000 vehicles involved, by road class, 2006



Source: Indiana Vehicle Crash Records System, April 9, 2007

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

Table 3: Injuries among light truck occupants in Indiana collisions, 2003-2006

Injury type	2003	2004	2005	2006	Average annual % change
Fatal	228	247	301	251	4.5
Drivers	168	190	224	188	5.0
Passengers	60	57	77	63	4.0
Incapacitating	1,201	1,161	1,149	1,039	-4.6
Drivers	863	837	801	758	-4.2
Passengers	338	324	348	281	-5.3
Non-incapacitating	16,697	18,362	18,083	16,364	-0.4
Drivers	11,664	12,872	12,805	11,586	0.1
Passengers	5,033	5,490	5,278	4,778	-1.4
Total injured	18,126	19,770	19,533	17,654	-0.6
% fatal	1.3	1.2	1.5	1.4	5.0
% incapacitating	6.6	5.9	5.9	5.9	-3.7
% non-incapacitating	92.1	92.9	92.6	92.7	0.2

Note: 'Non-incapacitating' injuries include counts from the 'possible' injury type on the Indiana collision report.

Source: Indiana Vehicle Crash Records System, April 9, 2007

Table 4: Occupant injuries in two-unit Indiana collisions, 2006

	Collision with...					
	Light truck		Passenger car		Non-motorist	
Injuries among...	Count	Injury likelihood	Count	Injury likelihood	Count	Injury likelihood
Light truck occupants						
Fatal	35	0.8	24	0.4	0	0.0
Incapacitating	217	4.8	239	4.4	1	12.5
Non-incapacitating	4,259	94.4	5,124	95.1	7	87.5
TOTAL	4,511	100.0	5,387	100.0	8	100.0
Passenger car occupants						
Fatal	70	0.9	46	0.4	0	0.0
Incapacitating	415	5.3	499	4.3	1	4.5
Non-incapacitating	7,306	93.8	10,953	95.3	21	95.5
TOTAL	7,791	100.0	11,498	100.0	22	100.0
Non-motorists						
Fatal	16	4.3	18	2.5	n/a	n/a
Incapacitating	61	16.3	92	13.0	n/a	n/a
Non-incapacitating	298	79.5	597	84.4	n/a	n/a
TOTAL	375	100.0	707	100.0	n/a	n/a

Note: 'Injury likelihood' is the percentage of all injury types accounted for by a particular injury type.

Source: Indiana Vehicle Crash Records System, April 9, 2007

ers. The proportion of injured light truck occupants that were killed has increased an average of five percent annually, from 228 of 18,126 occupants killed in 2003 to 251 of 17,654 killed in 2006. This change suggests an increase in the severity of light truck accidents over the past four years.

Relative risk factors in collisions involving light trucks

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]

Indiana collision data suggest that the likelihood of serious injury or death is greater when a light truck is involved. As shown in Table 4, occupants of vehicles and non-motorists (pedestrians and pedalcyclists) in a collision with a light truck have a higher probability of incapacitating injury or death. Specifically, 0.8 percent (35 of 4,511) of injured light truck occupants were killed in a collision with another light truck, twice the probability of a light truck occupant dying after col-

[5]Gabler, 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: Indiana single-vehicle rollover crashes, by vehicle type, 2006

	Light trucks		Passenger cars		Light truck risk factor
	Count	% total	Count	% total	
Total rollovers	949		684		
Alcohol-related	143	15.1	111	16.2	0.9
Speed-related	245	25.8	196	28.7	0.9
By primary factor					
Driver factors	772	81.3	606	88.6	0.9
Errant/risky driving	577	60.8	475	69.4	0.9
Impaired	109	11.5	80	11.7	1.0
Other	42	4.4	23	3.4	1.3
Distracted	28	3.0	25	3.7	0.8
Not a factor	16	1.7	3	0.4	3.8
Vehicle factors	43	4.5	20	2.9	1.5
Environment factors	134	14.1	58	8.5	1.7
By pre-rollover action					
Going straight	699	73.7	526	76.9	1.0
Avoiding object in roadway	56	5.9	43	6.3	0.9
Turning left	41	4.3	14	2.0	2.1
Driving left of center	27	2.8	20	2.9	1.0
Overtaking/passing	24	2.5	17	2.5	1.0
Turning right	16	1.7	8	1.2	1.4
Other	86	9.1	56	8.2	1.1

