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Research Note

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Driver Cell Phone Use in 2006 — Overall Results

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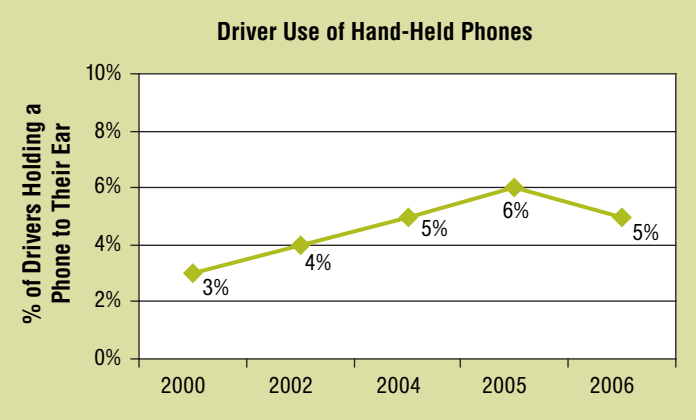
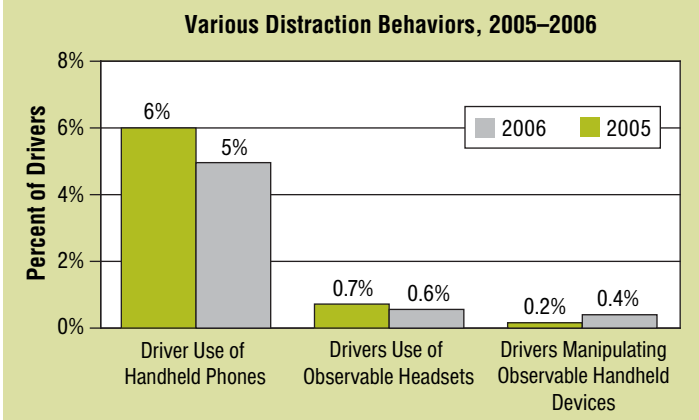
Driver hand-held cell phone use decreased to 5 percent in 2006 compared to 6 percent in 2005. This downturn in hand-held cell phone use is the first since the National Highway Traffic Safety Administration began estimating driver cell phone use in 2000 through its National Occupant Protection Use Survey (NOPUS). The 2006 NOPUS also found that the incidence of drivers speaking with observable* headsets on remained unchanged, while the incidence of observable* hand-held device manipulation while driving increased to 0.4 percent in 2006 from 0.2 percent in the previous year. However, the lack of up-to-date data to extrapolate NOPUS observed data to total cell phone use precludes an accurate estimation of overall driver cell phone use. In the past, we had projected the total hands-free use and total cell phone use among all drivers based on 2003 cell phone use data from other sources. This research note will not make such a projection for the year of 2006 with the outdated data but we will do it in the future as updated data become available.

The 2006 hand-held phone use rate translates into 745,000 vehicles on the road at any given daylight moment being driven by someone talking on a hand-held phone. The decline in use occurred in a number of driver categories, including female drivers, drivers in the Midwest, drivers age 25 to 69, drivers of passenger cars, drivers in both urban and suburban areas, drivers on weekdays, and drivers driving alone.

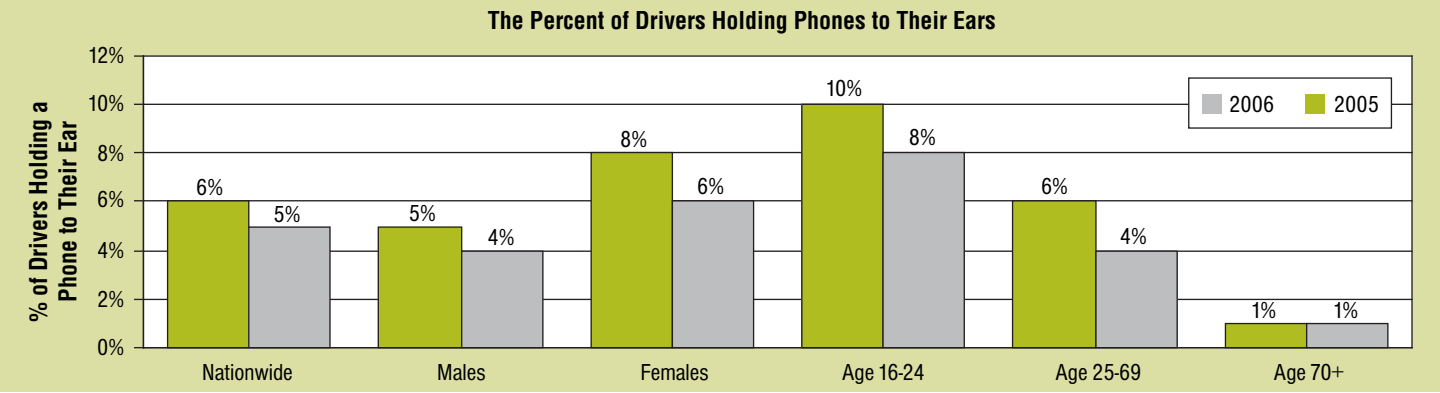
The NOPUS is conducted annually by NHTSA's National Center for Statistics and Analysis. It provides the only probability-based observed data on driver cell phone use in the United States.



