



TRAFFIC SAFETY FACTS

Research Note

DOT HS 811 372

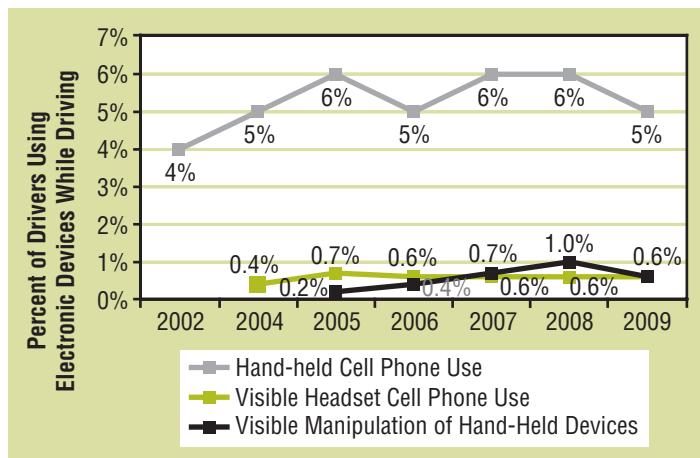
Summary of Statistical Findings

September 2010

Driver Electronic Device Use in 2009

The percentage of drivers visibly manipulating hand-held devices while driving dropped significantly from 1.0 percent in 2008 to 0.6 percent in 2009. Similarly, the hand-held cell phone use by drivers also dropped significantly from 6 percent in 2008 to 5 percent in 2009 (Figure 1). These results are from the National Occupant Protection Use Survey (NOPUS), which provides the only nationwide probability-based observed data on driver electronic device use in the United States. NOPUS is conducted annually by the National Center for Statistics and Analysis (NCSA), National Highway Traffic Safety Administration.

Figure 1
Driver Use of Electronic Devices, 2002–2009



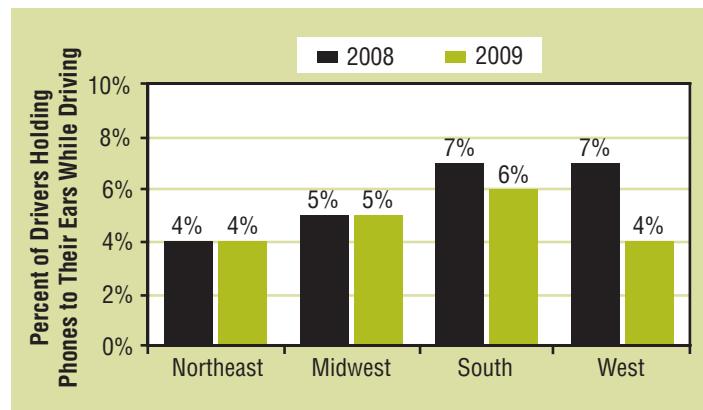
Driver Holding Phones to Their Ears While Driving

The percentage of drivers holding cell phones to their ears while driving decreased to 5 percent in 2009. This rate translates into 672,000 vehicles driven by people using hand-held cell phones at a typical daylight moment in 2009. It also translates into an estimated 9 percent of the vehicles whose drivers were using some type of phone (hand-held or hands-free) in a typical daylight moment in 2009. Please refer to the section "Estimating Drivers on Road and Hands-Free Cell Phone Users" for more details on how these two estimates were obtained.

The decline in hand-held cell phone use in 2009 occurred in a number of driver categories, including male drivers, black

drivers, drivers of other races than black or white, drivers in the West, drivers on expressway exit ramps, drivers traveling through clear weather conditions, drivers of passenger cars, drivers on weekdays (especially during weekday rush hours), and drivers driving alone. Table 1 shows the percentages of drivers holding phones to their ears in 2008 and 2009 by major characteristics of drivers. The significant decrease of hand-held cell phone use in the West in 2009 as compared to 2008 is shown in Figure 2.

