

International Conference on
Distracted Driving

October 2-5, 2005

Conférence internationale sur la
distracted au volant

2 au 5 octobre 2005

**International Conference
on Distracted Driving**

Summary of Proceedings
and Recommendations

Presented by:



TRAFFIC
INJURY
RESEARCH
FOUNDATION



About the CAA

CAA is a federation of 9 automobile clubs serving 4.7 million members through 130 offices across Canada. CAA provides a wide range of member services and works to improve travelling and motoring conditions at home and around the world. More information about CAA is available at: www.caa.ca.



About TIRF

Established in 1964, TIRF's mission is to reduce traffic-related deaths and injuries. TIRF designs, promotes and implements effective programs and policies, based on research. More information about TIRF is available at: www.trafficinjuryresearch.com.



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International Conference on Distracted Driving

Summary of Proceedings and Recommendations

April 2006

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Message from CAA and TIRF

The Canadian Automobile Association (CAA) and the Traffic Injury Research Foundation (TIRF) are pleased to present the findings and recommendations from the first International Conference on Distracted Driving.

In recent years, the issue of driver distraction has received increasing attention from the media, public, government, industry and safety organizations. Initially, much of the concern focussed on the use of cell phones. Legislators were urged to take action, without having much evidence-based research to support decision-making.

It is now recognized that the sources of distraction inside and outside the vehicle are diverse, their potential impact on the safe operation of the vehicle is varied, and the means for controlling them extend well beyond legislation.

To examine the state-of-knowledge about this issue and to consider what steps need to be taken to minimize the risks associated with distracted driving, we assembled a group of internationally recognized leaders in the field to share their knowledge about the problem and how to deal with it effectively. Delegates enriched and expanded this information by participating in Workshops that explored what additional research is needed and how to deal with

the problem through awareness and education, technology, legislation and regulation.

This report integrates and summarizes key information from presentations made at the conference as well as the conclusions and recommendations generated by conference participants. We intend to disseminate these recommendations widely so they can provide guidance to a wide range of stakeholders.

We also take this opportunity to acknowledge the many government agencies, associations and companies in Canada and the United States that provided financial and in-kind support for the conference. They are recognized in the report. We also acknowledge the assistance provided by the Advisory Committee, whose expertise was vital in shaping the program and identifying speakers; the contribution of the experts who presented papers at the conference is gratefully acknowledged and their names appear in the program. Workshops at the conference were critical for identifying and achieving consensus on research, program and policy needs. We acknowledge the volunteers who served as workshop moderators as well as the over 100 delegates whose insights and expertise contributed so much to the success of the conference.



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Executive Summary

Distracted driving is receiving increasing attention from the media, government, industry, safety organizations, and the public. Initial concern stemmed from the rapidly-rising and highly visible use of cell phones while driving. But there are many other sources of driver distraction both inside and outside the vehicle. Their effects on safety can be quite varied and the potential strategies to address them are equally diverse.

The International Conference on Distracted Driving was organized by the Canadian Automobile Association (CAA) and the Traffic Injury Research Foundation (TIRF). Sponsored by 17 government and private sector agencies, it brought together over 100 delegates from Canada, the United States and abroad, representing a diverse group of stakeholders.

The conference included a blend of formal presentations by internationally recognized traffic safety experts and small-group problem-solving workshops. This report integrates and summarizes key information from the presentations as well as the conclusions and recommendations from the workshops. These recommendations, generated by conference participants based on their collective conclusions about distracted driving, are intended to provide guidance to a wide range of stakeholders.

What is distracted driving?

One goal of the conference was to develop a comprehensive working definition of distracted driving. In its absence, widely differing views about the causes and magnitude of the problem will result.

Building on a preliminary definition provided by speakers, conference delegates developed a working research definition for distracted driving:

Distraction involves a diversion of attention from driving, because the driver is temporarily focusing on an object, person, task, or event not related to driving, which reduces the driver's awareness, decision-making, and/or performance, leading to an increased risk of corrective actions, near-crashes, or crashes.

This definition has several important implications:

- Distractions exclude pre-existing conditions, including impairment by alcohol or drugs, fatigue, and psychological state; however, any of these can make it easier for a driver to be distracted or can change the effect of a distraction.
- Distractions are affected by personal characteristics such as age and medical conditions.
- Distractions are affected by driving conditions and situations.
- Distractions need not produce immediate consequences such as corrective actions or crashes, but do increase the risk of these consequences.

Delegates also agreed that simpler versions of this definition will be needed for some audiences, such as the media and general public but the agreed-to definition provides a solid foundation for further research and policy discussion on why distraction can be so risky and what measures can be taken to address it.

How common is distracted driving and how risky is it?

The available evidence paints a suggestive but incomplete picture of the risks posed by distracted driving. Laboratory-based simulator studies show that distractors can affect the skills and capabilities needed for driving. Observational studies show that such distractions do occur in real world settings and that they do impact driver performance. Crash-based studies show that distractions are present in a substantial number of collisions.

The convergence of the evidence clearly shows that driver distraction is an important issue for road safety. At the same time, the quality and quantity of the existing evidence is insufficient to state with confidence how risky distracted driving is, and among the many distractions, which pose the greatest risk, and under what circumstances.

Conference delegates concluded that much remains to be learned about the frequency of, and relative crash risk posed by, distracted driving. Delegates recommended additional research on:

- crash risks posed by different distractions;

- methods to protect drivers against the risks of distractions;
- societal costs of distracted driving;
- driver knowledge of and attitudes toward distracted driving, in particular attitudes on the use of driving time for phone calls and other work- and family-related tasks; and
- factors that would motivate drivers to change their behaviour.

