

Distracted Driving: Using Technology to Solve a Problem Caused by Technology!

By Judge Herbert B. Dixon Jr. (Ret.)

All drivers have had this experience: A car ahead is traveling an unsteady course. It drifts out of its lane into oncoming traffic or the lane to the right or onto the shoulder. Next, the vehicle slowly corrects itself, and then, moments later, it repeats the process or swerves to the other side. The vehicle also has inconsistent speed—speeding up or slowing down for no apparent reason. Like most of us who have experienced this type of spectacle, you decide it would be best to get around this unpredictable driver and start to pass, praying that the erratic vehicle will remain in its lane. Upon passing, you catch sight of the driver, whose gaze is not on the road but downward, toward something just out of sight—the unmistakably electronic glow of a phone. The rest of your thoughts are unsuitable for printing in a professional magazine.

By now, most of us are aware that despite all the benefits of smartphones, they are habit-forming and draw attention away from our daily lives in ways that can be harmful and dangerous. A person using their smartphone while operating a motor vehicle is the classic example of a distracted driver. According to the National Highway Traffic Safety Administration, 3,142 people were killed in 2019 in accidents caused by distracted driving, with texting being the most alarming distraction. For example, sending or reading a text takes your eyes off the road for five seconds. At 55 mph, that's like driving the length of an entire football field.¹ Imagine doing that with your eyes closed. Moreover, the American Safety Council states that one in every four car crashes involves cell phones, and drivers using a cell phone are four times more likely to be in a crash.²

Despite the well-publicized dangers of driving while using cell phones, drivers continue to engage in this hazardous behavior. In a nationwide survey conducted



by the AAA Foundation for Traffic Safety, 94.9 percent of respondents believed that reading from a phone while driving was extremely or very dangerous, and 95.5 percent of respondents thought the same for texting or emailing. Yet 33.9 percent of those same respondents admitted to reading from their phones within the past 30 days while driving, and 22.7 percent admitted to typing a text or email.³ Is the actual percentage likely higher? Yes! According to an estimate by the National Conference of State Legislatures, as many as 80 percent of the 220 million wireless subscribers in the United States use their phones while driving.⁴ If this estimate is correct, one conclusion to be drawn is that not all offenders are willing to admit engaging in this type of behavior, which they know on some level is dangerous.

Statutory Response to Drivers Distracted by Cell Phones

In recent years, several states have passed laws to combat distracted driving, most by prohibiting texting while driving. Currently, 48 states, the District of Columbia,

Puerto Rico, Guam, and the U.S. Virgin Islands ban texting while driving. In 24 states, handheld cell phone use is prohibited, but these same drivers are permitted to use their devices in hands-free mode. No state bans all cell phone use for all drivers; however, 36 states and the District of



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Columbia prohibit all cell phone use for novice and teen drivers.⁵

Laws banning cell phone use have proven difficult to enforce. A phone held by a driver at the level of his midsection will generally be blocked from outside view by the nonglass sections of a vehicle's body. In a nationwide study of enforcement of laws banning cell phone use while driving, 78 percent of surveyed police officers cited drivers concealing their phone use as a barrier to enforcement.⁶ Moreover, critics point out that texting bans are particularly difficult to enforce. A police officer who witnesses a driver using their phone will most likely be unable to differentiate texting from some legal phone use. The driver may be answering a call or accessing a nontexting app. As a result, many commentators say that a ban on all handheld cell phone use is more enforceable than a texting ban.

Technology Responses to Distracted Driving

Given the challenges posed by distracted driving, experts increasingly see technology as a significant part of the solution to this technology-caused problem. The technology solutions fall into two general categories—preventive phone-blocking technology and technology to help avoid distracted-driving accidents.

Phone-Blocking Technology

Many drivers appear unable to resist the urge to pick up their phones while behind the wheel, so several cell phone technologies have been developed to block this behavior. These technologies commonly prevent the driver from sending or receiving calls, texting, or emailing while a vehicle is in motion. Apple's iPhones come with a Driving Focus mode. When enabled, this feature blocks incoming calls and texts when the phone detects that the car is in motion. Incoming calls may be allowed when the phone is connected to the car via Apple's CarPlay Bluetooth system for hands-free use.⁷ AT&T's DriveMode is a free app for Apple and Android phones. It activates while the vehicle is in motion, preventing the driver from texting, reading, or typing of any kind. However, the app still allows 911 calls and access to music

and navigation. In addition, it will silence text messages and phone calls and automatically reply to the sender that the recipient is driving and unable to respond. Another app, DriveSafe.ly, has an audio feature that will read incoming text messages or emails to a driver, allowing them to receive messages in real time while keeping their eyes on the road and hands on the wheel. Like DriveMode, this app allows users to set up an automatic reply to calls and messages. For parents wishing to monitor their teenager's phone use while driving, Canary is an app that allows parents to link their phones to their child's and receive an alert if the teen texts or uses the phone while driving or exceeds the speed limit.⁸

