Science of Distracted Driving

DISTRACTED DRIVING WORKSHOP
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Vehicle Accidents!

When Could My Company Be Exposed to Auto Losses?

• Examples:
  – Company owned vehicles when on business
  – Company owned vehicles used for personal business
  – Employee owned vehicles used on company business
  – Rented vehicles used for company business
Auto Liability Legal Issues

• Theories of Liability for commercial auto include:
  – Respondeat Superior (let the master answer)
  – Negligent Hiring
  – Negligent Entrustment
  – Negligent Training
  – Negligent Policies
Is Distraction a Problem?
Driver Distractions and Inattentiveness

• One of the leading causes of rear-end, side swipe, failure to yield, lane changes, and turning accidents.
Let’s Run the Numbers

• In 2011, 3,331 people were killed in crashes involving a distracted driver, compared to 3,267 in 2010. An additional, 387,000 people were injured in motor vehicle crashes involving a distracted driver, compared to 416,000 injured in 2010.

• 18% of injury crashes in 2010 were reported as distraction-affected crashes.

• Drivers who use hand-held devices are 4 times more likely to get into crashes serious enough to injure themselves. (Monash University)

• Text messaging creates a crash risk 23 times worse than driving while not distracted. (VTTI)

• Sending or receiving a text takes a driver's eyes from the road for an average of 4.6 seconds, the equivalent-at 55 mph-of driving the length of an entire football field, blind. (VTTI)

• Headset cell phone use is not substantially safer than hand-held use. (VTTI)

• Driving while using a cell phone reduces the amount of brain activity associated with driving by 37%. (Carnegie Mellon)
What is Distracted Driving?

- Operating a motor vehicle while engaged in other activities

**Three types of distractions that can impact driving behavior**

**Visual** - Taking one’s eye off the road

**Manual** - Taking one’s hands off the wheel

**Cognitive** - Taking one’s mind off the basic task of driving

**Think About Texting**

**OUR BRAINS ARE NOT GOOD AT MULTI-TASKING**
Is Distraction an Issue?

- 60% of the safety-critical events had some type of driver distraction

<table>
<thead>
<tr>
<th>Event Type</th>
<th>All Safety-Critical Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>All safety-critical events</td>
<td>59.9%</td>
</tr>
<tr>
<td>Crashes</td>
<td>71.4%</td>
</tr>
<tr>
<td>Near-crashes</td>
<td>46.2%</td>
</tr>
<tr>
<td>Crash-relevant conflicts</td>
<td>53.6%</td>
</tr>
<tr>
<td>Unintentional lane deviations</td>
<td>77.5%</td>
</tr>
</tbody>
</table>
University of Utah & Cognitive Distraction

- Done in simulators or short tracks with close observation
- Aggregate all activities for a single action into one stat (i.e., picking up phone, dialing, talking, etc.)
- Shows cell phone use makes you greater than 5x more likely to crash
- Demonstrates that cognitive distraction is the main problem
- Suggests that distracted driving can be as bad as drunk driving
Virginia Tech Transportation Institute & Visual Distraction

• Done with “naturalistic” studies
• Each task is broken out to show specific risks
• Separates all of the activities in a task into separate risks (i.e., picking up phone, dialing, talking, etc.)
• Odds change from task to task—reaching for a phone 8.8x risk, texting / keying information x23 risk, talking relatively little change
• “Vision is King”- Dr. Rich Hanowski
• “If you are awake and looking at something, you aren’t likely to hit it”- Dr. Jon Hankey
<table>
<thead>
<tr>
<th>Task</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text message on cell phone</td>
<td>23.24</td>
</tr>
<tr>
<td>Interact with/look at dispatching device</td>
<td>9.93</td>
</tr>
<tr>
<td>Write on pad, notebook, etc.</td>
<td>8.98</td>
</tr>
<tr>
<td>Use calculator</td>
<td>8.21</td>
</tr>
<tr>
<td>Look at map</td>
<td>7.02</td>
</tr>
<tr>
<td>Dial cell phone</td>
<td>5.93</td>
</tr>
<tr>
<td>Talk or listen to hand-held phone</td>
<td>1.04</td>
</tr>
<tr>
<td>Talk or listen to hands-free phone</td>
<td>0.44</td>
</tr>
<tr>
<td>Talk or listen to CB radio</td>
<td>0.55</td>
</tr>
</tbody>
</table>
Driver Distractions and Secondary Tasks

• Examples:
  – Eating, Drinking, Snacking
  – Reaching for something in the vehicle seat/floor
  – Reading a map or directions
  – Talking on the cell phone
  – Looking at the scenery/billboards/people
  – Daydreaming/deep in thought
  – Driver fatigue/falling asleep
Remember, Distraction is Not Just Cell Phones

- Almost **80 percent** of all crashes involved the driver looking away from the forward roadway just prior to the onset of the crash.

- Distracted driving involves more than just cell phone use and texting.
What’s the Right Risk Management Approach?

Should you address visual / manual distraction?

Should you address cognitive distraction?

How about All of the Above?
Recommendations for Employers

• Educate employees on the importance of staying focused on driving, scanning techniques and avoiding distractions while driving.
• Have a meaningful and effective cell phone/texting policy in place.
• Avoid contacting employees while driving. Defer conversations until stopped.
• Set a good example by having managers follow company policy.