This research will require several types of reliable data:

- exposure data, using direct observations of driving or observations taken from outside of vehicles, to determine the frequency and risks associated with different distractions;
- crash data from special studies (preferably with investigators arriving at the crash scene to interview participants), or from “black box” crash recorders, to more accurately determine the role of distractions in crashes;
- data from simulator, test track, and on-road studies to investigate the effects of different distractions on driving-related tasks and actual driving performance; and
- focus group and survey data, to gauge driver knowledge and attitudes.

Delegates urged researchers to use standardized methods for data collection and standard definitions for variables, to permit meaningful comparisons across studies. They recommended that data be easily accessible and available to all qualified researchers and users. Research findings should be widely disseminated and communicated effectively to regulators and policymakers.

Dealing with distracted driving: Awareness and education

Public awareness campaigns can be very distinct in purpose and approach from educational approaches. At the same time the two can be very complementary – for example, it can be argued that in making drivers aware of a problem, it is also necessary to tell them how to deal with it (i.e., to educate them). Correspondingly, formal educational/training initiatives also heighten awareness about the problem. Conference delegates agreed that awareness and education are needed to increase the

public’s understanding of distracted driving, raise its priority in comparison to other traffic safety issues, and encourage safe driving actions.

Awareness and education activities should follow several guiding principles:

- Target specific behaviours and audiences; avoid general messages such as “everyone should pay attention while driving”.
- Use positive messages, perhaps incorporating social norming techniques (“join the majority”).
- Encourage specific behaviours based on best practices.
- Be truthful and memorable.

Specific target audiences and delivery mechanisms may include:

- young and novice drivers, through driver education and Graduated Driver Licensing (GDL) programs, driver training manuals, driver testing centers, and internet websites;
- senior drivers, through medical offices and community programs;
- high risk drivers, through required remedial driving courses;
- employees of individual companies, through company policies and programs; and
- “influencers,” such as role models, leaders, children, through various methods, including peer-to-peer programs.

Awareness and education programs should be carefully constructed and tested using focus groups or similar methods. Cooperative efforts among government, industry and the research community are to be encouraged to enhance not only the accuracy of the information communicated but its reach and penetration. Programs should be evaluated using surveys to measure awareness, knowledge, and recall. Controlled studies in corporate settings may be useful for both testing and evaluating new programs. Bottom-line evaluation through observed changes in driving behaviour or crash rates would be the ultimate measure of success, but will be very difficult to conduct successfully.

Dealing with distracted driving: Technology

A key point is that technology is developing rapidly. The electronics industry has introduced many new products in a short period of time that may affect driver distraction; and it is developing many more. Several trends are worth noting and warrant monitoring:

- Electronics and telematics devices are becoming multi-functional. For example, the device “previously known as a cell phone” now can send and receive email, take pictures, and provide location and route information.
- Devices are becoming increasingly portable, no longer attached to a telephone line or an automobile. Consumers can bring their communications and entertainment with them wherever they go.
- The industry is highly diverse, ranging from traditional suppliers of original and aftermarket automobile equipment to consumer electronics manufacturers. It does not fit well within the traditional automobile industry regulatory structure.
- New products are developed, introduced, and modified very rapidly. For example, a typical user replaces his or her cell phone every 18-24 months.

These characteristics challenge the traditional methods of ensuring the safety of vehicles and equipment through regulation.

Conference delegates agreed that it is critical to assess the distracting potential of current and emerging technologies. Since adequate methods to do this do not exist currently, research is needed both to refine current methods and to develop new ones. The research should be a shared responsibility of national Canadian and United States governments and of the technology industries involved, including the product manufacturers, service providers, and consumer groups, and should be conducted cooperatively. The research should:

- include technologies supplied as original and aftermarket equipment as well as portable electronic devices used in vehicles;
- study effects on specific high-risk groups, such as novice drivers and older drivers;
- work hand-in-hand with manufacturers of the

technology products and the industries that incorporate them in their own products to be able to react quickly to rapidly-moving technology research, development, and implementation; and

- consider both the cumulative effects and the interactive effects of multiple technological or telemetric devices.

Some overall guiding structure such as a memorandum of understanding (MOU) between and among the producers and regulators may be useful to plan, allocate, and coordinate the research.

Ultimately this research may lead to performance standards to minimize the distracting effects of technology. If feasible, performance standards should be consistent for original, aftermarket, and portable devices, and should not limit product innovation. Until and unless performance standards can be developed based on solid research, other methods should be used:

- Best practice guidelines for manufacturers should continue to be developed and refined, guided by research. Manufacturers should be encouraged to follow these best practice guidelines in all product research and development.
- Drivers should be informed of the potential distracting effects of technology and educated in the appropriate ways to use technology safely. Methods to do this may include awareness and education discussed previously as well as more specific activities such as labels on equipment, instruction manuals, ratings of distraction potential similar to the NCAP ratings of vehicle safety performance, or even training for drivers in how to use specific equipment safely.

Continued research is also needed on technological systems to reduce risk. Adaptive cruise control, lane departure and collision warning, and other technological systems have far-reaching implications and should be studied thoroughly before being implemented. Issues include:

- interaction effects between vehicles equipped with these systems and other vehicles lacking the systems, and
- behavioural adaptation: will drivers drive less attentively or safely if they believe that these systems will protect them from crashes?

Dealing with distracted driving: Legislation, regulation and enforcement

Conference delegates agreed that current laws regarding distracted driving do not address the problem adequately. While laws may be improved in certain areas, delegates agreed that laws and enforcement alone cannot reduce distracted driving substantially. Recommendations in this area thus include a mix of traffic laws, standards, and programs:

- Consider prohibiting all cell phone and other electronic communication device use by youth with graduated driver license learner's permits or provisional licenses.
- Develop and require safety standards, ratings, and labels for aftermarket telematics.
- Encourage employers to adopt policies for their employees to reduce potential driving distractions.
- Encourage provinces and states to adopt consistent practices for reporting potential driver distractions that may have contributed to crashes, including the use of cell phones and other telematics, on police accident report forms.
- Investigate the role of automobile insurance in reducing distracted driving, either through premium reductions (such as for drivers who pledge not to use telematics) or variations in coverage depending on specific driving circumstances (such as reduced coverage if drivers are found to be engaged in specified distracting activities at the time of a crash).

