

# Driving to distraction

By Alexis Artwohl, Ph.D.

Several recent high-profile public transportation accidents have been attributed to a driver texting or talking on a cell phone while operating a vehicle. The fact that texting while driving is dangerous is pretty much a no-brainer since you can't read or type and look at the road at the same time. Recent research at the Virginia Tech Transportation Institute (VTTI) confirmed that research subjects who were required to text while driving in a simulator were 23 times more likely than a non-distracted driver to get into a crash or near crash event.

Driving while taking on a cell phone, hands-free or not, has also been shown in multiple studies to result in driver impairment. Even in experiments that were set up so the drivers did not have to take their eyes off the road or their hands off the wheel, the drivers still showed more driving errors than non-distracted drivers.

None of this is surprising given that research has confirmed that multi-tasking, the notion that we can simultaneously do more than one task, is a myth. When people try to do this, their brain is actually rapidly switching back and forth from one task to another and their performance on both will suffer. How much it will suffer will depend on a variety of factors such as the complexity of the competing tasks, how well-rehearsed the tasks are, how fatigued the individual is, etc. The consequences of the impairment will range from insignificant to catastrophic, depending on the competing tasks.

Complicating matters even further is the tendency of humans to not believe that these limitations apply to them. Research has shown that people often think they are performing better than

they really are, including being in denial of driver impairment while talking on a cell phone.

One hopeful note in the research is the finding by Drews et al. that having a competent adult passenger in the car is not likely to result in driver impairment because the passenger is experiencing real-time driving conditions with the driver and will tend to point out traffic hazards, help with navigation, etc.

---

*... research has confirmed that multi-tasking, the notion that we can simultaneously do more than one task, is a myth. When people try to do this, their brain is actually rapidly switching back and forth from one task to another and their performance on both will suffer.*

---

## **Cops and communication equipment**

Cops are loaded down with all kinds of communication equipment in their patrol cars: radios, cell phones, MDTs, etc. Discussion of this topic invariably brings up many unanswered questions: How many pieces and what types of communication equipment can officers operate and safely drive at the same time? How many



patrol car accidents have been caused by cops attempting to do this kind of multi-tasking? Are many cops now able to do this successfully from sheer practice? If so, how long did it take them to become competent? How dangerous were they in the meantime? Is this a skill that can be learned? If so, how much and what kind of training, coaching, and practice is necessary to achieve competence? Are there certain ways cops can simultaneously drive and use communication equipment that are safer than others? Are there restrictions that should be placed on this type multi-tasking while driving? What kind of testing should be done to measure competence in this ability?

Hopefully future research will give us some answers but one fact is clear: Anything that requires the officers to take their eyes off the road increases the risk of a crash.

Strayer et al. express some pessimism in their 2006 article about the ability of drivers to master driving while talking on a cell phone. They examined the relationship between the self-reported estimates of time spent operating a vehicle while using a cell phone and the drivers' performance on a simulator. They found no evidence that more experience behind the wheel mitigated the negative impact of cell phone use on driving performance. They point out that naturalistic conversations and real-world driving have task components that are "variably mapped," and that the research literature shows that these types of tasks are not amenable to much improve-

**NORTHROP GRUMMAN**

DEFINING THE FUTURE™

©2008 Northrop Grumman Corporation

**Wireless redefined.**



**REMOTEC TALISMAN GOLD.** The new Talisman radio line casts off the limitations of cables, while redefining the bounds of wireless control. Talisman gives Andros hazardous duty robots unmatched levels of performance, enabling them to operate deep within concrete and steel structures. Their documented overland operating range is up to 1.2 miles non-line-of-sight. Talisman can be retrofitted to give law enforcement, military, and security operations the unrestrained maneuverability required in the most challenging environments. By eliminating the hindrances of cable and the reliability problems of wireless, Talisman keeps danger at an even greater distance.