Figure 2
Driver Hand-Held Cell Phone Use by Region in 2008 and 2009



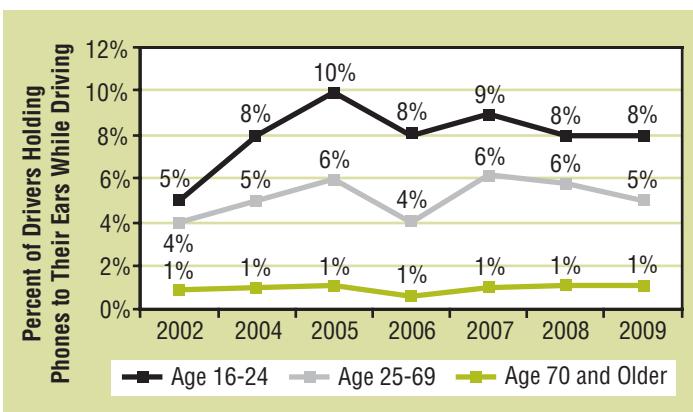
The 2009 NOPUS also found that hand-held cell phone use continued to be higher among 16- to 24-year-olds and lower among drivers 70 and older (Figure 3).

Driver Speaking With Visible Headsets on While Driving

Table 2 shows the percentages of drivers speaking with visible headsets on while driving in 2008 and 2009 by major characteristics of drivers.

The percentage of drivers speaking with visible headsets on while driving stood at 0.6 percent in 2009. Table 2 also shows that 2009 continued the pattern that drivers driving alone were more likely to use cell phones with headsets than those driving with passengers.

Figure 3
Driver Hand-Held Cell Phone Use by Age, 2002–2009



The percentage of drivers speaking with visible headsets on while driving in the urban areas decreased significantly from 1.1 percent in 2008 to 0.5 percent in 2009.

Driver Visibly Manipulating Hand-Held Devices While Driving

The percentage of drivers who were text-messaging or visibly manipulating other hand-held devices while driving decreased significantly from 1.0 percent in 2008 to 0.6 percent in 2009 as shown in Table 3. Table 3 presents the percentages of drivers visibly manipulating hand-held devices in 2008 and 2009 by major characteristics of drivers.

The decline in drivers visibly manipulating hand-held devices in 2009 occurred in a number of driver categories, including female drivers, white drivers, drivers of other races than black or white, drivers on other surface streets, drivers in the West, drivers traveling through clear weather conditions, drivers in urban areas, drivers of passenger cars, drivers traveling during weekday non-rush hours, and drivers driving with at least one passenger. The significant decrease in percentages of drivers visibly manipulating hand-held devices in the West in 2009 as compared to 2008 is shown in Figure 4. It also shows that the decline in hand-held device manipulation for drivers did not happen uniformly in all regions.

Figure 5 shows that since 2007, the percentages of drivers visibly manipulating hand-held devices while driving have been significantly higher among drivers 16 to 24 than those of other age groups.

NOPUS is the only nationwide probability-based observational survey of driver electronic device use in the United States. The survey observes usage as it actually occurs at randomly selected roadway sites and thus provides the best tracking of the extent to which people in the United States use cell phones and other electronic devices while driving.

Figure 4
Percentage of Drivers Visibly Manipulating Hand-Held Devices While Driving by Region in 2008 and 2009

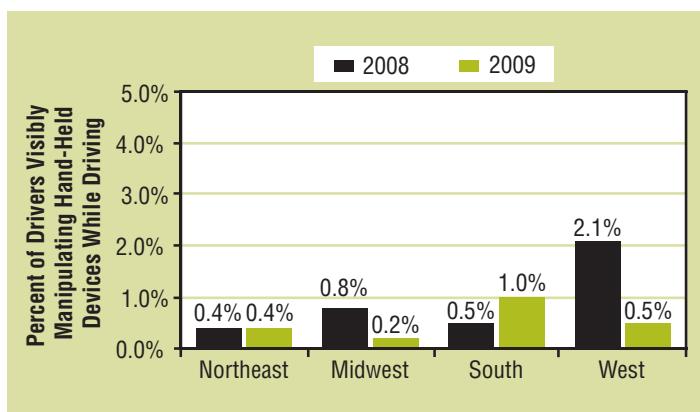
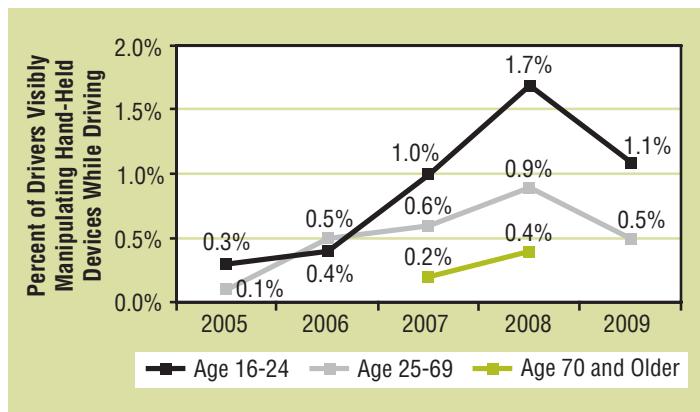


