Traffic Safety Facts
2016 Data

April 2018

DOT HS 812 537

NHTSA

Key Findings

- In 2016 there were 23,714 passenger vehicle occupants who died in motor vehicle traffic crashes.
- Among the passenger vehicle occupants killed in 2016 in motor vehicle traffic crashes, 57 percent were passenger car occupants and 43 percent were light-truck occupants.
- Passenger vehicles made up 93 percent of registered vehicles and accounted for 90 percent of total vehicle miles traveled in 2016. There were 52,190 vehicles involved in fatal crashes in 2016, of which 78 percent (40,908) were passenger vehicles.
- Occupant fatality rates per 100,000 registered vehicles from 2015 to 2016 increased by 4 percent for passenger cars and 1 percent for light trucks. Among light-truck categories, occupant fatality rates increased by 9 percent for vans, decreased by 1 percent for SUVs, and remained roughly the same for pickup trucks.
- Eighty-one percent of passenger vehicle occupants who were totally ejected from vehicles were killed in fatal crashes in 2016.
- Among passenger vehicle occupants killed in 2016, the percentage of fatalities in rollover crashes was highest for SUVs (49%), followed by pickup trucks (43%), vans (28%), and passenger cars (22%).
- When a passenger car and a light truck hit head-on in 2016, an occupant was 3.1 times more frequently to be killed in the passenger car than in the light truck.
- Drivers of pickup trucks had the highest percentage of alcohol impairment in fatal crashes (22%) compared to other passenger vehicle drivers (21% for passenger cars, 19% for SUVs, and 12% for vans) in 2016.

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Passenger Vehicles

Passenger vehicles are defined as motor vehicles weighing less than 10,000 pounds and include passenger cars and light trucks (SUVs, pickup trucks, vans, and other light trucks).

In this fact sheet for 2016 the information on passenger vehicles is presented as follows:

This fact sheet contains information on fatal motor vehicle crashes and fatalities, based on data from the Fatality Analysis Reporting System (FARS). FARS is a census of fatal crashes in the 50 States, the District of Columbia, and Puerto Rico (Puerto Rico is not included in U.S. totals). Crash and injury statistics are based on data from the National Automotive Sampling System (NASS) General Estimates System (GES). The NASS GES is a probability-based sample of police-reported traffic crashes, from 60 locations across the country, from which estimates of national totals for injury and property-damage-only crashes are derived.

NASS GES was discontinued in 2016 and replaced with a new system called the Crash Report Sampling System (CRSS). The 2016 data year is the first data collection year of CRSS. Injury estimates for 2016 were not available at the time of publication, thus no injury estimates will be presented. For more information, read Crash Report Sampling System (CRSS) Replaces the National Automotive Sampling System (NASS) General Estimates System (GES) at the end of this publication.

Overview

In 2016:

- There were 23,714 passenger vehicle occupants who died in traffic crashes.
- Passenger vehicles made up 93 percent of registered vehicles and accounted for 90 percent of total vehicle miles traveled (VMT).
- There were 52,190 vehicles involved in fatal crashes, of which 78 percent (40,908) were passenger vehicles.

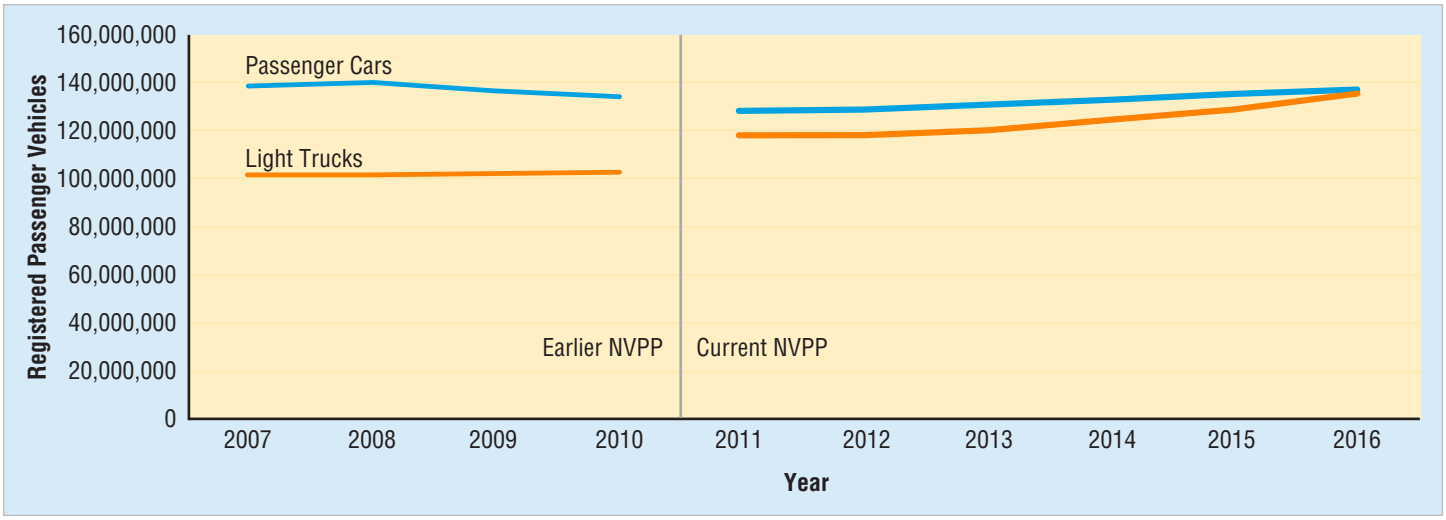
Registration Data Changes

The passenger vehicle registration data contained in this fact sheet was obtained from R. L. Polk's National Vehicle Population Profile (NVPP), a compilation of all passenger vehicles registered in compliance with State requirements.

Due to enhancement in the passenger vehicle registration data from 2011 to 2016, registration counts for these years are calculated differently from the counts provided for 2010 and earlier years (Table 1 and Appendix). Consequently, the 2011–2016 data in this fact sheet for vehicle registration and fatality rates is not comparable with the data for all prior years, which were based on Polk's earlier NVPP. To make suitable comparisons over the 10-year period, all vehicle registration and fatality rate data are presented across two sets of years, 2007–2010 and 2011–2016.

Figure 1 highlights the passenger car and light-truck registration data changes between the earlier NVPP (2007–2010) and the current NVPP (2011–2016). From 2015 to 2016, passenger car registrations increased by 1 percent and light-truck registrations increased by 4 percent. Among the light-truck categories in 2016 compared to 2015, SUV registrations increased by 6 percent, pickup truck registrations increased by 2 percent, and van registrations decreased by 1 percent.

Figure 1
Number of Passenger Car and Light-Truck Registrations, 2007–2016



Source: Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.