To have maximum effect, laws intended to reduce distracted driving should follow the same principles as all good traffic safety laws. They should:

- be written well, without loopholes or unintended consequences;
- place minimal burden on law enforcement in observing and documenting the prohibited behaviour and in documenting and assisting in the prosecution of the offense; and
- have the full support of prosecutors and judges.

Concluding observations

Distracted driving has several characteristics that make it difficult to manage:

- It arises from a broad range of events, objects and activities outside and inside the vehicle.

- It involves lifestyle issues, not just driving issues, including the almost natural propensity to attend to objects, events or activities that are new, novel or engaging. Being distracted is virtually a way of life.
- Driving time is increasingly viewed as unproductive so it is seen as an opportunity for accomplishing other tasks – to maintain seamless communications with the office and home, and sustain personal contact.
- Distractions occur at different levels and must be dealt with continually while driving. Attention is constantly divided among a variety of tasks or events, taxing the information processing capacities of drivers differentially and encroaching on their margin of safety. In this respect, distracted driving is far more difficult to influence than safety belt use, which requires only a single brief action when entering the vehicle.
- Technology development, especially in consumer electronics, is moving far faster than traditional motor vehicle development, regulation, or legislation.
- The consumer electronics industry is not accustomed to considering how its products affect driving; conversely, the motor vehicle safety and regulatory structure is not well equipped to interact with consumer electronics.
- While there are many driver distractions that increase crash risk, cell phones and other telematics are at the cutting edge of the issue for the public, legislators, and governments.

The presentations, discussions, and deliberations of this conference led to several general conclusions:

- There is no single answer to the problem: neither laws, nor education and awareness, nor product standards and regulations alone, will eliminate or even reduce substantially the causes of, or the crashes resulting from, distracted driving. The problem is multidimensional; the solutions are manifold and complementary.
- Distracted driving involves all three of the traditional traffic safety countermeasure areas: the roadway environment, the vehicle, and the driver. Effective strategies to reduce the causes or risks of distracted driving will require interdisciplinary thinking that understands the interactions between the three areas.

- There are three essential keys to progress:
 - Research and data: we need to know far more about the problem – which distractions are most important, who is most at risk, when, where and why – in order to develop effective prevention strategies.
 - Awareness and education: an informed public and informed decision-makers acting on the best available evidence are critical for engendering a rational environment for prevention initiatives.
 - Cooperative government-industry efforts: cooperation is needed across national borders (beginning with Canada and the United States) and industry boundaries (auto manufacturers, aftermarket firms, consumer electronics).

Distracted driving is an important contributor to crashes. Distractions due to new vehicle and aftermarket technology, telematics, and portable electronics, need especially serious study. With the extremely rapid pace of

electronics and telematics development, there is a need to be vigilant about how these changes might affect crash risk. Developments should not occur in isolation; due consideration is needed about how they interact with each other and how they may affect drivers.

Recommendations

In summary, there was a consensus among conference delegates that distracted driving is an important traffic safety issue about which far too little is known, and that distracted driving likely will become increasingly important. Delegates urged all organizations and persons involved in traffic safety, including government agencies, automobile and electronics manufacturers, and traffic safety organizations, to act promptly and cooperatively to acquire the needed data, conduct the critical research, and investigate appropriate strategies for reducing distracted driving in a rapidly-changing driving environment.

Introduction

Distracted driving is receiving increasing attention from the media, government, industry, safety organizations, and the public. Initial concern stemmed from the rapidly-rising and highly visible use of cell phones while driving. But there are many other sources of driver distraction both inside and outside the vehicle. Their effects on safety can be quite varied and the potential strategies to address them are equally diverse.

To address this critical issue, the Canadian Automobile Association (CAA) and the Traffic Injury Research Foundation (TIRF), organized and hosted the first ever International Conference on Distracted Driving in Toronto, Ontario, Canada, at the Hilton Toronto Hotel on October 2-5, 2005. Co-sponsored by 17 government and private sector agencies (see Appendix I) and assisted by an Advisory Committee (see Appendix II), the objectives of the Conference were to:

- determine what is known about the extent of driver distraction, its causes, and consequences;
- determine what programs and policies can address distraction, and how effective they have been;
- develop a cooperative plan of action for dealing with distracted driving; and,
- improve communication, understanding, and awareness of the issue of distracted driving to facilitate cooperation.

Over 100 delegates from Canada, the United States, and abroad participated. The diversity of representatives from government, the business community, research, enforcement and the health and safety sectors (see Appendix V) reflected the breadth of interest in, and concern about, distracted driving. This was further underscored by the extensive local, national, and international media coverage generated by the conference.

The format of the conference was designed to maximize an informed exchange of information. Plenary sessions featured internationally recognized traffic safety experts (see Appendix III) who presented the latest information and research results on all aspects of distracted driving

risks, causes, and countermeasure strategies. In small-group workshops following each plenary session, delegates discussed key issues raised by moderators (see Appendix IV), provided comments and suggestions, developed recommendations and identified priorities for action.

This report integrates and summarizes key information from the plenary papers (plenary presentations are available on the Conference website: www.distracteddriving.ca) and outcomes from the workshops. The structure of the report follows the conference agenda. The recommendations contained in this report are the product of conference participants based on their collective conclusions about distracted driving. They are intended to provide guidance to a wide range of stakeholders and will hopefully be widely disseminated.

What is distracted driving?

