distraction. Adverse consequences to be considered for such activities include:

- It is not necessary for such activities to result in smoking, radio, children, passengers, cell phone, reading, eating/drinking, animals.

- Examples of sources of distraction include:

- At least 25% of crashes are distraction-related.

- Other visual, cognitive, auditory or biomechanical activities refer to the diversion of attention away from the primary task of driving due to distraction.

What is distraction?
How Do Cell Phones Cause Crashes?

Review of cell phone related crashes provides insight into how driver actions and responses associated with cell phone use lead to crashes.

- There are four categories of distraction:
  - Visual - e.g., Looking away from road to dial a number
  - Auditory - e.g., Started by ringing phone
  - Cognitive - e.g., Lost in conversation or thought
  - Biomechanical (manual) - e.g., Manipulating a device

These forms of distraction most often occur in some combination.
Briefing Outline

- DR. Rounge With Policy Discussion
- NTSB Recommendations
- Estimated Crash Risk
- Research Studies
- States' Legislation/Regulations
- Concerns of the American People
- Crash Data and Cell Phone Use
- Current Cell Phone Usage Rates
- Industry Data and Position
Overall Growth in Cell Phone Use

Service Revenues of $78 Billion in 2002

Cell Phone Growth
CTIA Safety Tips

1. Get to know your phone and its features, such as speed dial and redial.
2. When available, use a hands free device.
3. Position your phone within easy reach.
4. Let the person you are speaking to know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions.
5. Do not take notes or look up phone numbers while driving.
6. Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic.
7. Do not engage in stressful or emotional conversations that may divert your attention from the road.
8. Dial 9-1-1 to report serious emergencies – it’s free from your wireless phone!
9. Use your phone to help others in emergencies.
10. Call roadside assistance or a special non-emergency wireless number when necessary.

NHTSA, For Internal Use Only, July 2003
Drivers who use cell phones reported an average of 4.5 minutes per cell phone call (19% of estimated 4.2 billion weekly trips).

Estimated 79.2 million trips each week in which drivers take incoming and Behaviors

2002 National Survey of Distracted and Drowsy Driving Attitudes

Estimated Exposure Time: 7.4 million hours per day in daytime daylight hours

60% of drivers using a handheld or hands-free cell phone during

2002 NOPS

Estimated Exposure Time: 4.7 million hours per day in daytime daylight hours

4% of drivers using a handheld or hands-free cell phone during

2000 NOPS
more in-depth crash investigation

witnesses or access to phone records even with

factor in a crash is very difficult without a

Identifying cell phone use as a contributing

Wisconsin

Virginia

New York

California

Some states have initiated special studies

contributing factor at the PAR level

Cell phones not often reported as a

Crash Data
Compared to about 70% of drivers who do not use cell phones, use. About 40% of drivers who use cell phones support such fines.

- 62% support increased fines for traffic violations involving cell phone use do not use cell phones.
- 69% of drivers who use cell phones support such a ban compared to 69% of drivers who car is moving (except for 911 calls). About one-fourth of drivers who a wireless phone use while a 77% of all drivers support a ban on all wireless phone use while a 88% of all drivers support increased public awareness of the risks.

Indicate that:

For example, data from 2002 national survey non-users. For example, data from 2002 national survey there are clear differences in the opinions of users and and willingness to accept some restrictions. However, concern over the safety of using cell phones while driving.

<table>
<thead>
<tr>
<th>Public Opinion</th>
<th>Legislative Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
issue in the last year.

more than 30 states have considered legislation on the

issue.

issue.

a few states have prohibited local restrictions.

several states have set up special data collection activities on this

several states have established Task Forces and/or

several states have restricted use of cell phones by

several local jurisdictions have also restricted hand-held

several states have restricted use while driving.

several states have restricted use while driving.

several states have restricted use while driving.

several states have restricted use while driving.

several states have restricted use while driving.

ny is still the only state to restrict use of hand-held

state activity

legislative update
school bus.

prohibits the use of cell phones while operating a

Arkansas, Illinois, Massachusetts, New Jersey, Rhode

while driving.

an Instruction permit from using a mobile telephone

license. This legislation also prohibits drivers with only

educational and training prior to obtaining a driver’s

under 21 to obtain an Instruction permit and receive

Maine enacted legislation in 2003 that requires persons

vehicle, with emergency exceptions.

any wireless device while operating a motor

the holder of a driver’s examination permit from using

New Jersey enacted legislation in 2002 that prohibits

State Activity

Legislative Update:
Some with both voice dialing and voice command

- Some with voice dialing
- Headsets, earpieces, and speakersphones on the driver.

many forms, and they differ significantly in demands

It should be noted that hands-free phones come in

and for longer durations.

who use hands-free phones use them more frequently

Whereas hands-free phones may have some

risk while driving although the mechanisms may differ.

Both hand-held and hands-free architectures increase
National Occupant Protection Use Survey (NOPUS) and observational research such as NHTSA's naturalistic on-the-road research (controlled and using driving simulators) in the laboratory. Driving and traffic safety associated with cell phone use while driving since the early 1990s directed at issues sponsored by independent and NHTSA. Experimental Research.
Examined distraction from a number of in-vehicle devices, including cell phones.