Note 1: 'Light truck risk factor' defined as the ratio of the proportion of the given factor for light trucks to that of passenger cars.

Note 2: 'Alcohol-related' collisions are those where any one of the following conditions are met: (1) 'Alcoholic beverages' was listed as a driver contributing circumstance; (2) driver had a positive blood alcohol content (BAC) test result, (3) as a measure of apparent physical condition, the officer determined that driver had been drinking, or (4) an Operating While Intoxicated (OWI) citation was issued to the driver

Note 3: 'Speed-related' collisions are those where speed was driver contributing circumstance or when a speeding citation was issued to the driver.

Note 4: Driver factors grouped accordingly:

'Impaired': **'Alcoholic beverages', 'Driver Asleep or Fatigued', 'Driver Illness', 'Illegal Drugs', 'Prescription Drugs'**

'Distracted': **'Cell Phone Usage', 'Driver Distracted (Explained in Narrative)', 'Other Telematics in Use', 'Passenger Distraction'**

'Errant/risky driving': **'Disregard Signal/Reg Sign', 'Failure to Yield Right of Way', 'Following Too Closely', 'Improper Lane Usage', 'Improper Passing', 'Improper Turning', 'Ran Off Road Left', 'Ran Off Road Right', 'Speed too Fast for Weather Conditions', 'Unsafe Backing', 'Unsafe Speed', 'Wrong Way on One Way"Jackknifing', 'Left of Center', 'Overcorrecting/Oversteering'**

'Other': **'Pedestrian Action', 'Violation of License Restriction', 'Other (Explained in Narrative)'**

'Not a factor': **'None'**

Source: Indiana Vehicle Crash Records System, April 9, 2007

liding with a passenger car (24 of 5,387). Similarly, the likelihood of death among passenger car occupants, pedestrians, and pedalcyclists after colliding with a light truck was approximately twice that of a collision with a passenger car. The likelihood of a vehicle occupant or non-motorist incurring an incapacitating injury in a collision with a light truck was between eight and 25 percent higher than the likelihood associated with a collision with a passenger car. These data corroborate research findings on the effects of light trucks on small vehicle and pedestrian safety.

"A study of nationwide single-vehicle collision data found that, compared to passenger cars, light trucks were twice as likely to rollover."

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 gen-

[6]Farmer, 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.

erally 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.[6]

Table 5 shows that errant or risky driving or driver impairment (i.e., alcohol use, drugs or medication, and fatigue) contributed to the majority of rollovers in Indiana in 2006. Errant or risky driving was a primary factor in 60.8 percent of light truck rollovers. Driver contributing factors were more common among passenger cars than light trucks; however, environmental factors (e.g., an animal or object in the roadway, adverse surface condition, or an obstructed view) were listed as the primary factor in 14.1 percent of light truck rollovers, compared to 8.5 percent of passenger car rollovers. Light trucks were 2.1 times more likely than passenger cars to have been making a left turn before the rollover (4.3 percent of all light trucks versus two percent of passenger cars). Approximately 15 percent of all light truck rollovers were alcohol-related; speed-related rollovers comprised 25.8 percent of all light truck rollovers.