To study what gives rise to driver distraction, the extent to which it contributes to road crashes, and how to deal with it effectively, the concept must be clearly defined. One goal of the conference was to develop an appropriate working definition of distraction. Although the term has been used extensively in the traffic safety research literature, it has often not been adequately defined.

Several attempts to define distraction do appear in the literature. One author noted that distraction occurs when a driver is delayed in recognizing information needed to safely accomplish the driving task because some event, activity, object or person, either inside or outside the vehicle, compels or tends to induce the driver to shift attention away from the driving task. More succinctly stated, driver distraction may be characterized as any activity that takes a driver's attention away from the task of driving. Accordingly, any distraction, from rolling down a window to using a cell phone could potentially contribute to a crash by diverting attention away from the primary task of operating the vehicle.

An essential component of distraction is attention. Some have suggested that distraction does not really involve a

lack of attention (inattention) but rather a “misallocation of attention” because the attention directed at the distraction is simply inappropriate or incompatible with safe driving – i.e., it takes attention away from the critical functions needed for driving (Smiley 2005, Tasca 2005).¹

Driving can be a complex task that demands considerable attention. Primary driving tasks include such things as steering, accelerating, braking, speed choice, lane choice, manoeuvring in traffic, navigation to destination, and scanning for hazards. Secondary tasks include all the other things drivers do that are not related to driving per se. These secondary tasks, which can distract the driver from the primary task of driving, are manifold and include such things as eating/drinking, grooming, reading billboards, using and adjusting in-vehicle entertainment devices, conversation with passenger(s), viewing the scenery, tending to children and pets, smoking, cell phone use and related conversation, use of other wireless communication devices, and note-taking, to name a few. It is important to recognize that not all distractors involve secondary tasks initiated by the driver – they can be initiated by events, objects, activities or people both inside and outside the vehicle.

Attending to more than one task, event or object would not be an issue if drivers could deal with them simultaneously – i.e., if humans could process information from several sources in parallel. However, we are serial information processors, capable of attending to only one thing at a time. While most people believe they can do several things simultaneously, what is commonly called multi-tasking actually involves a rapid shift of attention from one cognitive task to the other (Smiley 2005).

Driving is already a divided attention task, requiring the driver to multitask. Accordingly, when a secondary task or event – a distraction – occupies the driver’s attention, focus on the primary tasks involved in driving is disrupted. Obviously, depending on factors such as the duration of distraction, when it occurs, where it occurs and with whom, the consequences can be disastrous.

Building on these concepts, and a preliminary definition provided by Tasca (2005), conference delegates developed

a working research definition for distracted driving. It was defined as follows:

Distraction involves a diversion of attention from driving, because the driver is temporarily focusing on an object, person, task, or event not related to driving, which reduces the driver’s awareness, decision-making, and/or performance, leading to an increased risk of corrective actions, near-crashes, or crashes.

This definition has several important potential implications:

- Distractions exclude pre-existing conditions, including impairment by alcohol or drugs, fatigue, and psychological state; however, any of these can potentially make it easier for a driver to be distracted or can change the effect of a distraction.
- Distractions may be affected by personal characteristics such as age and medical conditions.
- Distractions may be affected by driving conditions and situations.
- Distractions need not produce immediate consequences such as corrective actions or crashes, but do increase the risk of these consequences.

Finally, delegates agreed that simpler versions of this definition will be needed for some audiences, such as the media and general public but the agreed-to definition provides a solid foundation for further research and policy discussion on why distraction can be so risky and what measures can be taken to address it.

¹The references cited in this report are to papers presented at the conference. More detailed information and additional references can be found in those presentations – see www.distracteddriving.ca

How common is distracted driving and how risky is it?

How common is distracted driving?

Distractions while driving are common, as documented in recent telephone surveys in Canada and the United States. For example, as summarized by Beirness (2005), substantial proportions of the driving public in the U.S. admit that they engage in distracting activities. For example, as shown in Table 1, 81% say they talk with passengers, 49% admit that they eat or drink while driving and 12% admit they read maps while driving.

A more important question is how frequently these distractions occur during these driving trips. Although, information on frequency is very limited, the U.S. survey also obtained estimates regarding how often drivers said they engaged in each of these activities. This information was used to calculate the number of trips that occur each week when the driver is engaged in these distracting activities. As can be seen in the table, the number of trips per week when drivers are engaged in a distracting activity are indeed substantial.

A more direct way to determine the prevalence of distractors is to observe drivers in real-world settings. One

study (see Stutts 2005) using in-vehicle video cameras to record the actions of 70 participants for one week yielded the estimates shown in Figure 1. Nearly 5% of the total driving time involved eating/drinking. Collectively, a considerable amount of the driving time involve potentially distracting activities.