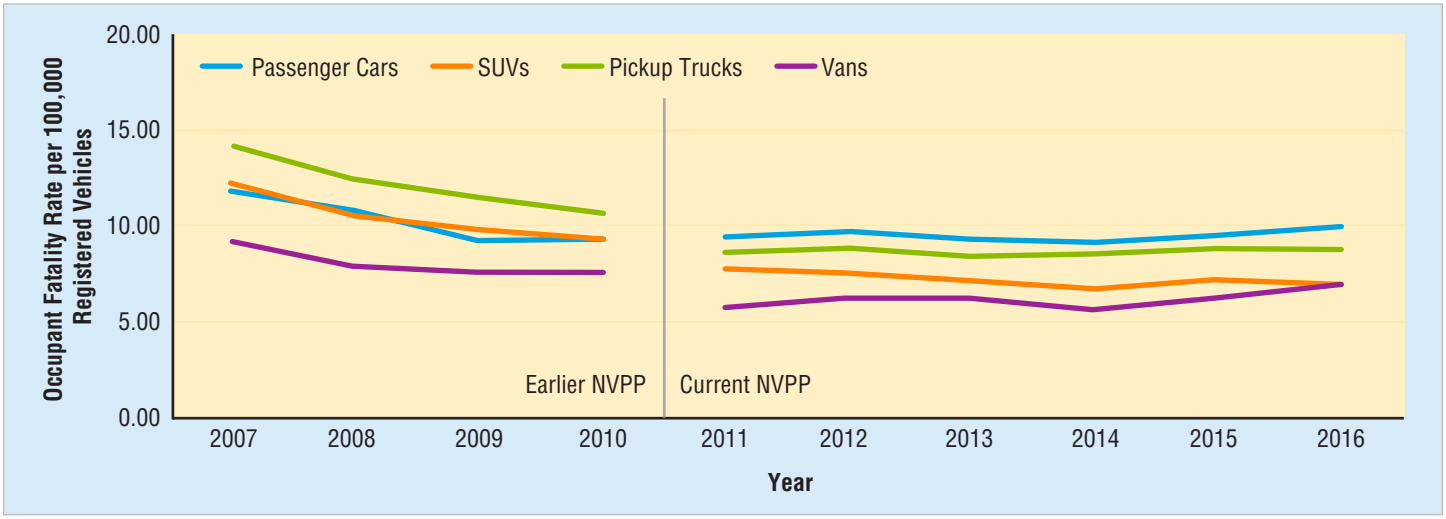
Occupant Fatalities and Occupant Fatality Rates

Figure 2 displays the occupant fatality rates per 100,000 registered vehicles for four passenger vehicle types (passenger cars, SUVs, pickup trucks, and vans) from 2007 to 2016. Overall, the occupant fatality rate trend for each vehicle type generally decreased over time with a slight increase after 2014. The data for Figure 2 is presented in Tables 1 and 2.

Occupant fatality rates per 100,000 registered vehicles from 2015 to 2016 increased by 4 percent for passenger cars and 1 percent for light trucks. Among light-truck categories, occupant fatality rates increased by 9 percent for vans, decreased by 1 percent for SUVs, and remained roughly the same for pickup trucks.

Figure 2

Passenger Vehicle Occupant Fatality Rates per 100,000 Registered Vehicles, by Vehicle Type, 2007–2016



Sources: Fatalities – FARS 2007–2015 Final File, 2016 Annual Report File (ARF); Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.

Table 1 presents the number of occupant fatalities, registered vehicles, and occupant fatality rates per 100,000 registered vehicles for total passenger vehicles as well as separately for passenger cars and light trucks from 2007 to 2016.

- The percentage of passenger car occupant fatalities remained the same from 57 percent (16,614 of 29,072) in 2007 to 57 percent (13,412 of 23,714) in 2016.
- The percentage of light-truck occupant fatalities remained the same from 43 percent (12,458 of 29,072) in 2007 to 43 percent (10,302 of 23,714) in 2016.
- Earlier NVPP:
  - The total passenger vehicle occupant fatality rate per 100,000 registered vehicles ranged from a high of 12.18 in 2007 to a low of 9.37 in 2010.
  - The passenger car occupant fatality rate ranged from a high of 12.05 in 2007 to a low of 9.23 in 2010.
  - The light-truck occupant fatality rate ranged from a high of 12.36 in 2007 to a low of 9.55 in 2010.
- Current NVPP:
  - The total passenger vehicle occupant fatality rate ranged from a high of 8.89 in 2016 to a low of 8.27 in 2014.
  - The passenger car occupant fatality rate ranged from a high of 9.94 in 2016 to a low of 9.11 in 2014.
  - The light-truck occupant fatality rate ranged from a high 7.93 in 2012 to a low of 7.37 in 2014.

Table 1

Passenger Vehicle Occupant Fatalities, Registered Vehicles, and Occupant Fatality Rates,* by Vehicle Type, 2007–2016

Year	Passenger Cars			Light Trucks**			Total Passenger Vehicles**		
	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*
2007	16,614	137,929,951	12.05	12,458	100,817,496	12.36	29,072	238,747,447	12.18
2008	14,646	139,028,041	10.53	10,816	100,862,944	10.72	25,462	239,890,985	10.61
2009	13,135	137,203,972	9.57	10,312	102,008,600	10.11	23,447	239,212,572	9.80
2010	12,491	135,310,480	9.23	9,782	102,376,147	9.55	22,273	237,686,627	9.37
2011	12,014	126,966,714	9.46	9,302	118,702,389	7.84	21,316	245,669,103	8.68
2012	12,361	127,077,676	9.73	9,418	118,690,690	7.93	21,779	245,768,366	8.86
2013	12,037	128,936,225	9.34	9,186	120,491,485	7.62	21,223	249,427,710	8.51
2014	11,947	131,138,925	9.11	9,103	123,470,278	7.37	21,050	254,609,203	8.27
2015	12,761	133,218,366	9.58	9,878	127,401,053	7.75	22,639	260,619,419	8.69
2016	13,412	134,879,198	9.94	10,302	132,000,600	7.80	23,714	266,879,798	8.89

Sources: Fatalities: FARS 2007–2015 Final File, 2016 ARF; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.
*Occupant fatality rate per 100,000 registered vehicles
**Includes other/unknown light-truck vehicle types

Table 2 presents the same information as in Table 1 for three light-truck categories (SUVs, pickup trucks, and vans) from 2007 to 2016.

- Earlier NVPP:
  - The SUV occupant fatality rate per 100,000 registered vehicles ranged from a high of 12.25 in 2007 to a low of 9.30 in 2010.
  - The pickup truck occupant fatality rate ranged from a high of 14.22 in 2007 to a low of 10.78 in 2010.
  - The van occupant fatality rate ranged from a high of 9.09 in 2007 to a low of 7.59 in 2010.
- Current NVPP:
  - The SUV occupant fatality rate ranged from a high of 7.74 in 2011 to a low of 6.75 in 2014.
  - The pickup truck occupant fatality rate ranged from a high of 8.96 in 2012 and 2015 to a low of 8.58 in 2013.
  - The van occupant fatality rate ranged from a high of 6.92 in 2016 to a low of 5.66 in 2014.