Figure 5
Percentage of Drivers Visibly Manipulating Hand-Held Devices While Driving by Age, 2005–2009



The survey data is collected by trained data collectors at probabilistically sampled intersections controlled by stop signs or stoplights, where data collectors observe, from the roadside, drivers and other occupants of passenger vehicles having no commercial or government markings. Data is collected between 7 a.m. and 6 p.m. Only stopped vehicles are observed to allow time to collect a variety of information required by the survey, including subjective assessments of occupants' age and race. Observers collect data on the driver, right-front passenger, and up to two passengers in the second row of seats. Observers do not interview occupants, so that NOPUS can capture the untainted behavior of occupants. The 2009 NOPUS data was collected between June 1 and June 20, 2009, while the 2008 data was collected between June 2 and June 22, 2008.

Statistically significant changes in the use of hand-held phones, headset use, and manipulation of hand-held devices between 2008 and 2009 are shown, respectively, in Table 1, Table 2, and Table 3 by having a result that is 90 percent or greater in column 7. Statistical confidences that hand-held cell phone use, headset use, or the manipulation of hand-held

Table 1
The Percentage of Drivers Holding Phones to Their Ears While Driving, by Major Characteristics

Driver Group ¹	2008		2009		2008-2009 Change	
	% of Drivers Holding Phone to Ears ²	Confidence That Use Is High or Low in Group ³	% of Drivers Holding Phone to Ears ²	Confidence That Use Is High or Low in Group ³	Difference in Percentage Points	Confidence in a Change in % of Drivers Holding Phone to Ear ⁴
All Drivers ⁶	6%		5%		-1	94%
Males	5%	100%	4%	100%	-1	96%
Females	8%	100%	6%	100%	-2	84%
Drivers by Age Group ⁶						
Age 16-24	8%	100%	8%	100%	0	67%
Age 25-69	6%	74%	5%	69%	-1	86%
Age 70 and Older	1%	100%	1%	100%	0	73%
Drivers by Race ⁶						
White	6%	98%	5%	61%	-1	85%
Black	8%	99%	6%	87%	-2	91%
Other Races	6%	54%	4%	97%	-2	96%
Drivers on						
Expressway Exit Ramps	6%	93%	5%	70%	-1	97%
Other Surface Streets	6%	93%	5%	70%	-1	81%
Drivers Traveling Through						
Light Precipitation	6%	60%	5%	59%	-1	63%
Fog	4%	89%	5%	59%	1	34%
Clear Weather Conditions	6%	64%	5%	56%	-1	92%
Drivers of						
Passenger Cars	6%	99%	4%	100%	-2	95%
Vans & SUVs	7%	100%	6%	100%	-1	73%
Pickup Trucks	6%	52%	5%	52%	-1	89%
Drivers in the						
Northeast	4%	97%	4%	78%	0	17%
Midwest	5%	99%	5%	66%	0	27%
South	7%	87%	6%	100%	-1	35%
West	7%	96%	4%	86%	-3	100%
Drivers in						
Urban Areas	7%	91%	5%	71%	-2	89%
Suburban Areas	7%	98%	5%	95%	-2	89%
Rural Areas	4%	100%	4%	99%	0	13%
Drivers Traveling During						
Weekdays	7%	100%	6%	100%	-1	95%
Rush Hours	8%	100%	5%	58%	-3	99%
Nonrush Hours	6%	100%	6%	58%	0	39%
Weekends	4%	100%	4%	100%	0	32%
Drivers With ⁵						
No Passengers	8%	100%	6%	100%	-2	96%
At Least One Passenger	2%	100%	2%	100%	0	5%
Drivers With ⁵						
No Passengers	8%	100%	6%	100%	-2	96%
Passengers All Under Age 8	6%	55%	7%	92%	1	19%
Passengers All 8 and Older	2%	100%	2%	100%	0	1%
Some Passengers Under 8 and Some 8 or Older	2%	100%	2%	100%	0	49%

¹ Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.

² The percentage of drivers holding a phone to their ears, based on the subjective assessments of roadside observers.

³ The statistical confidence that use in the driver group (e.g., white drivers) is higher or lower than use in the corresponding complementary driver group (e.g., combined black or other drivers). Confidences that meet or exceed 90 percent are formatted in boldface type. Confidences are rounded to the nearest percentage point, and so confidences reported as "100 percent" are between 99.5 percent and 100.0 percent.