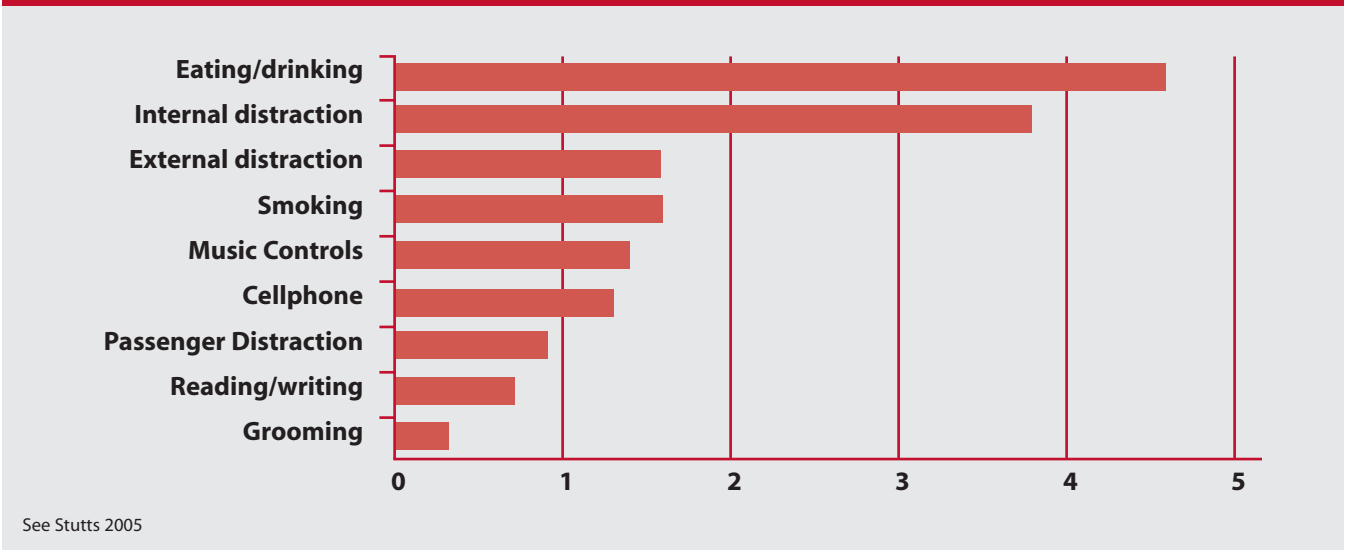
In summary, there is evidence that many drivers are confronted by a variety of distracting events, activities and objects and that some of them (e.g., eating/drinking) can occupy a reasonable amount of time while driving.

Table 1 • Percent of Drivers who Engage in Various Activities and Their Frequency of Occurrence

81% talk with passengers	2.38 billion trips weekly
66% change radio or CD	1.92 billion
49% eat or drink	1.25 billion
26% make or take cell phone calls	792 million
24% deal with kids	776 million
12% read maps	414 million
8% personal grooming	349 million

See Beirness 2005

Figure 1 • Percent of Total Time While Driving Engaged in a Potentially Distracting Activity



How risky is distracted driving?

The critical question is whether these distractions increase crash risk. The answer to this seemingly straightforward question is more illusive than might be expected, in part because research in this field is in its relative infancy. Like most areas of research in traffic safety, research on distracted driving employs a variety of research methods: surveys, observations, crash-based studies, and laboratory-based experimental designs.

In surveys, the researcher asks people to provide information about their practices, experiences, opinions and concerns – for example, how often they see drivers doing things they think are distracting, how often they do it themselves, how concerned they are about this problem, and what they think should be done about it (Beirness 2005, Rudin-Brown 2005, Walker 2005).

Observational studies focus on what people actually do rather than on what they say they do. Using trained observers or electronic recording devices, the researcher monitors real-world driving situations to see what distractions arise, how drivers react and what the outcomes are.

Crash-based studies are retrospective. They begin with the outcome (the collision itself) and endeavour to reconstruct what factors were associated with, or contributed to, the collision. Various levels of analysis have typically been used to achieve this, ranging from reliance on police accident reports to more in-depth multi-disciplinary investigations by a team of experts (Stutts 2005). It is noteworthy that estimates based on police reports are hampered by the fact that most jurisdictions do not even include driver distraction as a category for police to check when assigning a potential cause (Sundeen 2005).

Laboratory-based research, much of which recently has relied on simulators, typically uses experimental research designs that allow the investigator to systematically introduce conditions to the driver in a controlled environment and monitor a wide range of performance measures (Strayer 2005).

Each of these approaches provides a slightly different window on the problem, and no one approach can

provide all the information needed for rational decision-making. It is through the convergence of evidence arising collectively from all approaches that solid facts emerge (Bellavance 2005).

Each method has strengths and limitations and because of this no study is definitive. There is also no single research approach or design that will answer all the questions about the magnitude and characteristics of the problem and the risks it poses. Each provides a slightly different window or perspective on the problem. It is the weight and convergence of evidence from various approaches that provides the basis for informed decision-making.

What does the research on distracted driving show?

The Crashworthiness Data System (CDS) of the U.S. National Highway Traffic Safety Administration (NHTSA) uses trained staff to conduct extensive after-the-fact investigations of a sample of crashes annually. In the 2003 CDS data, 12% of the crashes were judged to involve at least one distracted driver and another 10% involved at least one driver who “looked but didn’t see” (Stutts 2005). For this reason, NHTSA conservatively estimates that driver distractions contribute to 25-30% of crashes (Stutts 2005). As noted previously, these estimates rely on subjective after-the-fact reports, so their validity is somewhat questionable.

However, telephone surveys show similar results, providing some level of confirmation about the extent of the problem. For example, about one-quarter of respondents in a NHTSA survey reported being involved in a crash in the past five years and about 14% attributed their crash to distraction (Beirness 2005).

The best information to date on the role of distraction in crashes comes from the recently-completed 100-car study conducted by the Virginia Tech Transportation Institute. This study monitored 100 cars in Northern Virginia for 12-13 months using in-vehicle video cameras and extensive vehicle instrumentation. The study recorded over 42,000 hours of driving, 761 near-crashes, and 72 crashes. Nearly 80% of all crashes and 65% of near-crashes involved driver inattention in the three seconds prior to the incident². It is

² www.vtti.vt.edu/documents/100-Car%20Naturalistic%20Driving%20Study%20Press%20Release.pdf
<http://www.vtti.vt.edu/documents/100-Car%20Naturalistic%20Driving%20Study%20Fact%20Sheet.pdf>.

important to note these estimates are substantially higher than those from other sources that rely on second-hand information.

To estimate the crash risk posed by distracted driving it is necessary to compare the frequency of distractions in crashes with their frequency in overall driving. Again, the best information comes from the 100-car study cited above. The risk of crashes and near-crashes did not increase when drivers were performing simple tasks but increased as much as seven times during some complex tasks.