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2000-2006



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2005-2006



Source: National Occupant Protection Use Survey, NHTSA's National Center for Statistics and Analysis, 2005-2006

* Headset use or hand-held device manipulation that can be observed by NOPUS data collectors from the roadside.

The Percent of Drivers Holding Phones to Their Ears, by Major Characteristics

Driver Group[1]	2005		2006		2005-2006 Change	
	% of Drivers Holding Phone to Ear[2]	Confidence That Use Is High or Low in Group[3]	% of Drivers Holding Phone to Ear[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%		5%		-1	**97%**
Males	5%	**100%**	4%	**100%**	-1	83%
Females	8%	**100%**	6%	**100%**	-2	**99%**
Drivers Who Appear to Be						
Age 16-24	10%	**100%**	8%	**100%**	-2	80%
Age 25-69	6%	**95%**	4%	**96%**	-2	**97%**
Age 70 and Older	1%	**100%**	1%	**100%**	0	66%
Drivers Who Appear to Be						
White	6%	53%	5%	66%	-1	**97%**
Black	6%	50%	5%	64%	-1	65%
Members of Other Races	6%	53%	4%	86%	-2	87%
Drivers on						
Expressway Exit Ramps	7%	81%	5%	77%	-2	**99%**
Other Surface Streets	6%	81%	5%	77%	-1	88%
Drivers Traveling Through						
Light Precipitation	6%	72%	5%	67%	-1	24%
Fog	6%	58%	5%	60%	-1	24%
Clear Weather Conditions	6%	71%	5%	65%	-1	**97%**
Drivers of						
Passenger Cars	6%	59%	4%	**94%**	-2	**99%**
Vans & SUVs	7%	82%	6%	**97%**	-1	82%
Pickup Trucks	5%	**91%**	5%	63%	0	42%
Drivers in the						
Northeast	4%	**100%**	4%	**99%**	0	28%
Midwest	8%	**92%**	4%	77%	-4	**100%**
South	5%	**97%**	5%	89%	0	25%
West	8%	**92%**	5%	89%	-3	86%
Drivers in						
Urban Areas	7%	71%	5%	66%	-2	**97%**
Suburban Areas	7%	**98%**	5%	**97%**	-2	**98%**
Rural Areas	3%	**100%**	4%	**95%**	1	33%
Drivers Traveling During						
Weekdays	7%	**100%**	5%	**100%**	-2	**90%**
Rush Hours	8%	**95%**	6%	**91%**	-2	86%
Nonrush Hours	6%	**95%**	5%	**91%**	-1	67%
Weekends	4%	**100%**	3%	**100%**	-1	72%
Drivers With[5]						
No Passengers	8%	**100%**	6%	**100%**	-2	**97%**
At Least One Passenger	2%	**100%**	2%	**100%**	-0	**93%**
Drivers With[5]						
No Passengers	8%	**100%**	6%	**100%**	-2	**97%**
Passengers All Under Age 8	6%	56%	6%	70%	0	31%
Passengers All Age 8 and Older	2%	**100%**	1%	**100%**	-1	**96%**
Some Passengers Under Age 8 and Some Age 8 or Older	2%	**100%**	2%	**100%**	0	18%

[1] Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 8 a.m. and 6 p.m.

[2] The percent of drivers who appeared to be holding a phone to their ears. Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

[3] The level of statistical confidence that use in the driver group (e.g., drivers who appear to be White) is higher or lower than use in the corresponding complementary driver group (e.g., combined drivers who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

[4] The degree of statistical confidence that the 2006 use rate is different from the 2005 rate.

[5] Among passengers observed in the right-front seat and the second row of seats.

Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

The Percent of Drivers Speaking With Observable Headsets On, by Major Characteristics

Driver Group[1]	2005		2006		2005-2006 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 Tenths	Confidence in a Change in % of Drivers Speaking With Headsets[4]
All Drivers	0.7%		0.6%		-0.1	43%
Males	0.7%	75%	0.4%	**98%**	-0.3	72%
Females	0.6%	75%	0.8%	**98%**	0.2	70%
Drivers Who Appear to Be						
Age 16-24	1.3%	90%	0.7%	72%	-0.6	61%
Age 25-69	0.6%	77%	0.6%	55%	0.0	26%
Age 70 and Older	NA	NA	0.3%	**98%**	NA	NA
Drivers Who Appear to Be						
White	0.6%	82%	0.5%	63%	-0.1	25%
Black	1.3%	81%	0.8%	80%	-0.5	33%
Members of Other Races	0.7%	54%	0.5%	64%	-0.2	38%
Drivers on						
Expressway Exit Ramps	0.9%	76%	0.8%	90%	-0.1	8%
Other Surface Streets	0.6%	76%	0.5%	90%	-0.1	26%
Drivers Traveling Through						
Light Precipitation	0.4%	**91%**	0.7%	67%	0.3	62%
Fog	NA	NA	NA	NA	NA	NA
Clear Weather Conditions	0.7%	**92%**	0.6%	51%	-0.1	53%
Drivers of						
Passenger Cars	0.7%	57%	0.5%	83%	-0.2	42%
Vans and SUVs	1.0%	**92%**	0.7%	**94%**	-0.3	57%
Pickup Trucks	0.3%	**99%**	0.4%	75%	0.1	53%
Drivers in the						
Northeast	0.9%	75%	0.6%	59%	-0.3	73%
Midwest	1.7%	**99%**	0.5%	52%	-1.2	85%
South	0.4%	**96%**	0.6%	56%	0.2	56%
West	0.3%	**98%**	0.5%	65%	0.2	52%
Drivers in						
Urban Areas	0.9%	69%	0.4%	88%	-0.5	56%
Suburban Areas	0.7%	57%	0.6%	89%	-0.1	14%
Rural Areas	0.5%	88%	0.5%	72%	0.0	6%
Drivers Traveling During						
Weekdays	0.8%	**100%**	0.7%	**98%**	-0.1	38%
Rush Hours	0.8%	55%	0.7%	59%	-0.1	20%
Nonrush Hours	0.8%	55%	0.6%	59%	-0.2	37%
Weekends	0.2%	**100%**	0.3%	**98%**	0.1	80%
Drivers With[5]						
No Passengers	0.8%	**95%**	0.8%	**100%**	0.0	20%
At Least One Passenger	0.4%	**95%**	0.1%	**100%**	-0.3	74%
Drivers With[5]						
No Passengers	0.8%	**95%**	0.8%	**100%**	0.0	20%
Passengers All Under Age 8	1.0%	78%	0.3%	**96%**	-0.7	87%
Passengers All Age 8 and Older	0.3%	**98%**	0.1%	**100%**	-0.2	58%
Some Passengers Under Age 8 and Some Age 8 or Older	NA	NA	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 8 a.m. and 6 p.m.

[2] The percent of drivers who appeared to be wearing a headset with a microphone and speaking. Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

[3] The level of statistical confidence that use in the driver group (e.g., drivers who appear to be White) is higher or lower than use in the corresponding complementary driver group (e.g., combined drivers who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

[4] The degree of statistical confidence that the 2006 use rate is different from the 2005 rate.

[5] Among passengers observed in the right front seat and the second row of seats.

NA: Data not sufficient to produce a reliable estimate.

Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

The Percent of Drivers Manipulating Observable Hand-Held Devices, by Major Characteristics