⁴ The degree of statistical confidence that the 2009 use rate is different from the 2008 rate. Confidences that meet or exceed 90 percent are formatted in boldface type.

⁵ Among passengers observed in the right-front seat and the second row of seats (but NOPUS only counts up to two passengers in the second row and none in the third row and beyond).

⁶ Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis

Table 2
The Percentage of Drivers Speaking With Visible Headsets on While Driving, by Major Characteristics

Driver Group ¹	2008		2009		2008-2009 Change	
	% of Drivers Speaking with Headsets ²	Confidence That Use Is High or Low in Group ³	% of Drivers Speaking with Headsets ²	Confidence That Use Is High or Low in Group ³	Difference in Percentage Point Tenth	Confidence in a Change in % of Drivers Speaking With Headsets ⁴
All Drivers ⁶	0.6%		0.6%		0.0	6%
Males	0.6%	80%	0.5%	78%	-0.1	36%
Females	0.5%	80%	0.6%	78%	0.1	43%
Drivers by Age Group ⁶						
Age 16-24	0.9%	91%	0.5%	69%	-0.4	75%
Age 25-69	0.6%	68%	0.6%	95%	0.0	18%
Age 70 and Older	0.1%	100%	0.2%	100%	0.1	6%
Drivers by Race ⁶						
White	0.4%	99%	0.5%	83%	0.1	48%
Black	0.8%	86%	0.7%	66%	-0.1	32%
Other Races	1.4%	97%	0.8%	76%	-0.6	67%
Drivers on						
Expressway Exit Ramps	1.0%	99%	0.5%	64%	-0.5	85%
Other Surface Streets	0.4%	99%	0.6%	64%	0.2	76%
Drivers Traveling Through						
Light Precipitation	0.3%	93%	0.5%	71%	0.2	55%
Fog	NA	NA	1.8%	92%	NA	NA
Clear Weather Conditions	0.6%	94%	0.6%	50%	0.0	14%
Drivers of						
Passenger Cars	0.6%	78%	0.6%	54%	0.0	25%
Vans and SUVs	0.6%	51%	0.7%	90%	0.1	37%
Pickup Trucks	0.4%	91%	0.3%	100%	-0.1	37%
Drivers in the						
Northeast	0.5%	65%	0.4%	89%	-0.1	73%
Midwest	0.3%	98%	0.7%	67%	0.4	83%
South	0.3%	97%	0.4%	88%	0.1	71%
West	1.3%	97%	0.8%	84%	-0.5	64%
Drivers in						
Urban Areas	1.1%	99%	0.5%	67%	-0.6	93%
Suburban Areas	0.6%	62%	0.6%	66%	0.0	19%
Rural Areas	0.3%	98%	0.6%	57%	0.3	88%
Drivers Traveling During						
Weekdays	0.6%	84%	0.6%	86%	0.0	1%
Rush Hours	0.9%	99%	0.7%	68%	-0.2	54%
Nonrush Hours	0.4%	99%	0.6%	68%	0.2	66%
Weekends	0.5%	84%	0.5%	86%	0.0	10%
Drivers With ⁵						
No Passengers	0.8%	100%	0.8%	100%	0.0	9%
At Least One Passenger	0.2%	100%	0.2%	100%	0.0	15%
Drivers With ⁵						
No Passengers	0.8%	100%	0.8%	100%	0.0	9%
Passengers All Under Age 8	0.6%	58%	0.7%	64%	0.1	12%
Passengers All 8 and Older	0.1%	100%	0.2%	100%	0.1	43%
Some Passengers Under 8 and Some 8 or Older	0.3%	98%	NA	NA	NA	NA

¹ Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.

² The percent of drivers wearing a headset with a microphone and speaking, based on the subjective assessments of roadside observers.

³ The statistical confidence that use in the driver group (e.g., white drivers) is higher or lower than use in the corresponding complementary driver group (e.g., combined black or other drivers). Confidences that meet or exceed 90 percent are formatted in boldface type. Confidences are rounded to the nearest percentage point, and so confidences reported as "100 percent" are between 99.5 percent and 100.0 percent.

⁴ The degree of statistical confidence that the 2009 use rate is different from the 2008 rate. Confidences that meet or exceed 90 percent are formatted in boldface type.

⁵ Among passengers observed in the right front seat and the second row of seats (but NOPUS only counts up to two passengers in the second row and none in the third row and beyond).