Sample Cell Phone Use Policy

Accident statistics support that using a cellular phone, either a hand-held or a hands-free model while operating a motor vehicle, distracts a driver’s attention from traffic conditions. To help reduce the possibility of vehicle accidents in connection with the use of cellular phones, our company has adopted a cellular phone policy that is applicable to all employees while driving a company vehicle at any time, or while driving any other vehicle (rented, leased, borrowed or their own vehicle) while conducting company business.

Our company’s policy is as follows:
• Cellular phone calls, incoming or outgoing, are not allowed while driving
• The cellular phone’s voicemail feature should be on to store incoming calls while driving
• All calls and message retrievals should be made after the vehicle is safely parked
• Accidents incurred while the employee driver is using a cellular phone may be considered to be preventable, and the employee driver subject to disciplinary action
• Hands-free cellular phones are subject to the same policy as the hand-held cellular phones

I have read the above policy and will abide by it.

___________________________
(Employee signature)
Stop Distracted Driving Campaign Resources

• **Travelers Resources** ([riskcontrol.com](http://riskcontrol.com))
  – CD/DVD training program topics include distracted driving
  – Sample cell phone policy
  – Technical bulletins/Supervisor Talks
  – Distracted driving webinar replay

• **National Safety Council** ([nsc.org](http://nsc.org))
  – Sample policy
  – Awareness materials (poster, factsheets & videos)

• **Commercial Vehicle Safety Alliance** ([cvsa.org](http://cvsa.org))
  – Defeating Distracted Driving (CD-ROM). Free program available in CVSA’s online store.

• **Department of Transportation** ([distraction.gov](http://distraction.gov))
  – Fact and figures, sample policies, driver pledge
Are More Cell Phones Making the Roads More Dangerous?

2002

- 140,800,000 wireless subscribers (48% US population)
- 43,005 motor vehicle fatalities (22.10 deaths per 100,000 drivers)

2011

- 316,000,000 wireless subscribers (99.7% US population)
- 32,367 motor vehicle fatalities (15.28 deaths per 100,000 drivers)
FATIGUE / DROWSINESS
Polling Question

What is your experience with drowsy driving?

A. I have never driven while drowsy.
B. I sometimes struggle to keep my eyes open while driving.
C. I have fallen asleep while driving during the last year.
D. I have fallen asleep while driving and had an accident.
Fatigue/Drowsy driving

12% of all crashes and 10% of all near-crashes involve drowsy driving.

11% of drivers surveyed said they had fallen asleep while driving during the past year.

100,000 crashes are caused by drowsy driving, resulting in 40,000 injuries and 1,550 deaths.

Sources:
Virginia Tech Transportation Institute 100-Car Study, 2006
National Highway Traffic Safety Administration (NHTSA)
Who’s at the highest risk?

- Young drivers between the ages of 18-29
- Shift workers or people working long hours or more than one job
- Commercial drivers
- People with untreated sleep disorders such as sleep apnea
- Business travelers
- Anyone who gets less than the normal 7-9 hours of sleep
Total Stopping Distance

• Autos traveling at 65 mph

• Perception Distance 72 feet
• Reaction Distance 72 feet
• Braking Distance* 150-200 feet
• Total stopping distance 294-344 feet

*varies by vehicle type and size and road conditions; vehicles towing trailers also require additional braking distances
Helpful resources

- Driving Healthy (drivinghealthy.org)
  - Drowsydriving.org
- National Sleep Foundation (sleepfoundation.org)
- AAA Foundation for Traffic Safety (aaafoundation.org/drowsy-driving)
Speeding

- How much time is saved?
- What is the risk?
- What are some potential consequences?
- Is it worth the risk?

<table>
<thead>
<tr>
<th>Trip Length</th>
<th>Speed</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 Miles</td>
<td>55 MPH 32 min, 44 sec</td>
<td></td>
</tr>
<tr>
<td>30 Miles</td>
<td>60 MPH 30 min, 0 sec</td>
<td>2 min, 44 sec</td>
</tr>
<tr>
<td>30 Miles</td>
<td>70 MPH 25 min, 43 sec</td>
<td>4 min, 17 sec</td>
</tr>
</tbody>
</table>
Speeding statistics

• 31% of all traffic fatalities
  – 55% attributed to exceeding posted speed limit
  – 45% attributed to driving too fast for conditions

• Estimated cost of $40 billion annually
Speed-related crashes are NOT just about MPH

**Non-Interstate Fatalities**

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 55</td>
<td>2701</td>
</tr>
<tr>
<td>50</td>
<td>465</td>
</tr>
<tr>
<td>45</td>
<td>1508</td>
</tr>
<tr>
<td>40</td>
<td>724</td>
</tr>
<tr>
<td>35</td>
<td>1279</td>
</tr>
<tr>
<td>Under 35</td>
<td>1277</td>
</tr>
</tbody>
</table>

**Interstate Fatalities**

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 55</td>
<td>964</td>
</tr>
<tr>
<td>At or under 55</td>
<td>287</td>
</tr>
</tbody>
</table>

**Total:**

- Non-Interstate: 7,954
- Interstate: 1,251

Total: 7,954
Total: 1,251
Questions?