

# Mobile Phone Safety

## HIGHLIGHTS:

- Dialing and talking while driving
- Hands-free cell phone use is more distracting and potentially more dangerous than having a conversation with passengers
- Guidelines for safe mobile phone use

The sight of a driver talking on a mobile phone has been common for some years now. The Cellular Telecommunications and Internet Association estimates that more than 322 million people now use wireless services, an increase of greater than 100% since 2007.

The advantages are clear: users can make and confirm appointments, revise schedules and continue working while driving or waiting in traffic. Perhaps more importantly, mobile phones let motorists report accidents or other traffic emergencies immediately. At the same time, cell phone technology has allowed users to take and receive photos, browse the Internet, check economic indicators, play games, etc.

Unfortunately, research shows that the downside of mobile phone use in a vehicle is that it distracts the driver and increases the risk of unsafe driving behaviors and/or a crash.

A Liberty Mutual Research Institute for Safety study published in 2009 concluded that "...research suggests that drivers' perceptions of distraction effects are not well-calibrated with actual performance while distracted".<sup>1</sup> In other words, drivers underestimate their own level of distraction.

Subsequent additional research has examined several other aspects of in-vehicle phone use.

**Dialing:** One study confirmed that dialing a phone while driving can significantly impair vehicle control.<sup>2</sup> Manual dialing with a console-mounted phone caused the most impairment. Dialing a dash-mounted phone had a lesser effect, comparable to tuning a radio. Drivers over the age of 55 were more affected than younger drivers.

This study further concluded that simply holding a handset may interfere with vehicle control, especially in unexpected driving situations. Based on these findings, the researchers recommended locating the phone within the driver's line of vision and cautioned drivers not to refer to printed telephone lists while driving.

**Talking:** Several studies have considered the more complicated problem of distraction while talking on a vehicle phone. Although phone use does not appear to impair routine vehicle control skills, it does have an adverse effect on perceptual judgment, such as the ability to judge whether your vehicle will fit through a gap.<sup>3</sup> Performance impairment is also related to the complexity of the phone conversation.<sup>4</sup>



In the same study, simulations of complex businesslike calls were most detrimental to the driver's ability to identify hazardous situations and respond quickly. Drivers over the age of 50 were two to three times more distracted by all aspects of phone use than younger drivers.

**Actual Driving:** The Virginia Tech Transportation Institute (VTTI) completed a Naturalistic Study involving placement of cameras and instrumentation in participants' vehicles in 2009 to provide a clear picture of driver distraction and cell phone use under real-world driving conditions. The Institute found that drivers dialing the phone were 2.3 times more likely to have a crash than non-distracted drivers. More alarming, they found that commercial drivers texting were 23 times more likely to have a crash.<sup>5</sup>

**Compared to Talking With Passengers:** A 2007 study titled "Conversations in Car: The Relative Hazards of Mobile Phones," conducted by the Transport Research Laboratory (TRL) in the United Kingdom, scientists concluded that talking on a hands-free mobile phone is more distracting and potentially more dangerous than having a conversation with passengers.<sup>6</sup>

A conversation on a hands-free phone requires more mental effort due to the lack of proximity to passengers, the extra effort involved in working out pauses and tone, and the fact that the person on the other end of the line cannot react to changing road conditions to help the driver as a passenger can.

The report's authors said, "The research may be particularly relevant to companies where employees use phones for work, and they may wish to develop policies regarding phone use."

TRL also found that the quality of information exchanged and decision-making abilities deteriorated markedly during a phone call. It is noted that this could have a serious detrimental effect on work discussions.

### **Legislative Efforts**

Since the late 1990s, every state has considered legislation related to driver use of wireless phones.

Currently, at the time this reference note is being written, talking on a hand-held cellphone while driving is banned in 10 states. The use of all cellphones by novice drivers is restricted in 30 states and the District of Columbia and the use of all cellphones while driving a school bus is prohibited in 19 states and the District of Columbia. Text messaging is banned for all drivers in 35 states and the District of Columbia.

Check the regulations in your state and those in which you travel for the most accurate and timely updates.

### **Legal Liability**

With so many individual state laws and regulations, it is inevitable that individuals involved in vehicle crashes involving cell phone use are likely to be involved in lawsuits.

### **Guidelines for Safe Mobile Phone Use**

The best procedure for the safe use of cell phones in vehicles is not to use them at all. If you do use your cell phone while driving, the following guidelines may be helpful.

- Choose a phone with hands-free operation and memory-dialing features.
- Securely install the phone as near as possible to your line of vision so that your eyes are diverted from the road for the least-possible amount of time.
- If you use a headset with your phone, use one that blocks sound to only one ear.
- Practice using the features of your mobile phone safely before attempting to use it while driving.
- Program emergency numbers and frequently called numbers into your phone and learn how to recall and dial those numbers.
- Plan your conversations in advance: if possible, place your calls when the car is stopped, and keep conversations brief while driving.
- Make driving your priority. Be aware that by using a mobile phone while driving you may be endangering yourself and others.
- While driving do not engage in conversations that require note taking or complex thought.



- While driving do not engage in emotionally difficult conversations.
- At the beginning of the call make it clear to the other party that you are using a mobile phone and may need to interrupt the call to respond to traffic situations.
- Actively compensate for the potential distraction created by mobile phone use: move to slower travel lanes, increase your following distance and frequently check your mirrors to assess the immediate driving situation.
- Secure your phone in the car so that it does not become a projectile in a crash.

## Summary

Cell phones and other increasingly complex in-vehicle technologies (increasingly known as telematics) are here to stay. Automobile manufacturers and electronics companies are creating new consumer products while at the same time attempting to create markets for these products. Responsible use of these technologies is critical to safety.

## References

1. Lesch, M., Horrey, W.J., Wang, T., and Zhang, W., Liberty Mutual Technical Memorandum 09-06, *Changing Drivers' Attitudes Towards Cell Phone Use Through Participative Simulation Testing and Feedback*, 2009.
2. Stein, A.C., Parseghian, Z., and Allen, R.W., A Simulator Study of the Safety Implications of Mobile Phone Use, *31<sup>st</sup> Annual Proceedings of the American Association for Automotive Medicine*.
3. Brown, I.D., Tickner, H.H., and Simmonds, D.C.V., Interference Between Concurrent Tasks of Driving and Telephoning, *Journal of Applied Psychology*, Vol. 53, pp. 419-424.
4. McKnight, A.J., and McKnight, A.S., *The Effect of Mobile Phone Use Upon Driver Attention*, Research Report, Washington, DC: AAA Foundation for Traffic Safety.
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6. A M Parkes, T Luke, P C Burns and T Lansdown, *Conversations in Cars: The Relative Hazards of Mobile Phones*, Transport Research Laboratory, 2007.

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The illustrations, instructions and principles contained in the material are general in scope and, to the best of our knowledge, current at the time of publication. No attempt has been made to interpret any referenced codes, standards or regulations. Please refer to the appropriate code-, standard-, or regulation-making authority for interpretation or clarification. Provided that you always reproduce our copyright notice and any other notice of rights, disclaimers, and limitations, and provided that no copy in whole or in part is transferred, sold, lent, or leased to any third party, you may make and distribute copies of this publication for your internal use.

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