Managing Driving’s Many Distractions

Technology in cars draws more drivers’ eyes off the road

Cars are equipped with more technology, such as touch-screens and voice-activated programs, which create more potentially dangerous distractions for drivers. One study of 1,000 drivers shows 33% reported sending a text. ILLUSTRATION: JASON SCHNEIDER

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Your car now feels like one big voice-activated, touch-screen-enabled distraction.

As lawmakers move to tighten rules on distracted driving, cars are coming equipped with more bells and whistles that make it easier than ever to take drivers’ eyes off the road.
Voice technology makes hands-free texting possible—if you try talking like a robot. Bluetooth features in the car often means shouting a spouse’s name several times to call. Touch screens with drop down menus can feel like a maze when just trying to find some music.

Car makers have offered more technological gadgetry to keep drivers off their phones, but those efforts have often been thwarted as drivers have been frustrated in getting it all to work properly. That makes them even more distracted.

“Engineers trying to make a car look and feel like a phone is stage one of the race,” says David Lyon, design partner for Pocketsquare Design in Royal Oak, Mich., which helps car companies design interior communications systems. A touch screen on the dashboard offering GPS navigation and music apps feels like an iPhone.

Car fatalities in the first half of 2016 rose 10.4% to 17,775 according to the National Highway Traffic Safety Administration. That is a steep increase following an already surprising uptick in fatalities last year. The rise in deaths raises fresh concerns over use of car technology, cellphones and distracted driving.

A recent study by State Farm Mutual Automobile Insurance Co. of 1,000 drivers a year shows that 55% of drivers reported talking on a hand-held cellphone, 33% reported sending a text message and 26% surfed the internet on their phones. Drivers ages 18 to 29 reported those behaviors at a considerably higher rate: 64% reported talking on a hand-held phone; 58% reported sending a text and 48% browsed the internet while driving.

General Motors this year has launched Apple Inc.’s CarPlay technology and Google Inc.’s Android Auto into Chevrolets, Cadillacs, Buicks and GMC trucks and SUV’s. The technology allows drivers to use many of their phone’s features through the car’s interface. “GM has focused on enabling hands-free phone capability,” says Tom Wilkinson, senior manager for cybersecurity and safety communications.
DRIVEN TO DISTRACTION

David Strayer at the University of Utah created “the cognitive distraction scale” by observing drivers’ reactions to a series of stimuli and rating them on a scale of 1 (simple driving) to 5 (driving while doing an impossibly complex mental task, such as balancing a checkbook).

- **Listening to the radio:** 1.21. In testing, volume was kept to between 80 and 90 decibels. He says subjects were told to turn to whatever station they would normally listen to while driving to work.

- **Listening to an audio book:** 1.75. Three different selections from books were offered to drivers, who could choose between ‘The Giver,’ ‘Water for Elephants,’ or ‘Harry Potter and the Sorcerer’s Stone.’ It is possible, Dr. Strayer says, to get so engrossed in a story that a driver would miss an exit and or realize ‘wow, I’m in the wrong state,’ he says.

- **Talking to a passenger in the vehicle:** 2.33. The more heated a conversation is, the more distracting it can be. Driving with an extra pair of adult eyes on the road is generally a plus. And some experts say that drivers can perform better when they know someone else is watching.

- **Conversing with a friend on a hand-held phone:** 2.45. The person on the receiving end of the call doesn't necessarily know the caller is driving and misses cues—hence a lot of awkward pauses and repetition—making the conversation more stilted and distracting than if it were done in person.

- **Conversing with a friend on a hands-free cellphone:** 2.27. Dr. Strayer says that talking hands-free is just as distracting as talking on hand-held cellphones, despite state laws and car technology that permit hands-free phone use.

- **Speech-to-text, rated at 3.06, was distracting enough in error-free lab conditions and rated 4 or higher in regular driving conditions.** The problem is how error-prone speech-enabled texting can be. Driver anxiety and distraction shot up when they corrected—and driving became secondary.