Owing to their popularity and visibility, one type of distraction -- cell phones -- has been studied more extensively in recent years, producing several estimates of their contribution to crash risk.

Estimates of the risk vary considerably, so definitive conclusions are difficult to draw. But in one study, drivers observed using a cell phone were 10 times less likely to come to a complete stop at a stop sign than drivers not using a cell phone (Strayer 2005). Several crash-based studies using cell phone records to estimate phone use reported that crash risk was 4 to 6 times higher for drivers using cell phones (Bellavance 2005).

Summary

The available evidence paints a suggestive but incomplete picture of the risks posed by distracted driving. Laboratory-based simulator studies show that distractors can affect the skills and capabilities needed for driving. Observational studies show that such distractions do occur in real world settings and that they do impact driver performance. Crash-based studies show that distractions are present in a substantial number of collisions. The convergence of the evidence clearly shows that driver distraction is an important issue for road safety.

At the same time, the quality and quantity of the existing evidence is insufficient to state with confidence how risky is distracted driving, and among the many distractions, which pose the greatest risk, and under what circumstances.

Recommendations: Data and research needs

Conference delegates concluded that much remains to be learned about the frequency of, and relative crash risk posed by, distracted driving. Delegates recommended additional research on:

- crash risks posed by different distractions;
- methods to protect drivers against the risks of distractions;
- societal costs of distracted driving;
- driver knowledge of and attitudes toward distracted driving, and, in particular attitudes on the use of driving time for phone calls and other work- and family-related tasks; and
- factors that would motivate drivers to change their behaviour.

This research will require several types of quality data:

- exposure data, using direct observations of driving as in the 100-car study or observations taken from outside of vehicles, to determine the frequency and risks associated with different distractions;
- crash data from special studies (preferably with investigators arriving at the crash scene to interview participants), or from "black box" crash recorders, to more accurately determine the role of distractions in crashes;
- data from simulator, test track, and on-road studies to investigate the effects of different distractions on driving-related tasks and actual driving performance; and
- focus group and survey data to gauge driver knowledge and attitudes.

Delegates urged researchers to use standardized methods for data collection and standard definitions for variables, to permit meaningful comparisons across studies. They recommended that data be easily accessible and available to all qualified researchers and users. Research findings should be widely disseminated and communicated effectively to regulators and policymakers.

Public awareness and education on distracted driving

Distracted driving has only recently become an issue of some importance on the public and political agenda. It is, therefore, not surprising that the number of awareness and educational initiatives is limited and that few have been in operation long enough to be evaluated in terms of their impact.

Moreover, there is very little information available in the first place to guide awareness and educational efforts – for example, data on the level of public awareness and understanding about distracted driving are limited. It is not even known at this point how the public conceptualizes distracted driving. What is known, however, paints a somewhat confusing picture. For example, it is known that the driving public does not seem to consider distracted driving, in general, as an especially serious problem. In recent Canadian surveys, only 40% of respondents rated distracting driving as “serious” or “extremely serious” (Beirness 2005). They regarded drinking drivers, aggressive drivers, sleepy drivers, and children not in safety seats as more serious problems. By contrast, however, drivers using cell phones were cited as a serious or extremely serious problem by two-thirds of respondents, a level similar to aggressive drivers.

Comparable findings emerge if the public is asked to compare the safety concerns they have about cell phones to other sources of distracted driving. About 65% say that cell phones are more of a concern (Rudin-Brown 2005). In the United States, about half the respondents in a 2003 survey perceived both making outgoing calls and receiving incoming calls as dangerous (Sundeen 2005).

Such findings suggest that the public does not have a clear understanding of what distracted driving encompasses or how important it is as a safety issue. That is, the survey results suggest that the driving public does not understand what activities can distract drivers, the relative risks of different distractions, and how frequently crashes involve distracted drivers.

Recommendations: Enhancing awareness and education

Public awareness campaigns can be very distinct in purpose and approach from educational approaches. At the same time the two can be very complementary – for example, it can be argued that in making drivers aware of a problem, it is also necessary to tell them how to deal with it (i.e., educate them). Correspondingly, formal educational/training initiatives also heighten awareness about the problem. Conference delegates agreed that awareness and education are needed to increase the public’s understanding of distracted driving, raise its priority in comparison to other traffic safety issues, and encourage safe driving actions.

Awareness and education activities should follow several guiding principles:

- Target specific behaviours and audiences; avoid general messages such as “everyone should pay attention while driving”.
- Use positive messages, perhaps incorporating social norming techniques (“Join the majority”).
- Encourage specific behaviours based on best practices.
- Be truthful and memorable.

Specific target audiences and delivery mechanisms may include:

- young and novice drivers, through driver education and Graduated Driver Licensing (GDL) programs, driver training manuals, driver testing centers, and internet websites;
- senior drivers, through medical offices and community programs;
- high risk drivers, through required remedial driving courses;
- employees of individual companies, through company policies and programs; and
- “influencers,” such as role models, leaders, children, through various methods, including peer-to-peer programs.

Awareness and education programs should be carefully constructed and tested using focus groups or similar methods. Cooperative efforts among government,

industry and the research community are to be encouraged to enhance not only the accuracy of the information communicated but its reach and penetration. Programs should be evaluated using surveys to measure awareness, knowledge, and recall. Controlled studies in corporate settings may be useful for both testing and evaluating new programs. Bottom-line evaluation through observed changes in driving behaviour or crash rates would be the ultimate measure of success, but will be very difficult to conduct successfully.

Technology and distracted driving

Technology that can distract drivers is becoming increasingly prevalent as original equipment in new vehicles, aftermarket additions or modifications to vehicles, and portable (“nomadic”) electronic devices such as cell phones that drivers carry with them and may use while driving. At the same time, technology is being developed that may improve driving safety and in particular may reduce the risks posed by driver distractions. The challenge is to assess the distracting potential of new technology and take proactive steps to prevent it from increasing crash risks, while preserving its potential benefits.