Table 2

Light-Truck Occupant Fatalities, Registered Vehicles, and Occupant Fatality Rates,* by Vehicle Type, 2007–2016**

Year	SUVs			Pickup Trucks			Vans		
	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*	Occupant Fatalities	Registered Vehicles	Occupant Fatality Rate*
2007	4,834	39,463,148	12.25	5,847	41,121,470	14.22	1,764	19,406,561	9.09
2008	4,214	40,529,579	10.40	5,097	40,782,963	12.50	1,492	18,784,452	7.94
2009	4,104	41,383,289	9.92	4,801	41,676,351	11.52	1,396	18,222,255	7.66
2010	3,942	42,378,757	9.30	4,486	41,596,353	10.78	1,346	17,732,967	7.59
2011	3,884	50,161,565	7.74	4,270	48,912,291	8.73	1,128	19,592,314	5.76
2012	3,885	51,305,806	7.57	4,343	48,465,436	8.96	1,167	18,886,646	6.18
2013	3,831	53,477,838	7.16	4,175	48,644,891	8.58	1,142	18,339,481	6.23
2014	3,800	56,277,894	6.75	4,249	49,134,966	8.65	1,021	18,030,322	5.66
2015	4,213	59,662,508	7.06	4,470	49,911,616	8.96	1,128	17,801,045	6.34
2016	4,432	63,441,519	6.99	4,538	50,862,931	8.92	1,223	17,671,592	6.92

Sources: Fatalities: FARS 2007–2015 Final File, 2016 ARF; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.
*Occupant fatality rate per 100,000 registered vehicles
**Excludes other/unknown light-truck vehicle types

Occupants Injured and Occupant Injury Rates

Table 3 shows the estimated number of occupants injured, number of registered vehicles, and occupant injury rates per 100,000 registered vehicles for total passenger vehicles as well as separately for passenger cars and light trucks from 2007 to 2015 (2016 data is not yet available).

- The percentage of injured passenger car occupants increased from 62 percent (1,379,000 of 2,221,000) in 2007 to 63 percent (1,378,000 of 2,181,000) in 2015.
- The percentage of injured light truck occupants decreased from 38 percent (841,000 of 2,221,000) in 2007 to 37 percent (803,000 of 2,181,000) in 2015.
- Earlier NVPP:
  - The total passenger vehicle occupant injury rate per 100,000 registered vehicles ranged from a high of 930 in 2007 to a low of 826 in 2009.
  - The passenger car occupant injury rate ranged from a high of 1,000 in 2007 to a low of 887 in 2009.
  - The light-truck occupant injury rate ranged from a high of 835 in 2007 to a low of 716 in 2010.
- Current NVPP:
  - The total passenger vehicle occupant injury rate ranged from a high 851 in 2012 to a low of 801 in 2011.
  - The passenger car occupant injury rate ranged from a high of 1,045 in 2012 to a low of 976 in 2011.
  - The light-truck occupant injury rate ranged from a high of 642 in 2012 to a low of 614 in 2010.

Table 3

Passenger Vehicle Occupants Injured, Registered Vehicles, and Occupant Injury Rates,* by Vehicle Type, 2007–2016

	Passenger Cars			Light Trucks**			Total Passenger Vehicles**		
Year	Occupants Injured	Registered Vehicles	Occupant Injury Rate*	Occupants Injured	Registered Vehicles	Occupant Injury Rate*	Occupants Injured	Registered Vehicles	Occupant Injury Rate*
2007	1,379,000	137,929,951	1,000	841,000	100,817,496	835	2,221,000	238,747,447	930
2008	1,304,000	139,028,041	938	768,000	100,862,944	762	2,072,000	239,890,985	864
2009	1,216,000	137,203,972	887	759,000	102,008,600	744	1,976,000	239,212,572	826
2010	1,253,000	135,310,480	926	733,000	102,376,147	716	1,986,000	237,686,627	835
2011	1,240,000	126,966,714	976	728,000	118,702,389	614	1,968,000	245,669,103	801
2012	1,328,000	127,077,676	1,045	762,000	118,690,690	642	2,091,000	245,768,366	851
2013	1,296,000	128,936,225	1,005	750,000	120,491,485	622	2,046,000	249,427,710	820
2014	1,292,000	131,138,925	985	782,000	123,470,278	633	2,074,000	254,609,203	815
2015	1,378,000	133,218,366	1,035	803,000	127,401,053	630	2,181,000	260,619,419	837
2016	N/A	134,879,198	N/A	N/A	132,000,600	N/A	N/A	266,879,798	N/A

Sources: Injured – NASS GES 2007–2015; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.

Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.

*Occupant injury rate per 100,000 registered vehicles

**Includes other/unknown light-truck vehicle types.

N/A – 2016 data not yet available.

Table 4 presents the same information as in Table 3 for three light-truck categories (SUVs, pickup trucks, and vans) from 2007 to 2015 (2016 data is not yet available).

- Earlier NVPP:
  - The SUV occupant injury rate per 100,000 registered vehicles ranged from a high of 962 in 2007 to a low of 823 in 2009.
  - The pickup truck occupant injury rate ranged from a high of 660 in 2007 to a low of 524 in 2010.
  - The van occupant injury rate ranged from a high of 904 in 2007 to a low of 761 in 2010.
- Current NVPP:
  - The SUV occupant injury rate ranged from a high of 753 in 2012 to a low of 703 in 2011.
  - The pickup truck occupant injury rate ranged from a high of 497 in 2012 to a low of 462 in 2013.
  - The van occupant injury rate ranged from a high of 763 in 2013 to a low of 683 in 2015.

Table 4

Light-Truck Occupants Injured, Registered Vehicles, and Occupant Injury Rates,* by Vehicle Type, 2007–2016**

Year	SUVs			Pickup Trucks			Vans		
	Occupants Injured	Registered Vehicles	Occupant Injury Rate*	Occupants Injured	Registered Vehicles	Occupant Injury Rate*	Occupants Injured	Registered Vehicles	Occupant Injury Rate*
2007	380,000	39,463,148	962	271,000	41,121,470	660	175,000	19,406,561	904
2008	361,000	40,529,579	891	250,000	40,782,963	612	145,000	18,784,452	770
2009	341,000	41,383,289	823	238,000	41,676,351	570	139,000	18,222,255	766
2010	360,000	42,378,757	851	218,000	41,596,353	524	135,000	17,732,967	761
2011	353,000	50,161,565	703	237,000	48,912,291	484	138,000	19,592,314	705
2012	386,000	51,305,806	753	241,000	48,465,436	497	135,000	18,886,646	713
2013	383,000	53,477,838	716	225,000	48,644,891	462	140,000	18,339,481	763
2014	410,000	56,277,894	729	242,000	49,134,966	492	129,000	18,030,322	715
2015	436,000	59,662,508	731	242,000	49,911,616	484	122,000	17,801,045	683
2016	N/A	63,441,519	N/A	N/A	50,862,931	N/A	N/A	17,671,592	N/A

Sources: Injured – NASS GES 2007–2015; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.

Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.

*Occupant injury rate per 100,000 registered vehicles

**Excludes other/unknown light-truck vehicle types

N/A – 2016 data not yet available.

Restraint Use

The 2016 National Occupant Protection Use Survey (NOPUS) observed that the seat belt use rate among front seat occupants was 90.1 percent for passenger vehicles, 91.1 percent for passenger cars, 92.3 percent for vans and SUVs, and 83.2 percent for pickup trucks.[1]

Lap/shoulder seat belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent. For light-truck occupants, seat belts reduce the risk of fatal injury by 60 percent and moderate-to-critical injury by 65 percent.[2] Seat belts saved an estimated 14,668 lives of passenger vehicle occupants 5 and older in 2016.[3]

In fatal crashes in 2016 there were 23,714 passenger vehicle occupants who were killed. Rural areas accounted for 58 percent of these occupant fatalities. For these passenger vehicle occupant fatalities occurring in rural areas, 49 percent were unrestrained (based on known restraint use) compared to 46 percent in urban areas (based on known restraint use). Sixty-two percent of rural pickup truck occupants killed were unrestrained (based on known restraint use)—the highest percentage of any passenger vehicle occupants killed among rural and urban areas.