Test Track

Experimental Research

NHTSA
NHTSA

Experimental Research: Test Track
NHTSA
Experimental Research

- Test Track
  - Examined distraction from a number of in-vehicle devices, including cell phones

- NADS
  - Examination of driver performance and behavior using different cell phone architectures
Diagnosing A Handheld Cell Phone => Breaks Hard to Avoid Hitting Forward Vehicle

Front Forward Vehicle

Task => Crashes Into

Hands-Free Phone

Side of Road

Task => Runs of Right

Handheld Phone

Experimental Research: NADS

NHTSA
Typical on-road driving conditions capture cell phone use under 100-car naturalistic study that will examine driver performance and behavior using different cell phone architectures.

- Naturalistic
- NADS
- Test Track
- Examined distraction from a number of in-vehicle devices
- Including cell phones

Experimental Research

NHTSA
Answering Handheld Cell Phone = Runs off Right Side of Road

A Personal Hygiene Conversation
Handheld Phone

Forward Vehicle = Crashes Into Eating While Driving

Experimental Research: Naturalistic

NHTSA
A Tragic Example

...
do not justify restrictions.

Both groups conclude that benefits and costs

2,600 fatalities per year (includes responsible drivers and others)

2002

900 fatalities per year

2000

Harvard Center for Risk Analyses

1999

78 fatalities per year (range 10-1,000)

Studies

AEI-Brookings Joint Center for Regulatory

Cost Benefit Studies
Driving "attributable risk due to cellular phone use while driving" handling is responsible for most of the dialing/handling since it may be that conversation per se rather than designs are significantly safer than hand-held devices, it is not clear whether hands-free cellular phone use is safer than other road users. However, they note that the magnitude of this risk is unknown.

"The weight of the scientific evidence to date suggests that use of a cellular phone while driving does create safety risks for the driver and his/her passengers as well as other road users."

2000 Harvard Study Notable Comments from
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>TIPS WHILE MAKING OUTGOING CALL PHONE CALLS PER DAY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>TIPS WHILE TAKING INCOMING CALL PHONE CALLS PER DAY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>DAYLIGHT MILES DRIVEN USING A CELL PHONE PER DAY</strong></td>
</tr>
<tr>
<td></td>
<td><strong>DAYLIGHT HOURS OF CELL PHONE USE WHILE DRIVING PER DAY</strong></td>
</tr>
<tr>
<td><strong>111,000,000 trips per day</strong></td>
<td>(derived from National Survey of Disrupted and Drowsy Driving Attitudes and Behaviors)</td>
</tr>
<tr>
<td><strong>113,000,000 trips per day</strong></td>
<td></td>
</tr>
<tr>
<td><strong>243,800,000 miles per day</strong></td>
<td>(derived from 2002 NOPUS data)</td>
</tr>
<tr>
<td><strong>7,490,000 hours per day</strong></td>
<td>(derived from 2002 NOPUS data)</td>
</tr>
<tr>
<td><strong>801,000 drivers per moment</strong></td>
<td><strong>DAYLIGHT MOMENT (2002 NOPUS)</strong></td>
</tr>
<tr>
<td><strong>6%</strong></td>
<td><strong>NUMBER OF DRIVERS USING CELL PHONES DURING THE AVERAGE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PERCENT OF DAYLIGHT DRIVING TIME SPENT USING A CELL PHONE</strong></td>
</tr>
</tbody>
</table>

**NHSTA Estimates of Exposure**

**While Driving in 2002**
Exposure

Recent studies also indicate a much larger degree of

Recent studies indicate a much smaller RR (1.38)

Low Exposure

Risk (RR) Factor (4.3) Based on Earlier Research and

Most Published Analyses Have Used a High Relative

Estimate the Duration of the Distraction Activity

Estimate the Increase Risk Due to the Distraction

Purpose – Predict Increase in Total Risk of Crashes

Relative Risk Models
Relative Risk Based on Results From Recent Studies

Summary of Estimated Total Risk of Crashes as Function of Exposure Time and

Plotting Estimates of Total Risk of Crashes Across All Drivers
Relative Risk Based on Results From Recent Studies