Many new electronic devices and displays are appearing in vehicles to monitor vehicle and driving performance and to inform and entertain drivers (for example, see Burns 2005; Parkes 2005). Some have evolved from standard vehicle gauges to systems that inform the driver more effectively, such as heads-up displays or voice systems. However, these systems can also potentially distract the driver. Others, including radios, televisions, and cell phones, receive information from outside the vehicle and pass it on to the driver. Still others are interactive, reacting to the vehicle’s position (electronic navigation systems) or condition (lane monitoring, adaptive cruise control, or collision avoidance systems).

Many of these devices will soon become standard equipment; any of them may distract drivers. There are no mandatory guidelines or standards for their design or performance with respect to distraction and there is as yet

no way to reliably evaluate their distracting potential or effect, much less their impact on crash risk. However, the driving public believes naively that devices supplied with the vehicle are safe to use while driving, but that is not necessarily true (Burns 2005).

Motor vehicle manufacturers in Europe, Japan, and North America have developed best practices guidelines for the design of electronic and telematic devices. For example, the AAM Statement of Principles discusses how devices should be placed and how quickly they can be seen and understood (Burns 2005). Some manufacturers are following these guidelines closely in their vehicles. But the guidelines are not requirements. Moreover, many are stated in qualitative language (e.g., visual displays should require glances “that are brief enough not to adversely affect driving”). And they affect only motor vehicle manufacturers, not manufacturers of aftermarket automobile equipment or portable electronics.

As one approach to resolving the issue of technology and distraction, Transport Canada is attempting to work with automobile manufacturers to create a Memorandum of Understanding (MOU) on the key issues, basic design principles, and design processes. Negotiations on this promising development are underway.

An alternate approach is to develop and implement performance standards for electronic and telematic devices similar to the many vehicle safety standards currently in effect. Performance standards would require practical, objective, and repeatable methods to measure the distracting effect of these devices and reliable benchmark levels of unacceptable performance. Currently these do not exist (Burns 2005).

Technology can be distracting but it can also protect from the effects of distraction. Several new technological systems are being investigated and developed specifically to improve safety, including adaptive cruise control, intelligent speed adaptation, lane departure warnings, and collision avoidance systems (Gardner 2005; Parkes 2005). They may limit crashes or reduce injuries resulting from driver distractions. The SAVE-IT research program, a collaboration of automobile and electronics

manufacturers, universities, and the U.S. Department of Transportation, is investigating the broad area of reducing distraction-related crashes by mitigating distractions and warning drivers of risks. The program includes developing algorithms to measure driver workload, attention, and distraction (Eby 2005).

A key point is that technology is developing rapidly. The consumer electronics industry has introduced many new products in a short period of time that may affect driver distraction; and it is developing many more (Gardner 2005). Several trends are worth noting and warrant monitoring:

- Electronics and telematics devices are becoming multi-functional. For example, the device “previously known as a cell phone” now can send and receive email, take pictures, and provide location and route information.
- Devices are becoming increasingly portable, no longer attached to a telephone line or an automobile. Consumers can bring their communications and entertainment with them wherever they go.
- The industry is highly diverse, ranging from traditional suppliers of original and aftermarket automobile equipment to consumer electronics manufacturers. It does not fit well within the traditional automobile industry regulatory structure.
- New products are developed, introduced, and modified very rapidly. For example, a typical user replaces his or her cell phone every 18-24 months.

These characteristics challenge the traditional methods of ensuring the safety of vehicles and equipment through regulation.

Recommendations: Research and program needs

Conference delegates agreed that it is critical to assess the distracting potential of current and emerging technologies. Since adequate methods to do this do not exist currently, research is needed both to refine current methods and to develop new ones. The research should be a shared responsibility of national Canadian and United States governments and of the technology industries

involved, including the product manufacturers, service providers, and consumer groups, and should be conducted cooperatively. The research should:

- include technologies supplied as original and aftermarket equipment as well as portable electronic devices used in vehicles;
- study effects on specific high-risk groups, such as novice drivers and older drivers;
- work hand-in-hand with manufacturers of the technology products and the industries that incorporate them in their own products to be able to react quickly to rapidly-moving technology research, development, and implementation; and
- consider both the cumulative effects and the interactive effects of multiple technological or telemetric devices.

Some overall guiding structure such as a Memorandum of Understanding (MOU) between and among the producers and regulators may be useful to plan, allocate, and coordinate the research.

Ultimately this research may lead to performance standards to minimize the distracting effects of technology. If feasible, performance standards should be consistent for original, aftermarket, and portable devices, and should not limit product innovation. Until and unless performance standards can be developed based on solid research, other methods should be used:

- Best practice guidelines for manufacturers should continue to be developed and refined, guided by research. Manufacturers should be encouraged to follow these best practice guidelines in all product research and development.
- Drivers should be informed of the potential distracting effects of technology and educated in the appropriate ways to use technology safely. Methods to do this may include awareness and education, discussed previously, as well as more specific activities such as labels on equipment, instruction manuals, ratings of distraction potential similar to the NCAP ratings of vehicle safety performance, or even training for drivers in how to use specific equipment safely.

Continued research is also needed on technological systems to reduce risk. Adaptive cruise control, lane

departure and collision warning, and other technological systems have far-reaching implications and should be studied thoroughly before being implemented. Issues include:

- interaction effects between vehicles equipped with these systems and other vehicles lacking the systems, and
- behavioural adaptation: will drivers drive less attentively or safely if they believe that these systems will protect them from crashes?