Driver Group[1]	2005		2006		2005-2006 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 Tenths	Confidence in a Change in % of Drivers Manipulating Hand-Held Devices[4]
All Drivers	0.2%		0.4%		0.2	**99%**
Males	0.1%	90%	0.3%	**93%**	0.2	**96%**
Females	0.2%	90%	0.6%	**93%**	0.4	**99%**
Drivers Who Appear to Be						
Age 16-24	0.3%	89%	0.4%	51%	0.1	56%
Age 25-69	0.1%	77%	0.5%	87%	0.4	**100%**
Age 70 and Older	NA	NA	NA	NA	NA	NA
Drivers Who Appear to Be						
White	0.2%	62%	0.5%	75%	0.3	**98%**
Black	0.1%	**96%**	0.5%	66%	0.4	**97%**
Members of Other Races	0.2%	61%	0.2%	**99%**	0.0	7%
Drivers on						
Expressway Exit Ramps	0.1%	60%	0.5%	70%	0.4	**99%**
Other Surface Streets	0.2%	60%	0.4%	70%	0.2	**98%**
Drivers Traveling Through						
Light Precipitation	0.3%	86%	0.4%	61%	0.1	14%
Fog	NA	NA	NA	NA	NA	NA
Clear Weather Conditions	0.1%	79%	0.5%	78%	0.4	**100%**
Drivers of						
Passenger Cars	0.2%	52%	0.4%	55%	0.2	**99%**
Vans and SUVs	0.2%	77%	0.5%	69%	0.3	**96%**
Pickup Trucks	0.1%	**91%**	0.3%	79%	0.2	87%
Drivers in the						
Northeast	0.3%	75%	0.6%	84%	0.3	82%
Midwest	0.1%	65%	0.4%	51%	0.3	**99%**
South	0.2%	58%	0.4%	73%	0.2	88%
West	0.1%	75%	0.4%	59%	0.3	77%
Drivers in						
Urban Areas	0.1%	61%	0.5%	63%	0.4	**94%**
Suburban Areas	0.2%	64%	0.5%	77%	0.3	**98%**
Rural Areas	0.1%	55%	0.3%	**94%**	0.2	53%
Drivers Traveling During						
Weekdays	0.2%	62%	0.5%	**99%**	0.3	**100%**
Rush Hours	0.1%	**97%**	0.5%	63%	0.4	**100%**
Nonrush Hours	0.2%	**97%**	0.6%	63%	0.4	**96%**
Weekends	0.2%	62%	0.2%	**99%**	0.0	40%
Drivers With[4]						
No Passengers	0.2%	**100%**	0.5%	**96%**	0.3	**97%**
At Least One Passenger	0.0%	**100%**	0.3%	**96%**	0.3	**100%**
Drivers With[4]						
No Passengers	0.2%	**100%**	0.5%	**96%**	0.3	**97%**
Passengers All Under Age 8	NA	NA	NA	NA	NA	NA
Passengers All Age 8 and Older	0.0%	**100%**	0.2%	**98%**	0.2	**97%**
Some Passengers Under Age 8 and Some Age 8 or Older	NA	NA	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 8 a.m. and 6 p.m.

[2] The percent of drivers who appeared to be manipulating some type of electronic device, whether a cell phone, video game, or other device. Age, gender, and racial classifications are based on the subjective assessments of roadside observers.

[3] The level of statistical confidence that use in the driver group (e.g., drivers who appear to be White) is higher or lower than use in the corresponding complementary driver group (e.g., combined drivers who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100.0 percent.

[4] Among passengers observed in the right-front seat and the second row of seats.

NA: Data insufficient to form a reliable estimate.

Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Occupant Protection Use Survey (NOPUS) is the only probability-based observational survey of driver cell phone use in the United States. The survey observes usage as it actually occurs at a random selection of roadway sites, and so provides the best tracking of the extent to which people in this country are using cell phones while driving.

Sites and Vehicles Observed

Numbers of	2005	2006	Percentage Change
Sites Observed	1,200	1,200	0%
Vehicles Observed	43,000	43,000	0%

The survey data is collected by sending trained observers to probabilistically sampled intersections controlled by a stop sign or stoplight, where vehicle occupants are observed from the roadside. Data is collected between the hours of 8 a.m. and 6 p.m. Only stopped vehicles are observed to permit time to collect the 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 the NOPUS can capture the untainted behavior of occupants. The 2006 NOPUS data was collected between June 5 and June 26, while the 2005 data was collected between June 6 and June 25, 2005.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant increases in the use of hand-held phones (respectively, headset use or manipulation of hand-held devices) between 2005 and 2006 are identified in the tables of hand-held use estimates (respectively, headset use estimates or the percent of drivers manipulating devices) by having a result that is 90 percent or greater in column 7. Statistical confidence levels that hand-held use, headset use, or the manipulation of hand-held 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 nonrush hour.

As we will discuss in much more detail later in the definition section, some cell phone use, such as hands-free cell phone use via a Bluetooth car kit or drivers using wireless earpieces obscured by hair or clothing or on their left ears, could not be observed from the roadside and thus would not be captured by NOPUS. In our published NOPUS results for earlier years, we had derived the estimates on the number of drivers using cell phones and the percent of drivers using cell-phones hands-free based on some 2003 cell phone use data from other sources.[1] This research note will not use the outdated data to extrapolate the NOPUS observed data to total cell phone use among all drivers in 2006. However, we will resume such projection in the future as updated data become available.