⁶ Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

NA: Data not sufficient to produce a reliable estimate.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis

Table 3

The Percentage of Drivers Visibly Manipulating Hand-Held Devices While Driving, by Major Characteristics

Driver Group ¹	2008		2009		2008-2009 Change	
	% of Drivers Manipulating Hand-Held Devices ²	Confidence That Use Is High or Low in Group ³	% of Drivers Manipulating Hand-Held Devices ²	Confidence That Use Is High or Low in Group ³	Difference in Percentage Point Tenth ⁴	Confidence in a Change in % of Drivers Manipulating Hand-Held Devices ⁴
All Drivers ⁶	1.0%		0.6%		-0.4	91%
Males	0.8%	100%	0.5%	99%	-0.3	89%
Females	1.2%	100%	0.7%	99%	-0.5	91%
Drivers by Age Group ⁶						
Age 16-24	1.7%	100%	1.1%	99%	-0.6	82%
Age 25-69	0.9%	99%	0.5%	86%	-0.4	87%
Age 70 and Older	0.4%	100%	NA	NA	NA	NA
Drivers by Race ⁶						
White	1.0%	57%	0.5%	90%	-0.5	96%
Black	0.8%	91%	1.2%	95%	0.4	61%
Other Races	1.2%	87%	0.5%	59%	-0.7	92%
Drivers on						
Expressway Exit Ramps	0.8%	96%	0.5%	74%	-0.3	73%
Other Surface Streets	1.1%	96%	0.6%	74%	-0.5	93%
Drivers Traveling Through						
Light Precipitation	0.8%	62%	0.5%	71%	-0.3	44%
Fog	NA	NA	NA	NA	NA	NA
Clear Weather Conditions	1.0%	66%	0.6%	76%	-0.4	91%
Drivers of						
Passenger Cars	1.0%	74%	0.5%	75%	-0.5	95%
Vans and SUVs	1.1%	94%	0.7%	97%	-0.4	78%
Pickup Trucks	0.6%	99%	0.4%	99%	-0.2	74%
Drivers in						
Northeast	0.4%	99%	0.4%	91%	0.0	6%
Midwest	0.8%	68%	0.2%	99%	-0.6	74%
South	0.5%	98%	1.0%	94%	0.5	84%
West	2.1%	99%	0.5%	60%	-1.6	98%
Drivers Traveling During						
Weekdays	1.1%	100%	0.7%	97%	-0.4	89%
Rush Hours	1.2%	57%	0.8%	96%	-0.4	63%
Nonrush Hours	1.1%	57%	0.6%	96%	-0.5	98%
Weekends	0.6%	100%	0.4%	97%	-0.2	72%
Drivers With ⁵						
No Passengers	1.3%	100%	0.8%	100%	-0.5	87%
At Least One Passenger	0.4%	100%	0.2%	100%	-0.2	96%
Drivers With ⁵						
No Passengers	1.3%	100%	0.8%	100%	-0.5	87%
Passengers All Under Age 8	1.5%	100%	0.5%	69%	-1.0	100%
Passengers All 8 and Older	0.3%	100%	0.1%	100%	-0.2	92%
Some Passengers Under 8 and Some 8 or Older	0.3%	100%	NA	NA	NA	NA

¹ Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 7 a.m. and 6 p.m.² The percent of drivers manipulating hand-held devices, based on the subjective assessments of roadside observers.³ The statistical confidence that use in the driver group (e.g., white drivers) is higher or lower than use in the corresponding complementary driver group (e.g., combined black or other drivers). Confidences that meet or exceed 90 percent are formatted in boldface type. Confidences are rounded to the nearest percentage point, and so confidences reported as "100 percent" are between 99.5 percent and 100.0 percent.⁴ The degree of statistical confidence that the 2009 use rate is different from the 2008 rate. Confidences that meet or exceed 90 percent are formatted in boldface type.⁵ Among passengers observed in the right front seat and the second row of seats (but NOPUS only counts up to two passengers in the second row and none in the third row and beyond).⁶ Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

NA: Data not sufficient to produce a reliable estimate.

Data Source: NOPUS, NHTSA's National Center for Statistics and Analysis

devices in a given driver group, e.g., drivers in the Northeast, is higher or lower than in the complementary driver group, e.g., combined drivers in the Midwest, in the South and in the West, are provided in columns 3 and 5. Such comparisons are made within categories delineated by changes in row shading in the tables. The exception to this is the grouping "Drivers Traveling During...," in which weekdays are compared to weekends, and weekday rush hour to weekday non-rush hour.