[www.northropgrumman.com](http://www.northropgrumman.com)

## Recommendations

- Texting while driving has been shown to be very unsafe, so this to be avoided as much as possible. One can assume that typing on an MDT while driving is probably not safe either. It is advisable to leave working the MDT to your non-driving partner or limit its use to when the vehicle is completely stopped.
- Talking on a cell phone, hands-free or not, is not as dangerous as texting but can still result in driver impairment. Try to avoid it or limit it as much as possible when the vehicle is moving.
- The jury is still out on how much impairment might result from a driver talking on the radio. It probably depends on many things that are yet to be illuminated by research. For instance, some research indicates that listening to recorded conversations or music does not result in impairment, so a communication during which the officer is primarily receiving information may be less deleterious than a back-and-forth conversation. However, we simply don't know, so it might be prudent to use the radio judiciously and avoid idle chatter while the vehicle is moving.
- Invite your passenger, on or off work, to be your back seat driver and help you be aware of traffic hazards and navigation tasks. I know this can be annoying at times, but if you're honest with yourself you will admit that you've probably been saved from at least one fender bender or worse by an alert passenger who told you to watch out.
- If you're a passenger, be alert to driving conditions and ask the driver's permission to be their extra set of eyes and ears. This might help avoid conflict if you do need to give them important information.
- Enthusiastically participate in any chance to improve your driving skills. Anything that is well-rehearsed and for which we have achieved high levels of competence is likely to be less vulnerable to disruption.
- Try to be humble about your abilities. You may think you can multitask with no impairment in your performance but chances are good that you are wrong!

*Hopefully future research will give us some answers but one fact is clear: Anything that requires the officers to take their eyes off the road increases the risk of a crash.*

ment with practice. This is consistent with the overall research which shows that when people try to multitask their performance on each task is highly likely to deteriorate.

Of course, there is plain old practice involving mere repetition, which may not ever lead to anything much beyond mediocrity, and there is deliberate, focused practice involving intense training and coaching which is another matter altogether and can lead to high skill levels. I think we can guess which kind of practice the average driver does. This does not ultimately mean that Strayer et al. are overly pessimistic in their assessment; hopefully future research will shed more light on this question.

Speaking of intense training, research done by the Force Science Institute showed that the London Metropolitan Police officers who received that agency's highly advanced driver training (which is not provided to all their officers) were better able than the untrained drivers to remember police-related details they had seen or heard from dash camera recordings or recorded radio calls, while simultaneously engaging in a competing auditory or visual task. However, their memory for non-police related details were no better than untrained drivers, so the memory for details was content-specific. (For more information on the London Met's excellent driver training see the articles "Police Driver Training: The Roadcraft System" written by Travis Yates for PoliceOne.com.)

The drivers who receive London Met's advanced driver training are extremely skilled, and their ability to notice police-related details during high speed

driving is remarkable. It should be noted that the level of training they receive far exceeds that provided to most officers in the U.S., so even if research proves that drivers can be trained to drive safely while multitasking, it remains to be seen if all agencies will have the resources to provide the intensive, lengthy training, practice and coaching that may be necessary to help their officers achieve and maintain this high level of skill. Moreover, it's very unlikely that average citizens will ever receive it. More research needs to be done in this area to answer these important questions about cops, communication equipment and training. ◀◀

## References

- Artwohl, Alexis (2008). "I'm OK, You're Below Average." *The Tactical Edge*, Fall 2008, 73-76. .
- Drews, F.A., Pasupathi, M., and Strayer, D.L. "Passenger and Cell Phone Conversations in Simulated Driving." *Journal of Experimental Psychology: Applied*, 2008, Vol. 14, No. 4.
- Force Science News #49, July 21, 2006, www.force-science.org.
- Redelmeier, Donald A. and Tibshirani, Robert J. Ph.D. "Association Between Cellular-Telephone Calls and Motor Vehicle Collisions." *New England Journal of Medicine*, Vol. 336, No. 7, 453-458.
- Shomstein, S. and Yantis, S. "Control of Attention Shifts between Vision and Audition in Human Cortex." *The Journal of Neuroscience*, November 24, 2004. 24(47):10702-10706.
- Strayer, D.L., Drews, F.A. and Crouch, D.J. "A Comparison of the Cell Phone Driver and the Drunk Driver." *Human Factors*, Vol. 48, No. 2, Summer 2006, 381-391.
- Strayer, D.L., Drews, F.A., and Johnston, W.A. "Cell Phone-Induced Failures of Visual Attention During Simulated Driving." *Journal of Experimental Psychology: Applied* Vol. 9, No. 1, 23-32.
- Virginia Tech Transportation Institute Press Release: "New Data from VTTI Provides Insight into Cell Phone Use and Driving Distraction." July 2009.