Summary of Estimated Total Risk of Crashes as Function of Exposure Time and

Plotting Estimates of Total Risk of Crashes Across All Drivers
<table>
<thead>
<tr>
<th>CP = Cell Phone Use a Contributing Factor to the Crash</th>
<th>Estimated Fatalities (CP)</th>
<th>Estimated Fatal Crashes (CP)</th>
<th>Estimated Injury Crashes (CP)</th>
<th>Contributing Factor to the Crash</th>
<th>Contributing Factor to the Crash</th>
</tr>
</thead>
<tbody>
<tr>
<td>1148</td>
<td>955</td>
<td>508</td>
<td>0</td>
<td>(Reported plus Non-Reported)</td>
<td></td>
</tr>
<tr>
<td>1117</td>
<td>455</td>
<td>0</td>
<td>0</td>
<td>(Reported plus Non-Reported)</td>
<td></td>
</tr>
<tr>
<td>71,685</td>
<td>54,864</td>
<td>29,184</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>241,243</td>
<td>184,636</td>
<td>98,214</td>
<td>0</td>
<td>(Reported plus Non-Reported)</td>
<td></td>
</tr>
<tr>
<td>314,046</td>
<td>240,355</td>
<td>127,853</td>
<td>0</td>
<td>(Reported plus Non-Reported)</td>
<td></td>
</tr>
<tr>
<td>182,894</td>
<td>139,784</td>
<td>74,495</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,096,962</td>
<td>6,139,378</td>
<td>6,204,897</td>
<td>6,279,356</td>
<td>(Reported plus Non-Reported)</td>
<td></td>
</tr>
<tr>
<td>1,0300</td>
<td>1,0228</td>
<td>1,0120</td>
<td>1,0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RR=1.5</td>
<td>RR=1.38</td>
<td>RR=1.2</td>
<td>RR=1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Con servative Risk Levels

Given 6% Exposure Time (AT=0.06)

NHTSA 2002 Crash Estimates

Year 2002
Distribution of Estimated Fatalities in which Cell Phone Use was Contributing Factor

By State for 2002, RR=1.38
combined.

Wireless Internet, compared with 22% of all users
wireless data services, including SMS and the
Frequefly use

45% of young adults say they frequently use

Use of SMS and other 2-way messaging services

has increased from 12% in 2001 to 20% in 2002.

month, compared to 20% of all users.

Wireless service for more than 500 minutes per

About 35% of young adults (ages 18-24) use their

indicating the following:

Results from 2002 quarterly Telephila surveys

Mobile Phone Use

Future Directions in U.S.
Wireless telephone.

Speed and distraction caused by use of a handheld vehicle (she had just purchased it that evening), a combination of inexperience, unfamiliarity with the controls of her vehicle in the windy conditions due to crash was the Explorer driver's failure to maintain control.

The Board found that the probable cause of the crash was the Explorer driver's failure to maintain control at the moment she lost control of her vehicle, including a driver who was using a wireless phone at the moment of crash that took the lives of 5 persons.

NTSB Report / Hearing

Maryland

Interstate 95/495 (the Capital Beltway) near Largo,
Using Intersective Wireless Communication devices while driving.

Proprietary holders of Learner's permits and Intermediate Licenses from
To the 49 States that do not have such legislation, enact legislation to

Safety Recommendations to the States

Congress and the States:

Develop on highway safety and report findings to the United States

Determine the magnitude and impact of driver-controlled, in-vehicle

Emphasizes the risks of engaging in distracting behavior.

Education Association a module for driver education curriculums that

Develop in conjunction with the American Driver and Traffic Safety

Campaign stressing the dangers associated with distracted driving.

Develop in conjunction with The Advertising Council, Inc., a media

Safety Recommendations to NHTSA

June 3, 2003

NTSB Recommendations
This NHTSA position has not been widely publicized.

Rosalyin G. Millman, NHTSA Acting Administrator, July 18, 2000

Statement

Last Official NHTSA

[emphasis added]

...
If you have to make or receive a call, look for a safe opportunity to pull over and park.

- If you're expecting an important call, let someone else drive.

- If there are passengers in the vehicle, let one of them take or make a message.

- Turn the phone off before you start driving. Let callers leave a phone number for callbacks.

To avoid collisions arising from the use of cell phones:

- Operation of the vehicle.

  (Your primary concern is the safe risk of collision.)

- Distraction while driving. It is distracting and increases the risk of collision.

Transport Canada recommends against using cell phones while driving.

Transport Canada Fact Sheet RS200-06 (TP2436E, December 2001) 65.69

Safety Tips from Transport Canada
GSA (2002)

- Recommended policy (FMR Bulletin B-2) on the use of wireless phones while driving motor vehicles owned or leased by the Federal Government. Federal agencies should:
  - Discourage the use of hand-held wireless phones by a driver while operating motor vehicles owned or leased by the Federal government.
  - Provide a portable hands-free accessory and/or hands-free car kit for government owned wireless phones.
  - Educate employees on driving safely while using hands-free wireless phones.
This recommendation applies to both hand-held and hands-free devices. The risk of crash and injury increases when using wireless communications devices while driving can be distracting and increase the undivided attention and focus on the driving task. This requires the driver's primary responsibility is to operate the vehicle safely.

Recommendations to OST, July 2002

NHTSA Proposed Policy
Guidelines for Implementation

NHTSA Proposed Policy

Guidelines for Implementing them.

All drivers should follow these guidelines:

- Stop the vehicle in a safe location that is off the road, well away from traffic, before they receive or place their calls.
- Allow a passenger to receive or place calls.
- Use the phone’s voice mailbox feature if so equipped, and return the call when not driving.
- All drivers should follow these guidelines;
- Instead of drivers who use wireless communication devices should not use them while driving.
- Drivers who use wireless communication devices should not use them while driving.

Guidelines for Implementation, July 2002