Table 4 shows the observed sample sizes of the 2009 NOPUS. A total of 49,475 vehicles were observed at the 1,496 data collection sites. Due to ineligibility, construction, danger in the area, or road closure, the observations could not be completed at some of the sampled observation sites.

**Table 4
Sites and Vehicles Observed in the 2009 NOPUS**

Number of	2008	2009	Percentage Change
Sites Observed	1,504	1,496	-1%
Vehicles Observed	55,199	49,475	-10%

NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2009 NOPUS continued the transition to the newly designed sample of observation sites, which was implemented in 2006. The 2009 results reflect the incorporation of additional observation sites from the new design and a further reduction of observation sites from the old design. Data from 2005 and prior years were obtained from the old observation sites only.

Data collection, estimation, and variance estimation for NOPUS are conducted by Westat, Inc., under the direction of NHTSA's National Center for Statistics and Analysis under Federal contract number DTNH22-07-D-00057.

NOPUS Categories and Definitions

NOPUS observes three types of driver electronic device use while driving: "holding phones to their ears," "speaking with visible headsets on," and "visibly manipulating hand-held devices."

Drivers are counted as "holding phones to their ears" if they are holding to their ears what appear to be phones to the data collectors. This would include behaviors such as drivers engaging in conversation, listening to messages, or conducting voice-activated dialing while holding phones to their ears. However, a data collector may not have knowledge of various types of wireless phones. Thus, the device that has been identified as a "phone" may only reflect the collector's conception of what constitutes a "phone." Also, the corded car phones and satellite phones may or may not have been identified as "phones." With the increasing popularity of PDAs and smart phones, BlackBerry phones and iPhones would most likely be identified as phones.

Drivers are counted as "speaking with visible headsets on" if they appear to be speaking and wearing a headset with a microphone. This would include behaviors such as talking, engaging in conversation, or conducting voice-activated dialing via a wireless earpiece on the driver's right ear or via an ear bud connected by wire to a cell phone. Talking via a visible Bluetooth headset (usually on the driver's right ear) would also be included in this category. However, it would not include drivers using headsets that do not involve cell phones (e.g., iPods), since these headsets do not involve microphones. Note that the wireless earpieces that are obscured by hair or clothing or are on the driver's left ear would not be included because they would not be visible to the roadside observer. In addition, some wireless ear buds would not be included as they are too small to be observed from the roadside. The drivers with headsets who are not speaking at the time of observation are not included because they might have recently completed a call or be waiting for an expected call. Each driver in the survey is observed for about 10 seconds before the data collector decides whether or not the driver is speaking. Also, note that the drivers counted as speaking through a visible headset might have been talking to a passenger or using voice-activated computer software rather than using a phone.

Drivers are counted as "visibly manipulating hand-held devices" if they appear to be manipulating some type of electronic device such as a cell phone, a smart phone, PDA, video game, or some other device. This would include behaviors such as text messaging, using a Web-capable smart phone (e.g., an iPhone) or a PDA (e.g., a BlackBerry phone) to view travel directions, check e-mails or calendar appointments, or surf the Internet, manual dialing, playing hand-held games, and holding phones in front of their face to converse or check messages via speakerphone or use voice-activated dialing. Manipulation of the non-hand-held devices (adjusting volume on stereos, pressing buttons on a dashboard GPS unit, etc.) is not included in this category. Also, note that a driver characterized by the survey as "manipulating hand-held devices" may or may not have been speaking.

There are means by which the drivers can use cell phones that would neither be recorded as "holding phones to their ears" nor as "speaking with visible headsets on" or as "visibly manipulating hand-held devices" in the NOPUS. These would include but not be limited to: (1) a driver using a cell phone headset but is not speaking during the approximately 10-second period when he/she is being observed, and (2) a driver using technologies that cannot be observed from the roadside. The unobservable technologies would include a wireless earpiece obscured by hair or clothing or on the left ear, a driver conversing via a speakerphone with the phone on the passenger seat or in a cell phone holder on the vehicle dashboard, a driver using a phone that is built into the vehicle (e.g., OnStar), and a driver using the cell phone hands-free via a Bluetooth car kit or via a Bluetooth system that is built

into the vehicle (e.g., Sync). It is possible that at some point in the future, NOPUS may be able to capture such behaviors by directing a device that can detect cell phones in use in the passing vehicles.

