# Distractions from In-Vehicle Devices

**HIGHLIGHTS:**

- At least 18% of police-reported crashes involve some form of driver inattention

- Driver distration is one form of inattention and is a factor in over half of the crashes

- Talking on a cell phone while driving is mentally distracting, regardless of how the phone is physically held

**A driver was recently charged with second-degree murder due to allegedly watching a DVD movie while driving. The driver lost control of the vehicle and hit another vehicle head on.**

According to news reports, the driver had installed the DVD player so he could see the screen while driving. In the truck was the equivalent of a home entertainment system: a DVD player, speakers and a high-end video game console. Although the driver was ultimately found not guilty, the issue remains that more and more drivers are dealing with distractions while driving.

News, weather, entertainment and financial information is available to the driver through web applications. Concierge (location-based, On-Star-like) services provide drivers with information in support of shopping, service-seeking, sightseeing or otherwise. Onboard computers and sensors provide drivers with real-time vehicle diagnostics. Vehicles may also include an expanding variety of driver support systems such as collision and lane departure warning systems, vision enhancement systems and other passive and active safety systems.

## Distraction

Distraction or inattention occurs when drivers do not pay enough attention to the roadway or the task of driving. Driver inattention is a major contributor to highway crashes. The National Highway Traffic Safety Administration (NHTSA) estimates that at least 18% of injury crashes involve driver inattention. Driver distraction is one form of inattention and is a factor in over half of these crashes. Distraction occurs when a driver "is delayed in the recognition of information needed to safely accomplish the driving task because some event, activity, object or person within or outside the vehicle compels or induces the driver's shifting attention away from the driving task." The presence of a triggering event distinguishes a distracted driver from one who is simply inattentive or "lost in thought."

An increase in in-car electronics, also known as telematics is a phenomenon that employers must consider as they manage employees who drive on company business.

## Task Complexity

Task complexity is measured by the amount of information the driver must process. Researchers have found that as in-vehicle task complexity increases, so does the

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total amount of time spent looking at the display. Devices or activities that are more complicated will naturally lead to prolonged and more frequent glances away from the roadway.

As vehicles are equipped with more functions that depend upon technology, the user interfaces are more complex. Examples include "mouse-like" buttons that require drivers to scroll thru several in-dash video menus to operate controls like radios or HVAC systems. After a familiarization period most drivers learn how to safely use these systems, however, drivers with no experience with these control features may be at risk of crashing due to distraction from the driving task. This may be particularly true of travelers renting unfamiliar vehicles equipped with such technology as GPS-based navigation systems, for example.

### Research Findings

Researchers, including the Liberty Mutual Research Institute for Safety, continue to conclude that in-vehicle technologies are distracting, particularly communications devices that require constant user attention and interaction. NHTSA and other organizations report that conversations on cell phones while driving are mentally distracting, regardless of how the phone is physically held.

### Non-Technology Distractions

While technological distractions are increasingly available in vehicles, there has been little change in the other kinds of distractions drivers deal with. People continue to read while driving, attend to personal grooming, eat, deal with children, converse with passengers, etc. Thus, the sheer number of in-vehicle distractions has grown over the years. Distractions have gone from those created by simply adjusting a radio to carrying on complex business discussions on a cell phone, inputting destinations into a navigation system, retrieving and responding to text messages and surfing the internet, to manipulating the "drive-by-wire" features of the vehicle.

At the same time, highways are more congested, speeds are greater and tempers are shorter.

### What Can Employers Do?

Driving is a safety-critical task and employers should acknowledge the fact that in-vehicle technologies are distracting. As they specify vehicles for their fleet, whether they be heavy commercial vehicles or passenger cars for sales or service staff, employers should consider the kinds of technologies they install.

- Limit or eliminate devices that require driver/device interaction while driving.
- Educate drivers and others on distractions caused by in-vehicle displays. Include controlling driver distraction as a topic during employee training and indoctrination programs.
- Prohibit installation of video entertainment systems in owned or non-owned vehicles used on company business where the driver of the vehicle can physically see the screen.
- Establish a policy that requires drivers to safely stop out of traffic when responding to or initiating e-mail, faxes or other communications devices that require key strokes. Best practice is to interlock the device with the vehicle so that it will not operate unless the vehicle transmission is in park.
- Install business-related technologies that utilize a video display screen as close to the drivers' sight line as safely as possible.
- Enforce a policy that requires drivers to inform callers that they are talking on a cell phone if they are driving when they receive a call.
- Enforce a policy requiring employees who initiate calls to ask if the person they are calling is driving and offer to call back if they expect the call to be lengthy or require complex discussion.
- Require and provide hands-free cell phone interfaces, regardless of the fact that hands free devices do not mitigate driver distraction.
- Suggest that in difficult driving situations, drivers let incoming calls bounce to voicemail for safe retrieval when the driving situation improves.
- Purchase vehicles with technologies activated by voice recognition systems (including cell phones, navigation systems, HVAC, etc.).

- Deliver automated communications to drivers only when the vehicle is stopped, unless it is an emergency message. Do not send automated messages with auditory alerts when commercial motor vehicle drivers are in their sleeper berth.

- Investigate to determine if driver distraction was a factor in crashes and near misses.

Future distraction control technologies will include "smart" systems that sense when drivers are encountering difficult traffic situations and "pause" distracting systems in the vehicle. These systems will use steering input changes, speed changes, signals received from other vehicles, GPS locators showing the vehicle to be in a known complex driving situation, the drivers' pulse rate, etc., as indicators that the driver's cognitive ability is being overloaded.

## Summary

While in-vehicle devices afford drivers greater connectivity, information and capacity to be productive, there are obvious safety concerns to the extent that these devices and the associated in-vehicle activities detract the driver from what should be their primary goal: driving safely.

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