Android Auto and Apple CarPlay are two examples of onboard systems in many cars sold today. When a driver's phone connects to the vehicle, the phone's apps can be displayed on the car's infotainment system. This system can be used to perform similar functions to phone-based driving apps, such as using the audio feature to read incoming texts and emails and preventing the phone from being used while connected to the car.⁹

Additionally, aftermarket phone-blocking devices are available for installation in the car's interior. One such device is Drive ID, by the company Cellcontrol. This device, mounted to the windshield under the rearview mirror, automatically detects who is sitting in the driver's seat. The device also shuts off the driver's access to texts, emails, social media, and video games but does not affect anyone else in the car. Were a driver and passenger to switch places, there would similarly be a change in the access that each has to their phone's functions.¹⁰

Despite the benefits of phone-blocking technology, many point out its shortcoming in its current form—drivers must opt in to using it, including making an active choice by downloading, purchasing, or turning it on. But often, those most inclined to drive distracted will avoid these technologies altogether. As a result, there have been calls for companies like Apple to make their phone-blocking technology a default feature instead of an elective one. Still, there is concern that doing such would be unpopular with phone users.

Technologies to Help Avoid Distracted-Driving Accidents

Car companies are including more safety technology in vehicles designed to help avoid distracted-driving accidents. Some of these technologies include automobiles with forward-collision warning systems providing visual and audible alerts and emergency braking systems that automatically engage if the system senses an imminent collision; lane-departure warning systems that alert drivers when their car crosses over a lane dividing line; and lane-keeping assist systems that help steer a vehicle to prevent it from wandering into another lane.¹¹ Many models now include driver-attention monitors that detect and warn drivers that they appear inattentive or fatigued based on the vehicle's movements and steering corrections.¹²

Emerging technologies will continue to enhance the ability of vehicle safety systems to help avoid accidents caused by distracted drivers. The U.S. Department of Transportation has been working with the automotive industry to develop and implement technology that will permit vehicles on the road to "talk to each other." The technology, known as vehicle-to-vehicle (V2V) communication, allows vehicles to wirelessly share information about their location, heading, and speed. V2V vehicles can broadcast messages up to 10 times per second. These messages have a range of more than 300 meters (approx. 984 feet). This would give each vehicle a 360-degree field of awareness of vehicles nearby, as well as potential crashes and other hazards communicated through other V2V vehicles. These connected vehicle technologies have the potential to provide drivers with another safeguard to anticipate potential collisions and significantly reduce the number of lives lost each year.¹³

Automakers have also begun installing advanced driver-attention monitoring systems in vehicles. A few models, such as the Subaru Forester, now include camera-based eye-tracking technology that alerts the driver if their eyelids droop or their eyes leave the road for extended periods.¹⁴ A more advanced version of this technology, still in its infancy, uses sophisticated 3D systems capable of determining driver

inattentiveness through both eye movements and other facial features and expressions. Indeed, some vehicles have infrared cameras embedded in the steering wheel. These cameras track drivers' head position to ensure their eyes are focused on the road and not looking down at a mobile device or away at another passenger. If the driver looks away from the road for more than a few seconds, the system sends a warning to the driver.¹⁵

Concerns with Technological Approaches

There is no doubt that new technology itself can lead to other distractions. For example, by eliminating the need to shift, automatic transmissions have made it much easier for a driver to pick up a smartphone. A continuing criticism of the technological approach to distracted driving is that technology solutions do not address the underlying causes of distracted-driving behavior. Indeed, numerous experts say that as technology continues to eliminate driving tasks, drivers will inevitably look for more distractions to fill their free time.¹⁶

Lastly, although not the focus of this article, there is one additional public concern about the increasing use of advanced camera and facial recognition technologies to address the problem of distracted driving—privacy! This concern came to the forefront last year when Tesla revealed that it retains video footage from in-car cameras for study and research. Other car companies employing driver-attention monitoring

systems, such as Subaru, BMW, Ford, and GM, have stated that their systems operate on a closed loop and do not record, save, or transmit data or video.¹⁷ As these technologies advance, it remains to be seen whether car manufacturers' access to driving data and driver video will lead to more concerns about individual privacy.

Final Thoughts

How ironic! As more driving conveniences are built into the automobile, distracted driving becomes more of a problem. What does that say about the difficulty of modifying human behavior, especially dangerous behavior? Is there a way to dissuade drivers from using their phones, or will society accept the approach of merely managing that conduct as much as possible?¹⁸ ■

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Endnotes

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