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

TRAFFIC SAFETY FACTS
Crash • Stats

NHTSA

DOT HS 812 358 A Brief Statistical Summary January 2017

Early Estimate of Motor Vehicle Traffic Fatalities For the First 9 Months of 2016

Summary

A statistical projection of traffic fatalities for the first 9 months of 2016 shows that an estimated 27,875 people died in motor vehicle traffic crashes. This represents an increase of about 8 percent as compared to the 25,808 fatalities that were reported to have occurred in the first 9 months of 2015, as shown in Table 1. The third quarter of 2016 represents the eighth consecutive quarter with increases in fatalities as compared to the corresponding quarters in the previous years. Preliminary data reported by the Federal Highway Administration (FHWA) shows that vehicle miles traveled (VMT) in the first 9 months of 2016 increased by about 70.0 billion miles, or about a 3.0-percent increase. Also shown in Table 1 are the fatality rates per 100 million VMT, by quarter. The fatality rate for the first 9 months of 2016 increased to 1.15 fatalities per 100 million VMT, up from 1.10 fatalities per 100 million VMT in the first 9 months of 2015. The actual counts for 2015 and 2016 and the ensuing percentage changes and rates from 2015 to 2016 will be further revised as the final file for 2015 and the annual reporting file for 2016 are available next year. These estimates may be further refined when the projections for the whole of 2016 are released in late March 2017.

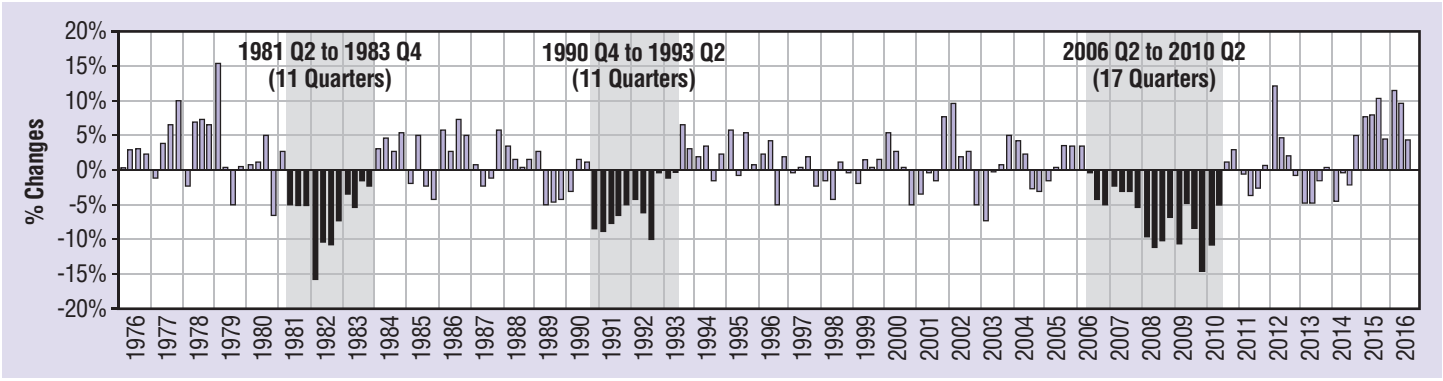
Table 1: Fatalities and Fatality Rate by Quarter, First Half, and the Percentage Change From the Corresponding Quarter or First Half in the Previous Year