Figure 3 displays the gradual decline of the percentage of passenger vehicle occupants killed who were unrestrained (based on known restraint use) by time of day:

- Daytime (6 a.m. to 5:59 p.m.) declined from 45 percent in 2007 to 41 percent in 2016.
- Nighttime (6 p.m. to 5:59 a.m.) declined from 63 percent in 2007 to 56 percent in 2016.

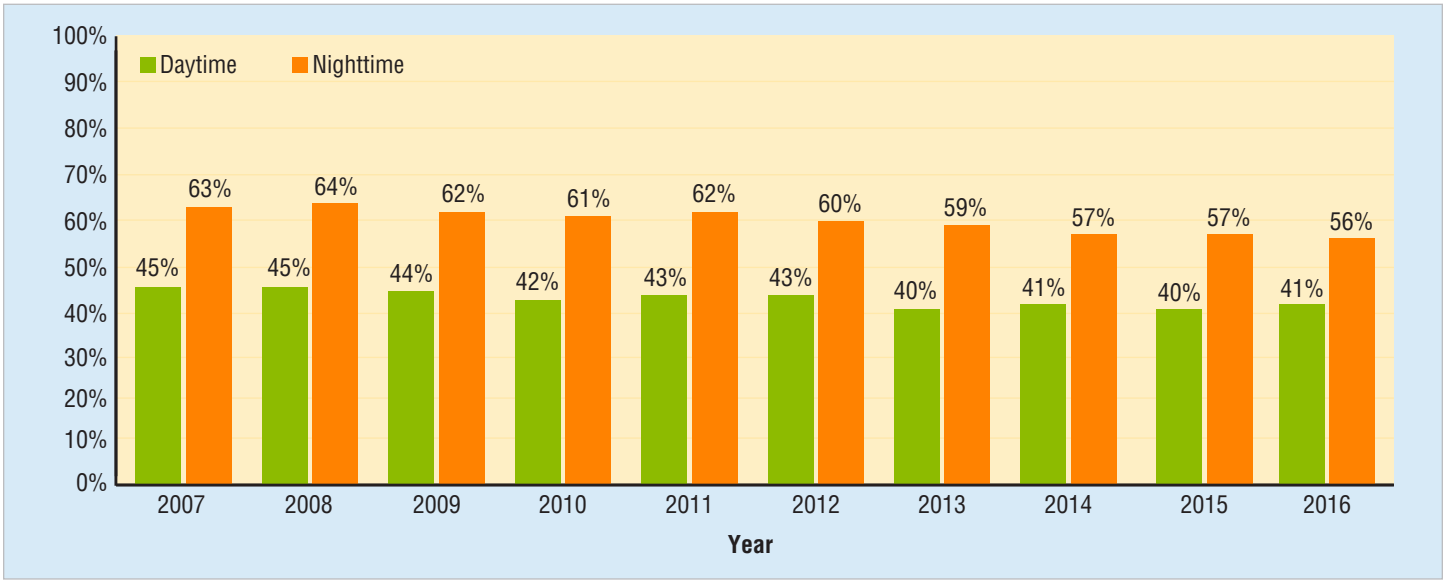
[1] Pickrell, T. M., & Li, R. (2016, November). *Seat belt use in 2016 – Overall results* (Traffic Safety Facts Research Note. Report No. DOT HS 812 351). Washington, DC: National Highway Traffic Safety Administration. Available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812341

[2] Kahane, C. J. (2015, January). *Lives saved by vehicle safety technologies and associated Federal Motor Vehicle Safety Standards, 1960 to 2012 – Passenger cars and LTVs – With reviews of 26 FMVSS and the effectiveness of their associated safety technologies in reducing fatalities, injuries, and crashes* (Report No. DOT HS 812 069). Washington, DC: National Highway Traffic Safety Administration. Available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812069

[3] National Center for Statistics and Analysis. (2017, October). *Lives saved in 2016 by restraint use and minimum drinking-age-laws* (Traffic Safety Facts Crash•Stats. Report No. DOT HS 812 454). Washington, DC: National Highway Traffic Safety Administration. Available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812454

Figure 3

Percentage of Unrestrained* Passenger Vehicle Occupant Fatalities, by Time of Day, 2007–2016**



Source: FARS 2007–2015 Final File, 2016 ARF
*Based on known restraint use.
**Daytime – 6 a.m. to 5:59 p.m.; Nighttime – 6 p.m. to 5:59 a.m.

Table 5 presents the percentages of unrestrained (based on known restraint use) passenger vehicle occupant fatalities, by vehicle type and time of day, from 2007 to 2016. Van occupant fatalities had the lowest percentage (36% daytime and 48% nighttime) of unrestrained occupant fatalities in 2016 (based on known restraint use), while pickup truck occupant fatalities had the highest percentage (54% daytime and 69% nighttime).

Table 5

Percentage of Unrestrained* Passenger Vehicle Occupant Fatalities, by Vehicle Type and Time of Day, 2007–2016**

Time of Day and Year		Passenger Vehicle Type					
			Light Trucks				Total Passenger Vehicles***
		Passenger Cars	SUVs	Pickup Trucks	Vans	Total***	
Daytime	2007	37%	53%	59%	45%	54%	45%
	2008	38%	53%	59%	44%	54%	45%
	2009	37%	52%	59%	42%	53%	44%
	2010	35%	51%	56%	44%	52%	42%
	2011	36%	51%	55%	43%	52%	43%
	2012	36%	52%	57%	37%	52%	43%
	2013	34%	47%	52%	42%	48%	40%
	2014	34%	48%	53%	33%	49%	41%
	2015	34%	46%	52%	39%	48%	40%
	2016	34%	47%	54%	36%	48%	41%
Nighttime	2007	56%	71%	76%	62%	72%	63%
	2008	58%	70%	76%	65%	72%	64%
	2009	55%	69%	76%	57%	71%	62%
	2010	55%	68%	74%	59%	70%	61%
	2011	56%	66%	75%	57%	69%	62%
	2012	54%	68%	72%	54%	68%	60%
	2013	52%	66%	73%	53%	68%	59%
	2014	51%	63%	71%	50%	66%	57%
	2015	51%	64%	69%	49%	65%	57%
	2016	50%	63%	69%	48%	64%	56%

Source: FARS 2007–2015 Final File, 2016 ARF
*Based on known restraint use.
**Daytime – 6 a.m. to 5:59 p.m.; Nighttime – 6 p.m. to 5:59 a.m.
***Includes occupants of other/unknown light-truck vehicle types

Ejection

When totally ejected, the occupant's body was entirely outside the vehicle but may be in contact with the vehicle; partially ejected means that part of the occupant's body was outside the vehicle at some time during the crash sequence. Eighty-one percent of passenger vehicle occupants (4,258 of 5,256) who were totally ejected from vehicles were killed in fatal crashes in 2016. Ejection from the vehicle is one of the most injurious events that can happen to a person in a crash. Seat belts can be effective in preventing total ejections.

Table 6 presents the ejection status of passenger vehicle occupants involved in fatal crashes in 2016. In passenger cars, 13 percent of occupants killed were totally ejected from the vehicle, while 25 percent of those killed in light trucks were totally ejected.