The racial categories “Black,” “White,” and “Other Races” appearing in the tables reflect subjective characterizations by roadside observers regarding the race of occupants. Likewise observers record the age group (8-15 years; 16-24 years; 25-69 years; and 70 years or older) that best fits their visual assessment of each observed occupant.

“Expressway Exit Ramps” are defined as the access roads from roadways with limited access, while “Other Surface Streets” comprise all other roadways.

“Weekday Rush Hours” are defined to be from 7 a.m. to 9:30 a.m. and from 3:30 p.m. to 5 p.m. on weekdays, while “Weekday Nonrush Hours” comprise all other weekday hours (9:30 a.m. to 3:30 p.m. and 5 p.m. to 6 p.m.).

Since NOPUS is not a census and is based on a probability sample, it is impossible to produce State-by-State driver electronic device use results. However NOPUS produces regional estimates of the use rates based on the following categories:

- **Northeast:** ME, VT, NH, MA, RI, CT, NY, PA, NJ
- **Midwest:** MI, OH, IN, IL, WI, MN, IA, MO, KS, NE, SD, ND
- **South:** WV, MD, DE, VA, KY, TN, NC, SC, GA, FL, AL, MS, AR, LA, OK, TX, DC
- **West:** AK, WA, OR, CA, NV, ID, UT, AZ, NM, CO, WY, MT, HI

Estimating Drivers on Road and Hands-Free Cell Phone Users

2009 estimate of the total number of vehicles (drivers) on road at a typical daylight moment

In the past few years, some complex extrapolations have been used to derive the estimate based on the trip characteristics in 1995 and 2001 from the 1995 National Personal Travel Survey and the 2001 National Household Travel Survey (NHTS). Since the U.S. Department of Transportation has not conducted a NHTS survey during the period from 2002 to 2008, the extrapolations based on the 1995 and 2001 data is the best possible option to obtain this estimate. For more details on the 1995 and 2001 trip characteristics and related discussions on the extrapolations, please refer to NHTSA’s technical report, “Cell Phone Use on the Roads in 2002,” at <http://www-nrd.nhtsa.dot.gov/Pubs/809580.PDF>. For the year of 2009, however, the 2009 NHTS data can be used conveniently to derive the total number of vehicles (drivers) on the road at a typical daylight moment in the United States in 2009.

The following estimates in Table 5 have been computed (in May 2010) with the online analysis tools for the 2009 NHTS

data available at <http://nhts.ornl.gov/tools.shtml>. To be consistent with the current NOPUS definition, a daytime trip is defined to be a trip starting between 7 a.m. and 6 p.m. with nighttime trips being those trips that start during other times. Since most trips are relatively short in duration (about 15 to 20 minutes), such trips correspond roughly to trips that occur during daylight hours. Before 2007, NOPUS data collection started at 8 a.m. instead of 7 a.m. and accordingly daytime trips had been defined as trips starting between 8 a.m. and 6 p.m. in our previous estimation of trip characteristics from NHTS data.

Table 5
Trip Characteristics in 2009, by Time of Day

Characteristics of Privately Owned Vehicles	Daytime ¹	Nighttime ¹	All Times of Day/Night
Average number of trips per day, in millions	477	147	624
Average length of trip, in minutes	19	20	19
Total duration of trips per day, in millions of hours	147	50	197
Average length of trip, in miles	10	12	10
Total length of trips per day, in millions of miles	4,589	1,709	6,299
Average number of vehicles (drivers) on the road at any given time	13,399,139	3,820,099	8,210,575

¹ A daytime trip is defined to be a trip starting between 7 a.m. and 6 p.m., with nighttime trips being those trips that start during other times

Data Source: The 2009 National Household Travel Survey, U.S. Department of Transportation

The populations of vehicles covered by the NHTS and NOPUS surveys are slightly different. The former covers privately owned vehicles, while the latter passenger vehicles with no commercial or government markings. A privately owned taxi cab will be counted in NHTS but not in NOPUS, while an unmarked company car will be surveyed in NOPUS but not in NHTS. However, in most cases, these two surveys should capture the same set of vehicles.

The results in Table 5 show that about 13,400,000 drivers of privately owned vehicles were on the road at a typical daylight moment in the U.S. in 2009. Since NOPUS estimates that the driver hand-held cell phone use rate in 2009 was about 5 percent, the estimated total number of drivers using hand-held cell phones would be 672,000 ($=134,000,000 \times 0.05$). Thus, an estimated 672,000 vehicles were driven by people using hand-held cell phones at a typical daylight moment in the United States in 2009.