Table 6: Percentage of injured vehicle occupants restrained in Indiana collisions, by vehicle type, 2006

Occupants injured in...	All	Light trucks			Passenger cars
		Pickup trucks	SUVs	Vans	
All collisions					
Drivers	75.8	61.4	84.1	86.1	86.7
Passengers	71.9	54.4	80.4	79.6	80.3
Fatal collisions					
Drivers	42.6	30.5	49.6	62.3	59.1
Passengers	48.8	40.0	51.4	54.7	55.1
Rollovers					
Drivers	64.3	48.8	73.7	64.1	72.7
Passengers	63.1	43.5	78.1	48.6	66.0
Daytime collisions					
Drivers	79.9	67.2	87.4	87.9	89.3
Passengers	75.0	59.0	81.6	82.4	84.1
Nighttime collisions					
Drivers	66.5	49.9	77.4	80.3	81.1
Passengers	65.9	46.7	78.3	72.5	73.8
By injury type					
Fatal					
Drivers	27.1	17.4	32.4	48.0	47.9
Passengers	19.0	19.2	10.5	27.8	50.4
Incapacitating					
Drivers	56.9	41.0	64.8	76.7	71.9
Passengers	48.4	39.0	54.9	56.7	66.7
Non-incapacitating					
Drivers	77.8	63.9	86.1	87.0	88.1
Passengers	74.0	56.3	82.5	81.2	81.7

Note 1: 'Daytime' collisions are those that occurred between 6am and 5:59pm; 'Nighttime' collisions are those that occurred between 6pm and 5:59am.

Note 2: 'Non-incapacitating' injuries defined as non-incapacitating and possible categories on the Indiana collision report.

Source: Indiana Vehicle Crash Records System, April 9, 2007

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.[7] 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.[8] Until recently, pickup trucks and certain SUVs and vans registered as trucks were exempt from front-seat restraint use laws. Effective July 1, 2007, Indiana law will require all occupants of pickup trucks to wear safety belts.[9] Indiana law

[7]National 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., & Zanke, 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.

[8]Indiana Criminal Justice Institute (CJI), & the Center for Urban Policy and the Environment (CUPE). (2006). *Indiana Traffic Safety Facts, 2007: Occupant Protection.* Indianapolis, Indiana.