Table 6
Passenger Vehicle Occupants in Fatal Crashes, by Vehicle Type and Ejection Status, 2016

Vehicle Type		Ejection Status										Total	
		Not Ejected		Totally Ejected		Partially Ejected		Ejected-Unknown		Unknown			
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Passenger Cars	Killed	11,129	83%	1,680	13%	513	4%	29	<0.5%	61	<0.5%	13,412	100%
	Survived	17,468	97%	342	2%	62	<0.5%	5	<0.5%	205	1%	18,082	100%
	Total	28,597	91%	2,022	6%	575	2%	34	<0.5%	266	1%	31,494	100%
Light Trucks*	Killed	6,984	68%	2,578	25%	635	6%	41	<0.5%	64	1%	10,302	100%
	Survived	21,238	95%	656	3%	94	<0.5%	11	<0.5%	248	1%	22,247	100%
	Total	28,222	87%	3,234	10%	729	2%	52	<0.5%	312	1%	32,549	100%
Passenger Vehicles*	Killed	18,113	76%	4,258	18%	1,148	5%	70	<0.5%	125	1%	23,714	100%
	Survived	38,706	96%	998	2%	156	<0.5%	16	<0.5%	453	1%	40,329	100%
	Total	56,819	89%	5,256	8%	1,304	2%	86	<0.5%	578	1%	64,043	100%

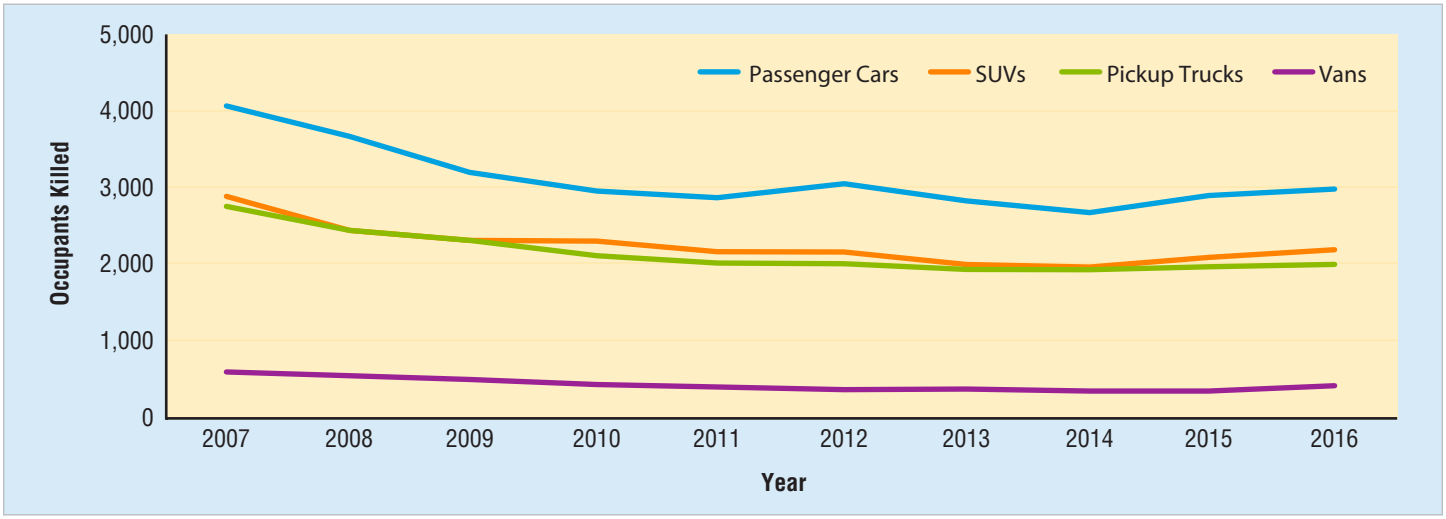
Source: FARS 2016 ARF
*Includes SUVs, pickup trucks, vans, and other/unknown light-truck vehicle types.

Rollover Crashes

The rollover crash is one of the most deadly forms of crashes among passenger vehicles, accounting for nearly one-third (31%) of all occupant fatalities in 2016. Among passenger vehicle occupants killed in 2016, the percentage of fatalities in rollover crashes was highest for SUVs (49%), followed by pickup trucks (43%), vans (28%), and passenger cars (22%).

Overall, each of the four passenger vehicle categories in Figure 4 generally showed a decreasing trend in the number of occupants killed in rollover crashes from 2007 to 2016 with a slight increase from 2014 to 2016. The data used in Figure 4 is shown in Table 7.

Figure 4
Passenger Vehicle Occupants Killed in Rollover Crashes, by Vehicle Type, 2007–2016



Source: FARS 2007–2015 Final File, 2016 ARF

Table 7 presents the number of passenger vehicle occupants killed in rollover crashes by vehicle type from 2007 to 2016. In the past 10 years, the percentages of rollover occupant fatalities for:

- Passenger cars decreased by 27 percent from 4,055 in 2007 to 2,950 in 2016,
- SUVs decreased by 25 percent from 2,861 in 2007 to 2,151 in 2016,
- Pickup trucks decreased by 29 percent from 2,748 in 2007 to 1,963 in 2016, and
- Vans decreased by 40 percent from 572 in 2007 to 343 in 2016.

Table 7
Passenger Vehicle Occupant Fatalities in Rollover Crashes, by Vehicle Type, 2007–2016

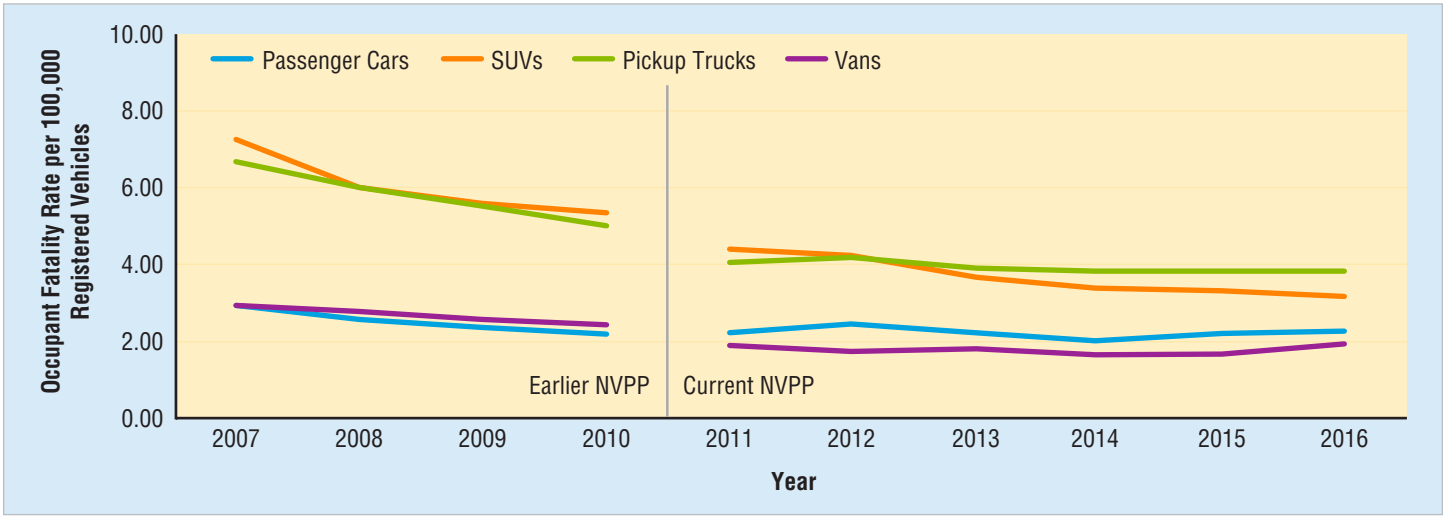
Year	Passenger Vehicle Type					Total Passenger Vehicles*
	Passenger Cars	Light Trucks				
		SUVs	Pickup Trucks	Vans	Total*	
2007	4,055	2,861	2,748	572	6,185	10,240
2008	3,653	2,435	2,435	514	5,390	9,043
2009	3,230	2,303	2,295	457	5,061	8,291
2010	2,933	2,264	2,098	413	4,777	7,710
2011	2,849	2,172	1,993	375	4,551	7,400
2012	3,025	2,161	2,012	326	4,502	7,527
2013	2,823	1,966	1,903	326	4,207	7,030
2014	2,663	1,965	1,907	305	4,186	6,849
2015	2,878	2,073	1,942	308	4,346	7,224
2016	2,950	2,151	1,963	343	4,511	7,461