The problem is that hands-free devices don’t eliminate cognitive distraction, says Deborah Hersman, chief executive of the National Safety Council, a nonprofit research and advocacy group in Washington, D.C. The National Safety Council says it has compiled more than 30 studies that use different research methods to compare driver performance with hand-held and hands-free phones. Many consumers are lulled into thinking they are safe if they use technology hands-free.

“It’s not the hand that’s distracted. It’s the brain that’s distracted,” says Ms. Hersman.

In a series of experiments last year involving 102 drivers, psychology professor David Strayer and colleagues at the University of Utah strapped drivers with electroencephalograms—or EEGs—to
measure brain workload as they drove under a series of stimuli.

They came up with a cognitive distraction scale of 1 (simple driving) to 5 (driving while doing an impossibly complex mental task, such as balancing a checkbook). Results showed that listening to the radio (1.21) or an audio book (1.75) showed a small increase in cognitive distraction. The conversation activities of talking to a passenger in the vehicle (2.33) and conversing with a friend on a hand-held (2.45) or hands-free cellphone (2.27) were associated with a moderate increase in cognitive distraction. Drivers that used speech-to-text technology (3.06 and up) had the largest cognitive distraction rating.

One of the pitfalls to voice-activated technology in cars is how error-prone it is, says Dr. Strayer. Drivers reflexively try to correct the computer, bringing up anxiety levels and mental workload. “In many situations the driver is more interested in trying to stop the call than to drive,” he says.

In its more recent models, Subaru added a second microphone in the cabin of its cars, so that voice-enabled commands could better discern different voices and accents.

“People would get frustrated with their voice commands,” says spokesman Michael McHale. It also encourages customers to return to their dealerships a month after purchase, so they receive extra instruction on how to use all the settings in the new car. “There is so much information in the vehicle now,” he says. “We are trying to keep the process as simple as possible.”

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OTHER DISTRACTIONS ON THE ROAD

Tips for drivers

- **Drinking a cup of coffee while driving.** Use cupholders. Hot liquids, spilling, adjusting plastic tops can all be very distracting. Dr. Strayer says to keep such interactions under 2.5 seconds.

- **Applying mascara in the rear view mirror.** Typically this is done at a stoplight. The danger is getting caught up and not watching the for the light to turn green.

- **Handing a child a french fry in the back seat.** It is never a good idea to turn around when a car is moving forward.

- **Refereeing a fight between two children.** Ignore if at all possible. Not only is it safer, but it also teaches siblings to work out conflict independently.

- **Using GPS on touch screen.** Addresses are long. It is always best to type an address while the vehicle is still parked. Some cars don’t allow drivers to type it in while in motion.

Even technology intended to help people drive more safely has its pitfalls. Dana
Ju, a 39-year-old Washington, D.C. public-affairs consultant drives a Hyundai Santa Fe “loaded with every gadget you can imagine,” she says, from heated seats to Bluetooth phone technology. But one thing she found particularly aggravating: A loud beeping sound to alert her to an approaching car when changing lanes. “The beep was so loud and annoying, I turned it off,” she says.

States are struggling to find ways to define and crack down on distracted driving. In New Jersey, a bill is pending that would give police latitude to issue a summons to drivers doing anything “unrelated to the actual operation of the vehicle, in a manner that interferes with the safe operation of the vehicle,” which could include cellphones to coffee cups. In New York, a law is pending that bans drivers from texting or engaging in a cellphone conversation while at a stoplight. Current law says only that drivers can’t do it while their cars are in motion.

One of the problems in regulating texting while driving, says Missy Cummings, an engineering professor at Duke University who researches how humans interact with cars, is that it is very difficult to enforce. It is difficult to tell if someone is fiddling with a phone on their lap. Windows may be tinted. Or someone could just be looking down. “You can’t really see if a person is texting,” she says.

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