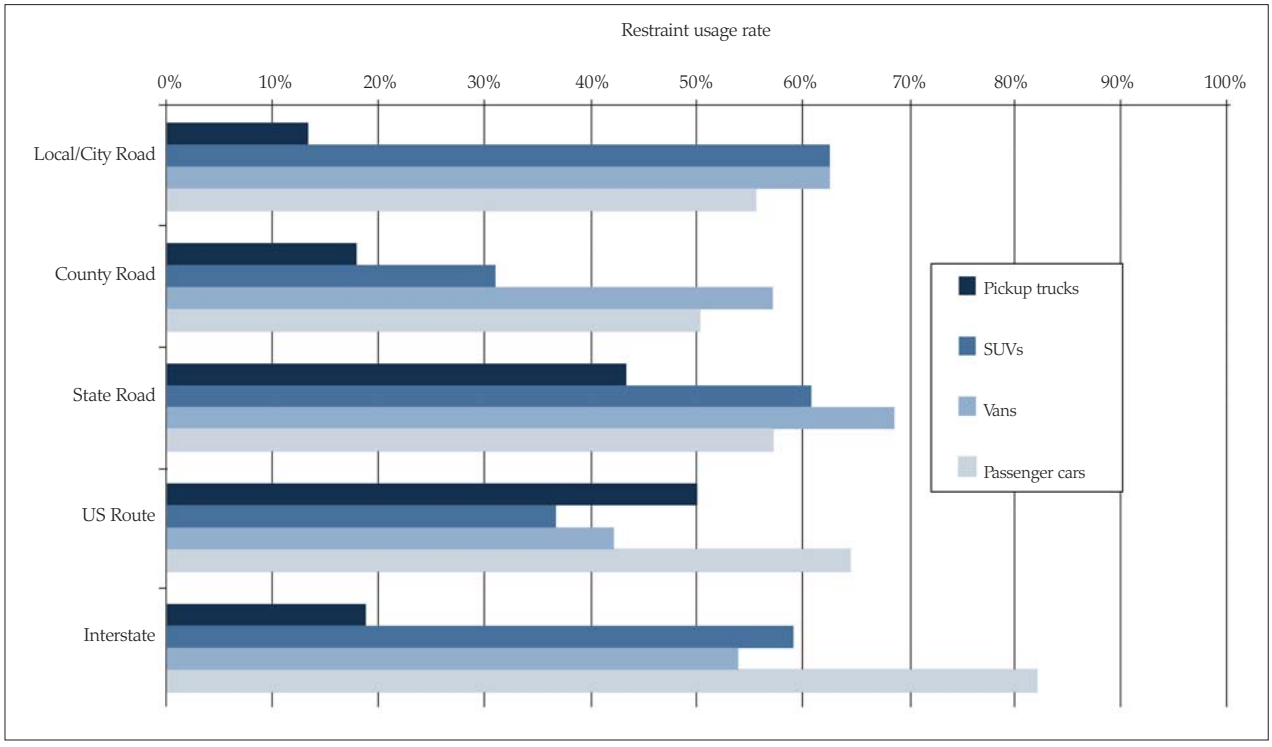
[9]Indiana House Bill 1237

enforcement officers operate with primary enforcement power, which allows them to stop a vehicle and cite vehicle occupants for belt use violations.[10] Positive changes should be expected in restraint use and lives saved due to increased restraint use among light truck occupants as a result of this change to Indiana code.

In Indiana collisions in 2006, restraint use in light trucks was generally lower that that in passenger cars. In particular, 42.6 percent of injured drivers and 48.8 percent of injured passengers of light trucks in fatal collisions were restrained (see Table 6). Usage rates in pickup trucks were lowest in fatal collisions, rollovers, and in collisions during nighttime hours. The decrease in restraint use between daytime collisions (6am-5:59pm) and nighttime collisions (6pm-5:59am) was greater among light truck drivers than that of passenger car drivers (decreases of 13.3 percent and 8.2 percent, respectively). Of those drivers that died, 27.1 percent of light truck drivers were restrained, whereas 47.9 percent of passenger car drivers that died were restrained. Among drivers that died in Indiana collisions, only 17.4 percent of pickup truck drivers and 32.4 percent of SUV drivers were restrained. These differences in restraint use were consistent with those in other injury categories. As noted above, changes to Indiana seat belt laws will likely improve restraint usage among occupants of pickup trucks and SUVs.

Illustrated in Figure 3, restraint use among occupants of light trucks in Indiana fatal collisions in 2006 was lower than that of passenger cars on US routes and interstates. Pickup truck restraint use rates in fatal collisions were lowest on local and city roads (13.3 percent), county roads (17.9) percent, and interstates (18.8 percent). Restraint usage in SUVs and vans were commensurate with passenger cars on local and city roads, but were significantly lower on US routes and interstates. These restraint rates tend to corroborate higher fatality rates by road class (see Figure 2).

Figure 3: Proportion of vehicle occupants restrained in Indiana fatal collisions, by road class, 2006



Source: Indiana Vehicle Crash Records System, April 9, 2007

[10]CJI and CUPE, 2006.

Alcohol involvement

Of the 12,532 light trucks with injured occupants involved in an Indiana collision in 2006, 12.8 percent (1,606) were alcohol-related collisions (see Table 7).[11] The driver of the light truck had been drinking in 80.8 percent (1,298) of those light trucks involved. Compared to passenger cars, the proportion of light trucks involved in alcohol-related collisions where the driver had been drinking was slightly lower in fatal collisions (55.6 percent), but was considerably higher in rollover crashes and in collisions delineated by time of day. Approximately 30 percent (75 of 251) light truck fatalities were in alcohol-related collisions. Seventy-five percent (56) of those fatalities were cases where the light truck driver had been drinking. This proportion was 9.2 percent higher than that of passenger cars involved in alcohol-related collisions. As illustrated in Figure 4, single-vehicle light truck crashes with a fatality in Indiana in 2006 were more prevalent in rural localities and had a larger share of drivers who had been drinking. In general, light trucks in fatal collisions where the driver had been drinking comprised a larger share in single-vehicle crashes.