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2006 survey results reflect the partial incorporation of a new set of probabilistically-designed observation sites. Specifically, the 2006 survey utilized half of the observation sites from the previous survey years and half of the sites from the newly designed sample of observation sites. The 2005 data was obtained from the old observation sites only.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis under Federal contract number DTNH22-05-D-01002.

Definitions

Drivers were counted as "holding phones to their ears" if they were holding to their ears what appeared to the observer to be a phone. This would include such behaviors as drivers engaged in conversation, listening to messages, or conducting voice-activated dialing while holding a phone to their ears. Note that PDAs such as Blackberrys would count as phones.

Drivers were counted as "speaking with headsets on" if they appeared to be speaking and wearing a headset with a microphone. This would include such behaviors as talking in conversation or conducting voice-activated dialing via a wireless earpiece on the driver's right ear or via an earbud connected by wire to a cell phone. It would not include drivers using headsets that do not involve cell phones (such as iPods) since these headsets do not involve microphones. Note that 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 earbuds would not be included as they are too small to be observed from the roadside. Drivers with headsets who were not speaking at the time of observation were not included because they might not have, e.g., recently completed a call or be waiting for an expected call. We estimate that each driver in the survey was observed for about 10 seconds before the data collector decided whether or not the driver was speaking. Note also that drivers counted as speaking with a headset on might have been talking to a passenger or using voice-activated computer software rather than using a phone.

[1] See Boyle & Vanderwolf (2003), Stutts et al (2003) and the Department of Transportation's National Household Survey.

Drivers were counted as "manipulating hand-held devices" if they appeared to be manipulating some type of electronic device, whether a cell phone, PDA, video game, or other device. This would include such behaviors as: manual dialing; text messaging; using a Web-capable cell phone or a PDA (such as a Blackberry) to view travel directions, check e-mails or calendar appointments, or surf the Internet; 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 non-hand-held devices (adjusting volume on stereos, pressing buttons on a dashboard GPS unit, etc) was not included. Also note that a driver characterized by the survey as "manipulating hand-held devices" might or might not have been speaking.

We note that there are means by which drivers can use cell phones that would neither be recorded as "holding phones to their ears" nor as "speaking with headsets on" nor as "manipulating hand-held devices" in the NOPUS. These would include: (1) a driver using a cell phone headset who is not speaking during the approximately 10 seconds the driver is observed, and (2) a driver using technologies that cannot be observed from the roadside. Such technologies would include: a driver using 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 (such as 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 (such as 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 at 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' recorded the age group (8-15 years; 16-24 years; 25-69 years; and 70 years or older) that best fit 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.

States With Laws Banning Hand-Held Cell Phone Use While Driving[1]

New York	New Jersey	District of Columbia	Connecticut

[1] States with laws in effect as of June 30, 2006. Also includes DC. Connecticut enacted a law that took effect in October 2005. In no other States did such laws take effect during the period June 30, 2005 – June 30, 2006.

Driver cell phone use is largely unrestricted by State laws. No States ban use outright. Currently, three States and the District of Columbia ban the use of hand-held phones while driving. One of these bans took effect in 2001 (New York), two in 2004 (New Jersey in May 2004 and DC in July 2004), and one in 2005 (Connecticut). A small number of States otherwise restrict the manner of use, e.g., by requiring sound to travel unimpaired to at least one of the driver's ears or requiring at least one hand on the steering wheel at all times. A few States ban use in certain situations, such as when operating a school bus or public transit vehicle. In addition, some major cities have hand-held bans or otherwise restrict use.

Driving while using a headset is even less restricted by traffic laws. No States or major cities ban use outright. As with driver cell phone use, a small number of States restrict the manner of use, e.g., by requiring sound to travel unimpaired to at least one of the driver's ears, or ban certain types of use in certain situations, such as by banning cell phone use (whether hand-held or hands-free) when operating a school bus or public transit vehicle.

NHTSA's policy on using cell phones while driving is conveyed in the following statements from www.nhtsa.gov: "The primary responsibility of the driver is to operate a motor vehicle safely. The task of driving requires full attention and focus. Cell phone use can distract drivers from this task, risking harm to themselves and others. Therefore, the safest course of action is to refrain from using a cell phone while driving." More information on the agency's policy can be found on this Web site.

For More Information

Detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, will be available in upcoming publications to be posted at the Web site www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html in 2007.

References

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