Source: FARS 2007–2015 Final File, 2016 ARF
*Includes occupants of other/unknown light-truck vehicle types

Among passenger vehicles involved in rural fatal crashes in 2016, SUVs experienced the highest rollover percentage (35%) compared to 29 percent for pickup trucks, 22 percent for vans, and 20 percent for passenger cars. The rollover percentages for passenger vehicles in urban areas were much lower: 17 percent for SUVs, 14 percent for pickup trucks, 8 percent for vans, and 9 percent for passenger cars.

Figure 5 displays the occupant fatality rates per 100,000 registered vehicles by vehicle type from 2007 to 2016. The data for Figure 5 is presented in Table 8.

Figure 5
Passenger Vehicle Occupant Fatality Rates per 100,000 Registered Vehicles in Rollover Crashes, by Vehicle Type, 2007–2016



Sources: Fatalities – FARS 2007–2015 Final File, 2016 ARF; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.

Table 8 presents the passenger vehicle occupant fatality rates per 100,000 registered vehicles in rollover crashes by vehicle type from 2007 to 2016.

- The occupant fatality rates per 100,000 registered vehicles in rollover crashes in earlier NVPP for:
  - Passenger cars decreased by 26 percent from 2.94 in 2007 to 2.17 in 2010,
  - SUVs decreased by 26 percent from 7.25 in 2007 to 5.34 in 2010,
  - Pickup trucks decreased by 25 percent from 6.68 in 2007 to 5.04 in 2010, and
  - Vans decreased by 21 percent from 2.95 in 2007 to 2.33 in 2010.
- The occupant fatality rates in rollover crashes in current NVPP for:
  - Passenger cars decreased by 2 percent from 2.24 in 2011 to 2.19 in 2016,
  - SUVs decreased by 22 percent from 4.33 in 2011 to 3.39 in 2016,
  - Pickup trucks decreased by 5 percent from 4.07 in 2011 to 3.86 in 2016, and
  - Vans increased by 2 percent from 1.91 in 2011 to 1.94 in 2016.

Table 8
Passenger Vehicle Occupant Fatality Rates* in Rollover Crashes, by Vehicle Type, 2007–2016

Year	Passenger Vehicle Type					Total Passenger Vehicles**
	Passenger Cars	Light Trucks				
		SUVs	Pickup Trucks	Vans	Total**	
2007	2.94	7.25	6.68	2.95	6.13	4.29
2008	2.63	6.01	5.97	2.74	5.34	3.77
2009	2.35	5.57	5.51	2.51	4.96	3.47
2010	2.17	5.34	5.04	2.33	4.67	3.24
2011	2.24	4.33	4.07	1.91	3.83	3.01
2012	2.38	4.21	4.15	1.73	3.79	3.06
2013	2.19	3.68	3.91	1.78	3.49	2.82
2014	2.03	3.49	3.88	1.69	3.39	2.69
2015	2.16	3.47	3.89	1.73	3.41	2.77
2016	2.19	3.39	3.86	1.94	3.42	2.80

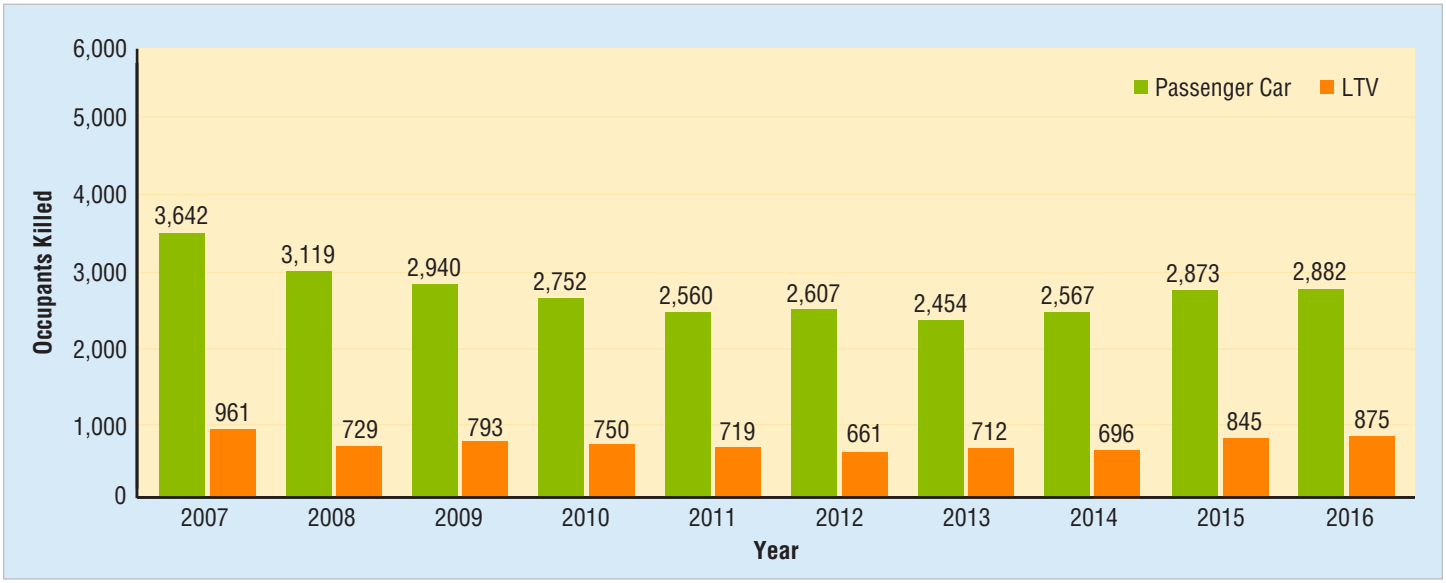
Sources: Fatalities – FARS 2007–2015 Final File, 2016 ARF; Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
Note: Due to an enhancement in Polk's 2011–2016 passenger vehicle registration data processes, results for these years are not strictly comparable to prior years. Refer to the Appendix for more information about these changes.
*Occupant fatality rate per 100,000 registered vehicles
**Includes other/unknown light-truck vehicle types

Two-Vehicle Crashes Between a Passenger Car and a Light Truck

Figure 6 displays the number of occupant fatalities in two-vehicle crashes involving one passenger car and one LTV (SUV, pickup truck, or van) from 2007 to 2016. In these crashes, there were a range of 3.3 to 4.3 times as many passenger car occupant fatalities as LTV occupant fatalities. In more detail from 2007 to 2016:

- When a passenger car and an LTV hit head-on, an occupant was between 3.1 to 4.1 times more frequently to be killed in a passenger car than in an LTV.
- When a passenger car front hit the side of an LTV, an occupant was between 1.3 to 1.7 times more frequently to be killed in an LTV than in a passenger car.
- However, when an LTV front hit the side of a passenger car, an occupant was between 13.3 to 22.7 times more frequently to be killed in a passenger car than in an LTV.