"Of the 12,532 light trucks with injured occupants involved in an Indiana collision in 2006, 12.8 percent were alcohol-related collisions."

Table 7: Alcohol-related collisions in Indiana, by vehicle type, 2006

	Light trucks				Passenger cars			
	Total	Alcohol-related	Light truck alcohol involvement	% alcohol-related	Total	Alcohol-related	Passenger car alcohol involvement	% alcohol-related
Vehicles involved (with injury in vehicle)	12,532	1,606	1,298	80.8	23,308	2,442	1,824	74.7
Occupants injured in…								
Fatal collisions	527	135	75	55.6	713	185	106	57.3
Rollovers	546	92	79	85.9	415	72	51	70.8
Daytime collisions	12,051	570	321	56.3	21,406	942	487	51.7
Nighttime collisions	5,569	1,518	971	64.0	10,385	2,363	1,328	56.2
By injury type								
Fatal	251	75	56	74.7	403	116	76	65.5
Incapacitating	1,039	224	143	63.8	1,873	351	193	55.0
Non-incapacitating	16,364	1,796	1,099	61.2	29,581	2,852	1,555	54.5

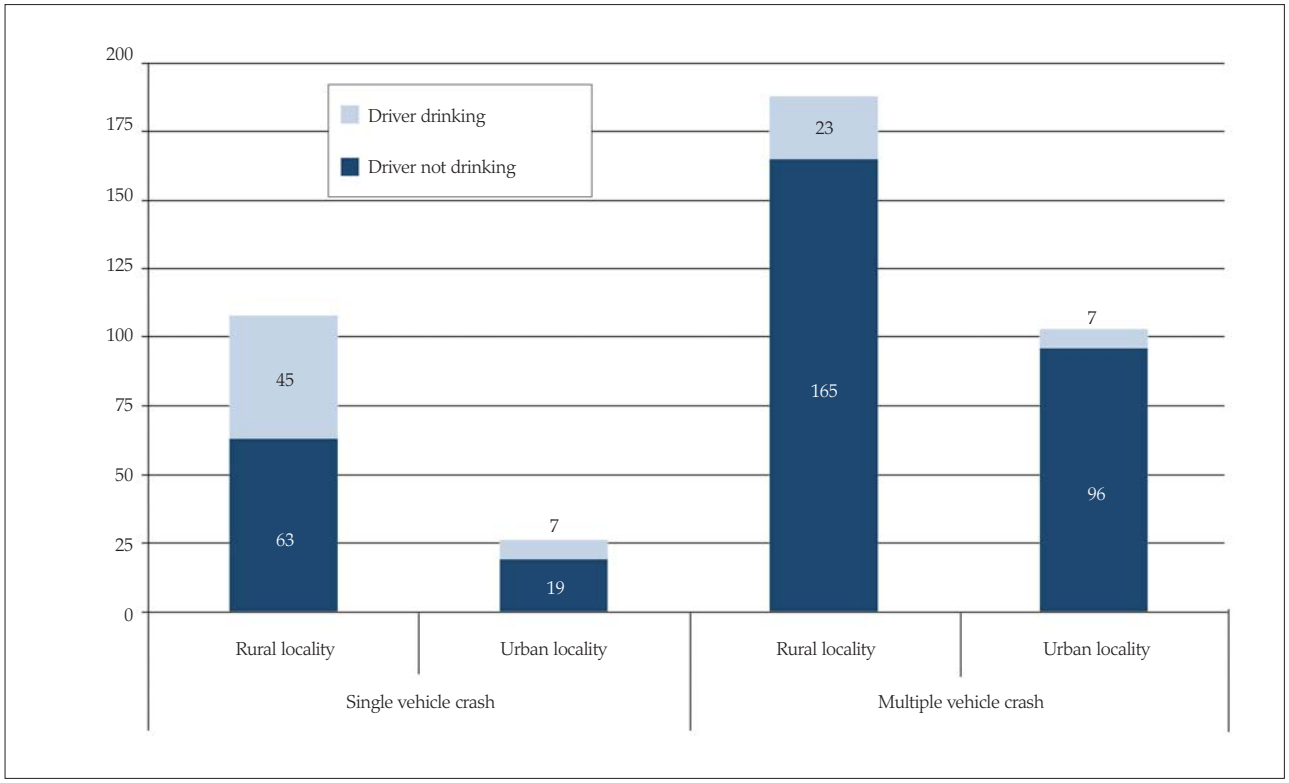
Note 1: 'Alcohol-related' collisions are those where any one of the following conditions are met: (1) 'Alcoholic beverages' was listed as a driver contributing circumstance; (2) driver had a positive blood alcohol content (BAC) test result, (3) as a measure of apparent physical condition, the officer determined that driver had been drinking, or (4) an Operating While Intoxicated (OWI) citation was issued to the driver