Quarter	1st Quarter (Jan–Mar)	2nd Quarter (Apr–Jun)	3rd Quarter (Jul–Sep)	4th Quarter (Oct–Dec)	Total (Full Year)	First 9 Months (Jan–Sep)
Fatalities and Percentage Change in Fatalities for the Corresponding Quarter/Half From the Prior Year						
2005	9,239	11,005	11,897	11,369	43,510	32,141
2006	9,558 [+3.5%]	10,942 [-0.6%]	11,395 [-4.2%]	10,813 [-4.9%]	42,708 [-1.8%]	31,895 [-0.8%]
2007	9,354 [-2.1%]	10,611 [-3.0%]	11,056 [-3.0%]	10,238 [-5.3%]	41,259 [-3.4%]	31,021 [-2.7%]
2008	8,459 [-9.6%]	9,435 [-11.1%]	9,947 [-10.0%]	9,582 [-6.4%]	37,423 [-9.3%]	27,841 [-10.3%]
2009	7,552 [-10.7%]	8,975 [-4.9%]	9,104 [-8.5%]	8,252 [-13.9%]	33,883 [-9.5%]	25,631 [-7.9%]
2010	6,755 [-10.6%]	8,522 [-5.0%]	9,226 [+1.3%]	8,496 [+3.0%]	32,999 [-2.6%]	24,503 [-4.4%]
2011	6,726 [-0.4%]	8,227 [-3.5%]	8,984 [-2.6%]	8,542 [+0.5%]	32,479 [-1.6%]	23,937 [-2.3%]
2012	7,521 [+11.8%]	8,612 [+4.7%]	9,171 [+2.1%]	8,478 [-0.7%]	33,782 [+4.0%]	25,304 [+5.7%]
2013	7,166 [-4.7%]	8,207 [-4.7%]	9,024 [-1.6%]	8,496 [+0.2%]	32,893 [-2.6%]	24,397 [-3.6%]
2014	6,856 [-4.3%]	8,179 [-0.3%]	8,799 [-2.5%]	8,910 [+4.9%]	32,744 [-0.5%]	23,834 [-2.3%]
2015	7,335 [+7.0%]	8,765 [+7.2%]	9,708 [+10.3%]	9,284 [+4.2%]	35,092 [+7.2%]	25,808 [+8.3%]
2016†	*8,200 [+11.8%]*	*9,575 [+9.2%]*	*10,100 [+4.0%]*	—	—	*27,875 [+8.0%]*
Fatality Rate per 100 Million Vehicle Miles of Travel (VMT)						
2005	1.32	1.42	1.54	1.54	1.46	1.43
2006	1.35	1.41	1.47	1.44	1.42	1.41
2007	1.31	1.35	1.41	1.37	1.36	1.36
2008	1.22	1.25	1.33	1.32	1.26	1.26
2009	1.09	1.16	1.17	1.12	1.15	1.14
2010	0.98	1.09	1.18	1.14	1.11	1.09
2011	0.98	1.09	1.18	1.17	1.10	1.09
2012	1.08	1.12	1.21	1.16	1.14	1.14
2013	1.04	1.07	1.17	1.15	1.10	1.09
2014	0.99	1.03	1.11	1.17	1.08	1.05
2015	1.02	1.08	1.19	1.18	1.13	1.10
2016†	*1.10*	*1.15*	*1.21*	—	—	*1.15*

†2016 statistical projections and rates based on these projections.
Source: Fatalities, 2005–2014 FARS Final File, 2015 FARS Annual Report File VMT: FHWA September 2016 Traffic Volume Trends

Figure 1 shows the historical trend of the percentage change every quarter from the same quarter in the previous year, going back to 1976. NHTSA has fatality data going back to 1975, and the shading in the chart depicts the years during which there were significant number of consecutive quarters with declines as compared to the corresponding quarters of the previous years. The declines during the early 1980s and 1990s lasted 11 consecutive quarters, while the most recent decline occurred over 17 consecutive quarters ending in the second quarter of 2010.

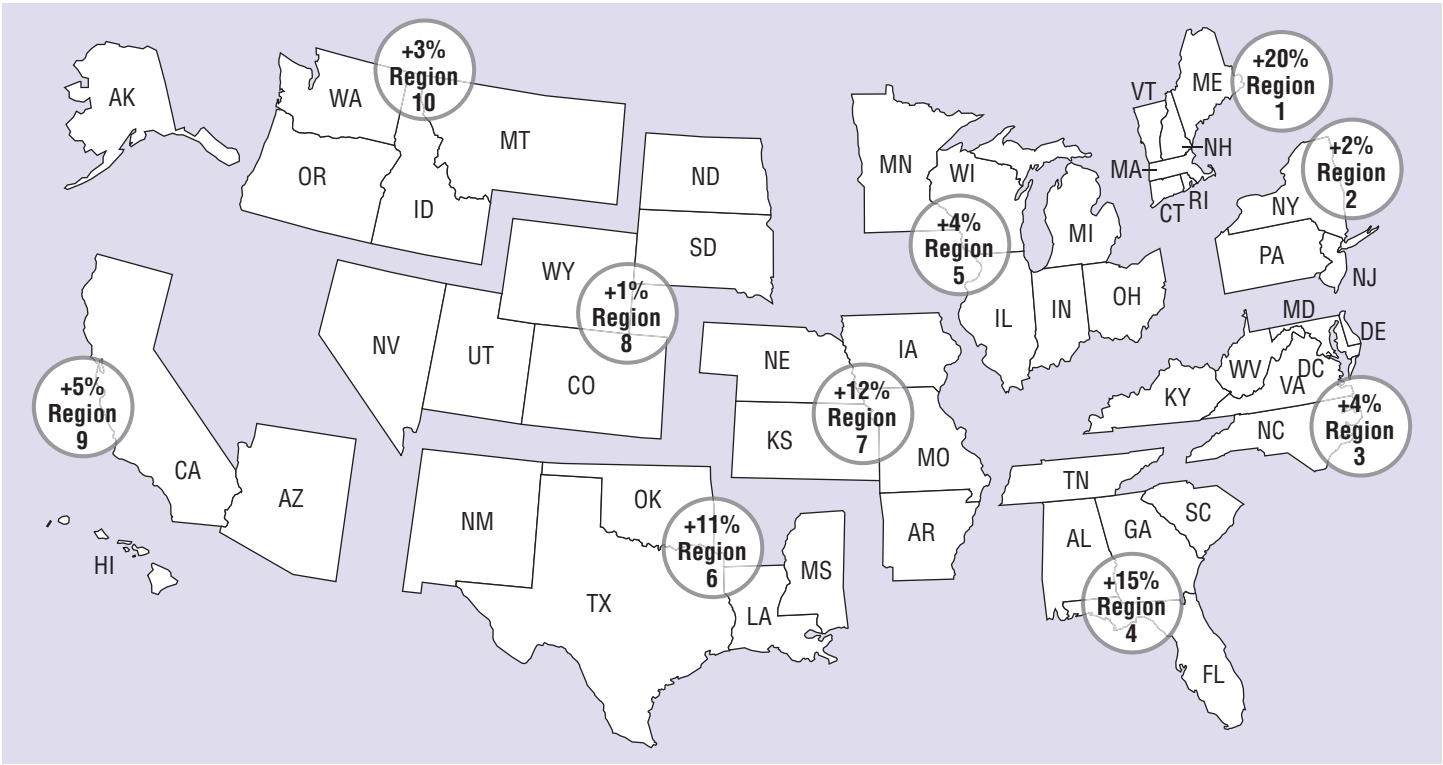
Figure 1: Percentage Change in Fatalities in Every Quarter as Compared to the Fatalities in the Same Quarter During the Previous Year