Figure 6
Occupants Killed in Two-Vehicle Crashes Involving a Passenger Car and an LTV,* 2007–2016



Source: FARS 2007–2015 Final File, 2016 ARF
*LTV includes SUV, pickup truck, or van

Table 9 presents the number of occupants killed in two-vehicle crashes between one passenger car and one light truck from 2015 to 2016:

- The number of passenger car occupants killed increased by less than 1 percent from 2,873 in 2015 to 2,882 in 2016.
- The number of LTV occupants killed increased by 4 percent from 845 in 2015 to 875 in 2016.

Table 9
Occupants Killed in Two-Vehicle Crashes Involving a Passenger Car and an LTV,* 2015 and 2016

Occupants	Year		Percent Change
	2015	2016	
Killed in Passenger Car	2,873	2,882	+0.3%
Killed in LTV*	845	875	+3.6%

Source: FARS 2015 Final File, 2016 ARF
*LTV includes SUV, pickup truck, or van

Alcohol

A driver is considered to be alcohol-impaired when the driver's blood alcohol concentration (BAC) is .08 grams per deciliter (g/dL) or higher. From 2007 to 2016, the percentage of alcohol-impaired passenger vehicle drivers involved in fatal crashes decreased slightly among each vehicle type as shown in Table 10. Pickup truck drivers had the highest percentage of alcohol impairment in fatal crashes (22%) compared to other passenger vehicle drivers (21% for passenger cars, 19% for SUVs, and 12% for vans) in 2016. The percentage of alcohol-impaired van drivers involved in fatal crashes was substantially lower than other passenger vehicle drivers.

Table 10

Percentage of Alcohol-Impaired (BAC=.08+ g/dL) Passenger Vehicle Drivers in Fatal Crashes, By Vehicle Type, 2007–2016

	Drivers by Passenger Vehicle Type											
			Light Trucks									
	Passenger Cars		SUVs		Pickup Trucks		Vans		Total*		All Passenger Vehicles*	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2007	5,144	23%	1,895	23%	2,725	27%	457	14%	5,083	23%	10,227	23%
2008	4,679	23%	1,651	23%	2,316	26%	337	12%	4,311	23%	8,991	23%
2009	4,186	23%	1,583	23%	2,258	27%	291	12%	4,136	23%	8,322	23%
2010	4,164	24%	1,423	21%	2,041	25%	286	12%	3,752	22%	7,916	23%
2011	4,103	24%	1,410	21%	1,877	24%	256	12%	3,551	21%	7,654	22%
2012	4,129	23%	1,482	21%	1,919	24%	253	12%	3,663	21%	7,792	22%
2013	4,072	23%	1,420	21%	1,887	24%	251	12%	3,573	21%	7,645	22%
2014	3,892	22%	1,494	21%	1,936	25%	246	12%	3,688	22%	7,579	22%
2015	4,124	21%	1,545	20%	2,052	24%	227	10%	3,860	21%	7,983	21%
2016	4,250	21%	1,600	19%	1,995	22%	280	12%	3,922	20%	8,172	20%

Source: FARS 2007–2015 Final File, 2016 ARF
*Includes drivers of other/unknown light-truck vehicle types

Occupant Fatalities by State

For each State, the District of Columbia, and Puerto Rico, Table 11 presents the number of passenger vehicle occupant fatalities in 2016 by vehicle type. Puerto Rico is not included in the overall U.S. total.

Of the total passenger vehicle fatalities by State (excluding the District of Columbia and Puerto Rico) in 2016:

- The States with the largest percentages of passenger car fatalities were New Jersey (69%) and Connecticut (68%).
- The States with the largest percentages of SUV fatalities were Wyoming (37%) and Vermont (33%).
- The States with the largest percentages of pickup truck fatalities were South Dakota (33%) and North Dakota (32%).
- The States with the largest percentages of van fatalities were Delaware (11%), Iowa (11%), and Wyoming (11%).

Additional State/county-level data is available at NHTSA's State Traffic Safety Information website: https://cdan.nhtsa.gov/stsi.htm

Crash Report Sampling System (CRSS) Replaces the National Automotive Sampling System (NASS) General Estimates System (GES)

NHTSA's National Center for Statistics and Analysis (NCSA) redesigned the nationally representative sample of police-reported traffic crashes, which estimates the number of police-reported injury and property-damage-only crashes in the United States. The new system, called CRSS, replaced NASS GES in 2016. The 2016 CRSS data was released the last week of March 2018. For more information, see the Additional Resources section of the CRSS web page at: www.nhtsa.gov/national-center-statistics-and-analysis-ncsa/crash-report-sampling-system-crss