Note 2: 'Light truck alcohol involvement' and 'Passenger car alcohol involvement' denote vehicles involved in an alcohol-related collision that contributed to the collision being marked as 'alcohol-related' (i.e. the driver of that particular vehicle met one of the conditions in Note 1).

Source: Indiana Vehicle Crash Records System, April 9, 2007

[11]A collision is identified as 'alcohol-related' if any vehicle driver or non-motorist (pedestrian or pedalcyclist) involved the collision has 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.

Figure 4: Light trucks involved in fatal collisions, by alcohol consumption status, 2006



Source: Indiana Vehicle Crash Records System, April 9, 2007

Indiana county comparisons

In 2006 in Indiana, 37 percent (110,357 of 298,031) of vehicles involved in collisions were light trucks. On average at the county level, 40.2 percent of vehicles involved in collisions were light trucks, with a high of 49.1 percent (Greene County) and a low of 31.8 percent (Wells County). As shown in Table 8, among fatal collisions, a county average of 35.4 percent of vehicles involved were light trucks, with a high of 62.5 percent (Jennings County). Of all fatalities in Indiana in 2006, 29.7 percent (266 of 896) were light truck occupants. At the county level, the average proportion of fatalities that were light truck occupants was 30.1 percent. When ranked by the proportion of light trucks involved, Jennings, Jefferson, and Hendricks counties were in the top five in both the proportion of light trucks in fatal collisions and proportion of fatalities comprised of light truck occupants.

"Approximately one of every 260 light trucks involved in a collision was involved in a fatal collision."