Regional Changes

As discussed in a methodology Research Note,[1] the statistical procedures employed in these projections were generated for each NHTSA administrative Region and were collated to create the national estimate. This allows for the comparison of regional estimates in 2016 with the reported regional totals in 2015, as depicted by the estimated percentage changes in Figure 2. All 10 NHTSA Regions experienced increases during the first 9 months of 2016 as compared to reported totals during the first 9 months of 2015. The estimated regional year-to-year percentage changes shown in Figure 2 are subject to change as fatality counts for 2015 and 2016 are finalized.

Figure 2: Percentage Change in Estimated Fatalities in 2016 From Reported 2015 Fatality Counts, by NHTSA Region, for The First 9 Months (Jan–Sep)



[1] Chen, C-L, Subramanian, R., Choi, E-H., & Liu, C. (2010, November). *Statistical methodology to make early estimates of motor vehicle traffic fatalities* (Traffic Safety Facts Research Note. Report No. DOT HS 811 123). Washington, DC: National Highway Traffic Safety Administration. Available at https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/811123

Discussion

The National Highway Traffic Safety Administration is continuing to gather and finalize data on crash fatalities for2015 and 2016 using information from police crash reports and other sources. It is too soon to attribute contributing factors or potential implications of any changes in deaths on our roadways. The final data for 2015 as well as the annual file for 2016 will be available in late fall of 2017, which usually results in the revision of fatality totals and the ensuing rates and percentage changes. NHTSA recently reported that the significant increase in fatalities in 2015 was primarily driven by increases in pedestrian and motorcyclist as well as pedalcyclist fatalities.

In the last few years, since recording a significant increase of 11.8 percent during the first quarter of 2012, the magnitude of the increases steadily declined during each subsequent quarter. Fatalities are reported to have increased by about 4.7 percent in the second quarter and by about 2.1 percent in the third quarter of 2012. Subsequently, beginning with the fourth quarter of 2012, fatalities have declined in seven out of eight quarters (2013's fourth quarter was a marginal increase) until the 4.9-percent increase reported for the fourth quarter of 2014. Fatalities have increased eight consecutive quarters beginning with the fourth quarter of 2014. The fatality rates per 100 million in 2015 VMT, when compared to the rates for the corresponding quarters in 2014, are higher for the first four quarters of 2015. The fatality rates for the first three quarters of 2016 are also projected to be significantly higher than those for the corresponding quarters in 2015.

Data

The data used in this analysis comes from several sources: NHTSA's Fatality Analysis Reporting System (FARS), FastFARS (FF), and Monthly Fatality Counts (MFC); and from FHWA's VMT estimates. FARS is a census of fatal traffic crashes in the 50 States, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway and must result in the death of at least one person (occupant of a vehicle or a nonoccupant) within 30 days of the crash. FARS final files from January 2003 to December 2014 and FARS Annual Report file in 2015 are used. The FF program is designed as an Early Fatality Notification System to capture fatality counts from States more rapidly and in real-time. It aims to provide near-real-time notification of fatality counts from all jurisdictions reporting to FARS. The MFC data provides monthly fatality counts by State through sources that are independent from the FastFARS or FARS systems. MFCs from January 2003 up to October 2016 are used. MFCs are reported mid-month for all prior months of the year.

In order to estimate the traffic fatality counts for the first 9 months of 2016, time series cross-section regression was applied to analyze the data with both cross-sectional values (by NHTSA Region) and time series (by month), to model the relationship among FARS, MFC, and FF, the details of which are available in a companion Research Note. The methodology used to generate the estimates for the first 9 months of 2016 is the same as the one used by NHTSA to project the increase in the fatalities for the whole of 2015.[2]

[2] National Center for Statistics and Analysis. (2016, July). *Early estimate of motor vehicle traffic fatalities for 2015* (Crash•Stats Brief Statistical Summary. Report No. DOT HS 812 269). Washington, DC: National Highway Traffic Safety Administration.

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