Table 11

Passenger Vehicle Occupant Fatalities, by State and Vehicle Type, 2016

State	Passenger Vehicle Type										Total Passenger Vehicle* Fatalities
	Passenger Cars		Light Trucks								
			SUVs		Pickup Trucks		Vans		Total*		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Alabama	400	53%	163	21%	165	22%	23	3%	360	47%	760
Alaska	16	28%	18	31%	18	31%	6	10%	42	72%	58
Arizona	261	51%	110	22%	101	20%	31	6%	246	49%	507
Arkansas	183	47%	79	20%	108	27%	20	5%	210	53%	393
California	1,297	67%	298	15%	265	14%	76	4%	645	33%	1,942
Colorado	187	52%	85	23%	66	18%	24	7%	175	48%	362
Connecticut	115	68%	35	21%	10	6%	9	5%	54	32%	169
Delaware	42	58%	14	19%	8	11%	8	11%	31	42%	73
Dist of Columbia	8	67%	4	33%	0	0%	0	0%	4	33%	12
Florida	1,048	62%	262	15%	289	17%	93	5%	652	38%	1,700
Georgia	583	56%	210	20%	216	21%	39	4%	467	44%	1,050
Hawaii	40	63%	7	11%	8	13%	3	5%	23	37%	63
Idaho	74	39%	48	25%	60	31%	8	4%	118	61%	192
Illinois	407	58%	150	21%	96	14%	45	6%	297	42%	704
Indiana	329	57%	98	17%	116	20%	33	6%	249	43%	578
Iowa	154	52%	54	18%	54	18%	32	11%	140	48%	294
Kansas	151	48%	64	21%	74	24%	21	7%	161	52%	312
Kentucky	353	60%	88	15%	116	20%	32	5%	236	40%	589
Louisiana	254	52%	74	15%	138	28%	17	3%	233	48%	487
Maine	60	50%	21	17%	31	26%	8	7%	61	50%	121
Maryland	190	66%	47	16%	33	11%	20	7%	100	34%	290
Massachusetts	163	67%	40	17%	22	9%	13	5%	79	33%	242
Michigan	377	57%	140	21%	97	15%	49	7%	287	43%	664
Minnesota	144	57%	52	21%	41	16%	13	5%	107	43%	251
Mississippi	273	50%	111	20%	135	25%	24	4%	275	50%	548
Missouri	368	55%	117	18%	142	21%	39	6%	298	45%	666
Montana	53	36%	41	28%	44	30%	7	5%	93	64%	146
Nebraska	80	48%	29	17%	46	27%	12	7%	88	52%	168
Nevada	87	57%	35	23%	22	14%	7	5%	65	43%	152
New Hampshire	57	59%	14	15%	23	24%	1	1%	39	41%	96
New Jersey	234	69%	53	16%	32	9%	16	5%	103	31%	337
New Mexico	115	43%	72	27%	73	27%	6	2%	153	57%	268
New York	324	63%	90	17%	70	14%	32	6%	192	37%	516
North Carolina	582	58%	184	18%	177	18%	55	6%	417	42%	999
North Dakota	36	47%	13	17%	25	32%	3	4%	41	53%	77
Ohio	471	63%	135	18%	99	13%	40	5%	278	37%	749
Oklahoma	206	44%	87	19%	143	31%	31	7%	261	56%	467
Oregon	180	53%	68	20%	67	20%	24	7%	160	47%	340
Pennsylvania	494	65%	136	18%	88	12%	37	5%	263	35%	757
Rhode Island	19	63%	6	20%	4	13%	0	0%	11	37%	30
South Carolina	364	58%	118	19%	118	19%	30	5%	269	42%	633
South Dakota	29	36%	21	26%	27	33%	4	5%	52	64%	81
Tennessee	421	57%	146	20%	137	19%	31	4%	315	43%	736
Texas	1,218	51%	435	18%	634	27%	84	4%	1,164	49%	2,382
Utah	85	49%	43	25%	38	22%	8	5%	89	51%	174
Vermont	28	62%	15	33%	2	4%	0	0%	17	38%	45
Virginia	308	60%	88	17%	82	16%	30	6%	206	40%	514
Washington	192	58%	64	19%	54	16%	19	6%	140	42%	332
West Virginia	85	46%	39	21%	47	25%	14	8%	101	54%	186
Wisconsin	250	58%	85	20%	57	13%	38	9%	181	42%	431
Wyoming	17	24%	26	37%	20	28%	8	11%	54	76%	71
U.S. Total	**13,412**	**57%**	**4,432**	**19%**	**4,538**	**19%**	**1,223**	**5%**	**10,302**	**43%**	**23,714**
Puerto Rico	92	71%	29	22%	6	5%	3	2%	38	29%	130

Source: FARS 2016 ARF

*Includes occupants of other/unknown light-truck vehicle types

Appendix

Polk improved the data quality of NVPP, which resulted in a complete rewrite of the data. They:

- Enhanced their business rules for vehicles on the road,
- Have more consistent reporting/processing across States, and
- Upgraded their basis for vehicle coding.

A comparison between Polk's earlier and current version of the NVPP registration data for 2011 shows that Polk's enhancements have resulted in over a 3-percent increase in passenger vehicle registration counts from what was previously reported. When looking at passenger cars and light trucks separately, the passenger car count decreased by 5.6 percent and the light truck count increased by 14.6 percent between the earlier NVPP and current NVPP for 2011 (see passenger car and light truck counts in Table 12).

This fact sheet uses 2011–2016 data for passenger car and light truck registrations based on Polk's current NVPP. From 2007 to 2010 using Polk's earlier NVPP, passenger vehicle registrations decreased 0.4 percent (Figure 1). Using 2007 to 2010 earlier NVPP, light trucks had a 2-percent increase in registrations, while passenger cars had a 2-percent decrease. Among the light-truck categories, SUV registrations increased by 7 percent, pickup truck registrations increased by 1 percent, and van registrations decreased by 9 percent.

Table 12
Registered Vehicle Data Changes, 2007–2016

Registered Vehicles						
Year	All Passenger Vehicles	Passenger Cars	Light Trucks			
			All*	SUVs	Pickup Trucks	Vans
2007 (earlier NVPP)	238,747,447	137,929,951	100,817,496	39,463,148	41,121,470	19,406,561
2008 (earlier NVPP)	239,890,985	139,028,041	100,862,944	40,529,579	40,782,963	18,784,452
2009 (earlier NVPP)	239,212,572	137,203,972	102,008,600	41,383,289	41,676,351	18,222,255
2010 (earlier NVPP)	237,686,627	135,310,480	102,376,147	42,378,757	41,596,353	17,732,967
2011 (earlier NVPP)	238,138,184	134,543,655	103,594,529	43,891,547	41,778,775	17,308,359
2011 (current NVPP)	245,669,103	126,966,714	118,702,389	50,161,565	48,912,291	19,592,314
2012 (current NVPP)	245,768,366	127,077,676	118,690,690	51,305,806	48,465,436	18,886,646
2013 (current NVPP)	249,427,710	128,936,225	120,491,485	53,447,838	48,644,891	18,339,481
2014 (current NVPP)	254,609,203	131,138,925	123,470,278	56,277,894	49,134,966	18,030,322
2015 (current NVPP)	260,619,419	133,218,366	127,401,053	59,662,508	49,911,616	17,801,045
2016 (current NVPP)	266,879,798	134,879,198	132,000,600	63,441,519	50,862,931	17,671,592

Source: Registered Vehicles – Polk data from R. L. Polk & Co., earlier NVPP (2007–2010) and current NVPP (2011–2016), a foundation of IHS Markit automotive solutions.
*Includes other/unknown light-truck registrations

The suggested APA format citation for this document is:

National Center for Statistics and Analysis. (2018, April). *Passenger vehicles: 2016 data* (Traffic Safety Facts. Report No. DOT HS 812 537). Washington, DC: National Highway Traffic Safety Administration.

For More Information:

Information on traffic fatalities is available from the National Center for Statistics and Analysis, NSA-230, 1200 New Jersey Avenue SE., Washington, DC 20590. NCSA can be contacted at 800-934-8517 or by e-mail at ncsarequests@dot.gov. General information on highway traffic safety can be found at www.nhtsa.gov/NCSA. To report a safety-related problem or to inquire about motor vehicle safety information, contact the Vehicle Safety Hotline at 888-327-4236.

Other fact sheets available from the National Center for Statistics and Analysis are *Alcohol-Impaired Driving, Bicyclists and Other Cyclists, Children, Large Trucks, Motorcycles, Occupant Protection in Passenger Vehicles, Older Population, Pedestrians, Rural/Urban Comparison of Traffic Fatalities, School Transportation-Related Crashes, Speeding, State Alcohol Estimates, State Traffic Data, Summary of Motor Vehicle Crashes,* and *Young Drivers*. Detailed data on motor vehicle traffic crashes are published annually in *Traffic Safety Facts: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*. The fact sheets and annual Traffic Safety Facts report can be found at https://crashstats.nhtsa.dot.gov/.

U.S. Department of Transportation
National Highway Traffic Safety Administration