Table 8: Light truck involvement in Indiana fatal collisions, by county, 2006

	Fatal collisions				Fatalities			
County	All vehicles involved	Light trucks involved	% light trucks involved	Rank	In all vehicles	In light trucks	% in light trucks	Rank
Adams	9	3	33.3	49	8	1	12.5	76
Allen	42	10	23.8	76	27	7	25.9	55
Bartholomew	16	4	25.0	69	16	4	25.0	56
Benton	6	2	33.3	49	4	1	25.0	56
Blackford	0	0	0.0	87	0	0	0.0	78
Boone	11	4	36.4	46	8	4	50.0	8
Brown	7	3	42.9	27	4	0	0.0	78
Carroll	3	1	33.3	49	2	1	50.0	8
Cass	10	4	40.0	34	8	2	25.0	56
Clark	22	9	40.9	33	15	6	40.0	25
Clay	5	0	0.0	87	4	0	0.0	78
Clinton	15	6	40.0	34	12	5	41.7	24
Crawford	3	1	33.3	49	2	0	0.0	78
Daviess	8	2	25.0	69	6	2	33.3	36
De Kalb	7	3	42.9	27	6	3	50.0	8
Dearborn	15	7	46.7	22	10	4	40.0	25
Decatur	13	7	53.8	11	9	4	44.4	22
Delaware	14	6	42.9	27	9	3	33.3	36
Dubois	6	2	33.3	49	6	3	50.0	8
Elkhart	44	17	38.6	41	35	11	31.4	47
Fayette	4	1	25.0	69	3	0	0.0	78
Floyd	11	5	45.5	25	8	4	50.0	8
Fountain	2	1	50.0	12	2	1	50.0	8
Franklin	7	3	42.9	27	3	1	33.3	36
Fulton	5	2	40.0	34	5	2	40.0	25
Gibson	13	5	38.5	42	10	3	30.0	49
Grant	18	10	55.6	9	15	9	60.0	4
Greene	10	5	50.0	12	9	5	55.6	6
Hamilton	15	0	0.0	87	12	0	0.0	78
Hancock	10	1	10.0	85	6	0	0.0	78
Harrison	8	4	50.0	12	7	3	42.9	23
Hendricks	17	10	58.8	5	13	8	61.5	3
Henry	23	10	43.5	26	14	4	28.6	50
Howard	19	11	57.9	6	13	5	38.5	35
Huntington	19	4	21.1	79	11	2	18.2	70
Jackson	12	4	33.3	49	11	3	27.3	54
Jasper	14	3	21.4	78	9	2	22.2	64
Jay	6	2	33.3	49	4	1	25.0	56
Jefferson	5	3	60.0	2	4	3	75.0	1
Jennings	8	5	62.5	1	6	4	66.7	2
Johnson	30	12	40.0	34	14	4	28.6	50
Knox	15	7	46.7	22	10	5	50.0	8
Kosciusko	18	7	38.9	39	15	6	40.0	25
La Porte	36	14	38.9	39	23	9	39.1	34
Lagrange	7	3	42.9	27	8	4	50.0	8
Lake	77	19	24.7	75	51	8	15.7	74
Lawrence	11	4	36.4	46	6	2	33.3	36
Madison	14	4	28.6	67	10	2	20.0	65
Marion	112	34	30.4	65	83	20	24.1	63
Marshall	17	4	23.5	77	12	2	16.7	71
Martin	2	1	50.0	12	2	1	50.0	8
Miami	6	3	50.0	12	5	2	40.0	25
Monroe	13	4	30.8	63	15	3	20.0	65
Montgomery	18	1	5.6	86	13	1	7.7	77
Morgan	15	3	20.0	80	12	3	25.0	56
Newton	8	2	25.0	69	8	2	25.0	56
Noble	13	5	38.5	42	9	3	33.3	36
Ohio	0	0	0.0	87	0	0	0.0	78
Orange	4	2	50.0	12	2	0	0.0	78
Owen	2	1	50.0	12	5	1	20.0	65
Parke	4	1	25.0	69	3	1	33.3	36
Perry	8	3	37.5	44	5	3	60.0	4
Pike	5	1	20.0	80	5	1	20.0	65
Porter	26	5	19.2	83	15	2	13.3	75
Posey	6	2	33.3	49	4	0	0.0	78
Pulaski	9	3	33.3	49	6	2	33.3	36
Putnam	6	1	16.7	84	5	1	20.0	65
Randolph	5	1	20.0	80	3	0	0.0	78
Ripley	6	3	50.0	12	5	2	40.0	25
Rush	2	1	50.0	12	2	1	50.0	8
Scott	2	1	50.0	12	2	1	50.0	8
Shelby	23	7	30.4	64	16	5	31.3	48
Spencer	11	6	54.5	10	9	3	33.3	36
St Joseph	28	10	35.7	48	20	5	25.0	56
Starke	14	6	42.9	27	10	5	50.0	8
Steuben	10	3	30.0	66	13	7	53.8	7
Sullivan	1	0	0.0	87	1	0	0.0	78
Switzerland	6	0	0.0	87	4	0	0.0	78
Tippecanoe	32	9	28.1	68	21	6	28.6	50
Tipton	9	3	33.3	49	6	0	0.0	78
Union	5	3	60.0	2	2	1	50.0	8
Vanderburgh	41	13	31.7	62	24	4	16.7	71
Vermillion	7	4	57.1	7	5	2	40.0	25
Vigo	16	6	37.5	44	12	2	16.7	71
Wabash	7	4	57.1	7	5	2	40.0	25
Warren	5	3	60.0	2	3	1	33.3	36
Warrick	4	1	25.0	69	3	0	0.0	78
Washington	3	1	33.3	49	2	1	50.0	8
Wayne	15	7	46.7	22	10	4	40.0	25
Wells	6	2	33.3	49	3	1	33.3	36
White	5	2	40.0	34	6	2	33.3	36
Whitley	9	3	33.3	49	7	2	28.6	50
INDIANA	1,236	425	34.4		896	266	29.7	
Mean	13	5	35.4		10	3	30.1	
Maximum	112	34	62.5		83	20	75.0	
Minimum	0	0	0		0	0	0	
Std. deviation	15.4	4.9	15.2		10.8	3.0	18.4	