2009 estimates of the hands-free cell phone use and all cell phone use (both hand-held and hands-free)

NHTSA’s 2007 Motor Vehicle Occupant Safety Survey (MVOSS) estimated that, for drivers using cell phones while driving, 55 percent tended to use hand-held cell phones

and 45 percent tended to use hands-free phones. Applying the proportion 0.8182 (=45/55) of these percentages to the 5 percent estimate of drivers using hand-held cell phones in 2009 from NOPUS shows an estimated 4 percent of drivers using hands-free cell phones. Thus, 9 percent of drivers are estimated to be using either a hand-held or hands-free cell phone while driving in a typical daylight moment in the United States in 2009. Please note that MVOSS cell phone use pattern (hand-held versus hands-free) reflects general times (daytimes and nighttimes) whereas the NOPUS estimates reflect daytime use only.

State Laws on Driver Electronic Device Use (Enacted As of July 2010)

Many States restrict cell phone use by drivers. As of July 2010, no State completely bans all forms of cell phone use by drivers. However, a ban on driving while talking on a hand-held cell phone was in place in 8 States (California, Connecticut, Delaware¹, Maryland, New Jersey, New York, Oregon, and Washington), the District of Columbia, and the Virgin Islands (Table 6). All of these laws except Maryland's are primary enforcement—an officer may cite a driver for using a hand-held cell phone without any other traffic offense taking place. Maryland's secondary enforcement law banning handheld cell phone use by drivers will take effect in October 2010. Thirty States, the District of Columbia, and Guam ban text messaging for all drivers (Table 7). In 26 States, the District of Columbia, and Guam, texting laws are primary enforcement, and in the other four States these laws only permit secondary enforcement. Many States also ban cell phone use and/or texting by novice drivers or school bus drivers.

Some States such as Maine, New Hampshire, and Utah treat cell phone use and texting as part of a larger distracted driving issue. In Utah cell phone use is an offense only if a driver is also committing some other moving violation (other than speeding).

NHTSA's Policy Statement on Distracted Driving

NHTSA's policy statement on distracted driving is:

"The primary responsibility of the driver is to operate a motor vehicle safely. The task of driving requires full attention and focus. Drivers should resist engaging in any activity that takes their eyes and attention off the road for more than a couple of seconds. In some circumstances even a second or two can make all the difference in a driver being able to avoid a crash."

"Cell phone use can distract drivers, risking harm to themselves and others. Therefore, the safest course of action is to refrain from using a cell phone while driving, which

**Table 6
States With Laws Banning Hand-Held Cell Phone Use While Driving**

California	Connecticut	Delaware	Maryland	New Jersey
New York	Oregon	Washington	District of Columbia	Virgin Islands

**Table 7
States With Laws Banning Text-Messaging While Driving**

Alaska	Arkansas	California	Colorado	Connecticut
Delaware	Georgia	Illinois	Iowa	Kansas
Kentucky	Louisiana	Maryland	Massachusetts	Michigan
Minnesota	Nebraska	New Hampshire	New Jersey	New York
North Carolina	Oregon	Rhode Island	Tennessee	Utah
Vermont	Virginia	Washington	Wisconsin	Wyoming
District of Columbia	Guam			

includes talking, dialing, and texting. NHTSA recommends that States prohibit novice drivers from using electronic communication devices (including cell phones) during the learners and intermediate stages of a three-stage graduated driver license (GDL) program."

More details about the agency's policy can be found on www.nhtsa.gov as well as on www.distraction.gov.

For More Information

This Research Note was written by Timothy M. Pickrell, mathematical statistician in the Mathematical Analysis Division, National Center for Statistics and Analysis, NHTSA, and by Tony Jianqiang Ye, a contractor working with the Mathematical Analysis Division, National Center for Statistics and Analysis, NHTSA. For questions regarding the information presented in this document, please contact timothy.pickrell@dot.gov.

Additional data and information on the survey design and analysis procedures will be available in upcoming publications to be posted at the Web site <http://www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx> in 2010.



U.S. Department
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**National Highway
Traffic Safety
Administration**

This research note and other general information on highway traffic safety may be accessed by Internet users at: www-nrd.nhtsa.dot.gov/CATS/index.aspx

¹ Delaware enacted a statewide ban on hand-held cell phone use, effective January 2, 2011.