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.

The risk of serious injury to occupants of other vehicles, pedestrians, and pedalcyclists was greater when in a collision with a light truck than otherwise. The likelihood of death among passenger car occupants, pedestrians, and pedalcyclists after colliding with a light truck was approximately twice that of a collision with a passenger car. Indiana collision data also corroborate research findings that the risk of rollover is most affected by driver behavior and road conditions.

In general, the risk of serious injury or fatality for light truck occupants is higher in rural localities. Whereas light truck involvement in Indiana collisions was highest on county and interstate roads, restraint use among light truck occupants was lowest on those road classes. Restraint use for injured occupants in Indiana collisions was generally lower in light trucks, especially in fatal collisions and in pickup trucks. For alcohol-related collisions, a higher proportion of light trucks involved alcohol in rural crashes and in single-vehicle crashes. The proportion of injured occupants of light trucks where alcohol was involved in rollovers was higher among light trucks.

While changes to Indiana seat belt laws should improve safety among light truck occupants, it is still important for law enforcement officers and the driving public to recognize and understand structural differences between light trucks and other vehicles. Disparities between light trucks and passenger cars in terms of vehicle size, mechanics, and the propensity to roll-over contribute to the risk of serious injury of all people involved.

INDIANA TRAFFIC SAFETY FACTS 2007

This publication was prepared on behalf of the Indiana Criminal Justice Institute by the Center for Urban Policy and the Environment. Please direct any questions concerning data in this document to ICJI at 317-232-1233.

This publication is one of a series of Fact Sheets that, along with the annual Indiana Crash Fact Book, form the analytical foundation of traffic safety program planning and design in the state of Indiana. Funding for these publications is provided by the Indiana Criminal Justice Institute and the National Highway Traffic Safety Administration.

An electronic copy of this document can be accessed via the Center website (www.urbancenter.iupui.edu/trafficsafety), the ICJI traffic safety website (www.in.gov/cji/traffic/), or you may contact the Center for Urban Policy and the Environment 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.

The Center for Urban Policy and the Environment

The Indiana University Center for Urban Policy and the Environment is devoted to supporting economic success for Indiana and a high quality of life for all Hoosiers. An applied research organization, the Center was created by the Indiana University School of Public and Environmental Affairs in 1992. The Center works in partnership with community leaders, business and civic organizations, nonprofits, and government. The Center's work is focused on urban and community development, health policy, and criminal justice research essential to developing strategies to strengthen Indiana's economy and quality of life.

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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