Legislation, regulation, and enforcement involving distracted driving

With rare exceptions, traffic laws regulating driver behaviour fall under the authority of the provinces and territories in Canada and the states in the United States. The most general traffic laws related to distracted driving prohibit driving “without due care and attention,” or some similar phrase. These are in effect in all provinces, territories, and states (Booth 2005, Wilson 2005). In Canada, penalties may be quite severe in comparison to other traffic offenses (Wilson 2005). However, these laws are difficult to enforce: it’s far simpler to observe and document vehicle actions resulting from inattention, such as failure to stay in the proper lane or to use turn signals, rather than the inattention itself (Booth 2005).

In addition to these very general laws, many jurisdictions have chosen to address specific distractions – e.g., restricting the use of televisions and other electronic entertainment devices in vehicles, usually by requiring that they not be visible by the driver (McCartt 2005, Wilson 2005).

Laws regulating cell phone use in some way have attracted the most attention from the public and from legislators. At present, one Canadian province (Newfoundland and Labrador), three states (Connecticut, New Jersey and New York), and the District of Columbia prohibit all drivers from using hand-held cell phones (Booth 2005, Sundeen 2005, Wilson 2005). Several states prohibit all cell phone use by drivers with a learners permit or a provisional license or by drivers under the age of 18 or

21. Other states prohibit cell phone use by school bus drivers. In some jurisdictions where the state does not have a cell phone law, at least 26 communities prohibit the use of hand-held cell phones; in other states, communities are actually prohibited by state legislation from taking such action (McCartt 2005, Sundeen 2005). Most of the laws in the United States do not include other wireless communications devices (McCartt 2005). On the international scene, at least 40 countries regulate cell phone use by drivers, usually by prohibiting hand-held phones (McCartt 2005, Sundeen 2005, Vanlaar 2005).

Many jurisdictions that have, or have considered, cell phone legislation have looked to public opinion research for guidance. In two recent Canadian surveys, slightly fewer than half the respondents said they would support a ban on all cell phones while three-quarters or more would ban hand-held phones (Rudin-Brown 2005, Walker 2005). Respondents also consistently support increased education and awareness on the distracting effects of cell phones (Walker 2005) as well as for other telematics, together with tighter testing requirements for telematics (Rudin-Brown 2005).

The effects of laws prohibiting hand-held cell phones have been studied recently in two jurisdictions. New York’s law reduced hand-held cell phone usage by about one-half shortly after the law came into effect. However, a year later, use had returned to pre-law levels. It was noted that publicity for the law essentially stopped after the law was enacted. This suggests that cell phone laws, like safety belt use laws, require continued publicity and enforcement if they are to have a long-term effect (McCartt 2005). The District of Columbia’s recent law also reduced cell phone use by about one-half soon after it became effective; longer-term data are not yet available (McCartt 2005).

While laws prohibiting hand-held cell phone use are popular, they may have little effect on either cell phone use or crashes. As noted above, they likely require continued enforcement and publicity to have a long-term effect on public behaviour. Further, although the existing evidence is limited, some research indicates that hands-free cell phone use might be just as risky as hand-held phone use (McCartt 2005, Strayer 2005). Prohibitions on all cell phone use are not popular and would be difficult to

enforce if enacted. More generally, it is worth noting that technology-specific laws might be unable to address or keep pace with the uncertain evolution of technology.

Recommendations: Research, program, and legislative needs

Conference delegates agreed that current laws regarding distracted driving do not address the problem adequately. While laws may be improved in certain areas, delegates agreed that laws and enforcement alone cannot reduce distracted driving substantially. Recommendations in this area thus include a mix of traffic laws, standards, and programs:

- Consider prohibiting all cell phone and other electronic communication device use by youth with graduated driver license learner's permits or provisional licenses.
- Develop and require safety standards, ratings, and labels for aftermarket telematics.
- Encourage employers to adopt policies for their employees to reduce potential driving distractions.
- Encourage provinces and states to adopt consistent practices for reporting potential driver distractions that may have contributed to crashes, including the use of cell phones and other telematics, on police accident report forms.
- Investigate the role of automobile insurance in reducing distracted driving, either through premium reductions (such as for drivers who pledge not to use telematics) or variations in coverage depending on specific driving circumstances (such as reduced coverage if drivers are found to be engaged in specified distracting activities at the time of a crash).

To have maximum effect, laws intended to reduce distracted driving should follow the same principles as all good traffic safety laws. They should:

- be written well, without loopholes or unintended consequences;
- place minimal burden on law enforcement in observing and documenting the prohibited behaviour and in documenting and assisting in the prosecution of the offense; and
- have the full support of prosecutors and judges.

Priority needs and responsibilities

In the concluding workshops, delegates identified priority needs in five broad areas.

Research and evaluation

- More research on a broad range of driver distractions – better documentation of the presence of different distractions in everyday driving (exposure data) and in crashes (crash data), and the crash risks associated with these various distractions.
- Continued research and development of vehicle technology to inform drivers of crash risks (collision warning, lane departure) or to take corrective action if needed.
- Continued evaluation of the effects of existing laws regarding distracted driving, especially the variety of laws involving cell phones.

Public awareness and education

- Develop and implement activities to increase the driving public's understanding and awareness of distracted driving and of steps drivers can take to reduce risky distractions.
- Use media and messages that target specific high-risk groups, including beginning drivers and senior drivers.
- Provide education and training on effective distraction-prevention strategies through driver education classes, employers, and licensing agencies.
- Summarize and synthesize current information regarding distracted driving, to share and expand on the wealth of knowledge provided by the speakers and delegates at this conference.
- Encourage cooperation among stakeholders to maximize the sharing of resources and enhance the outreach to as broad an audience as possible.

Laws and enforcement

- Consider prohibiting cell phone and other electronic communication device use by youth with graduated driver license learner's permits or provisional licenses.

Incentives and penalties

- Encourage employers to adopt policies for their employees to reduce potential driving distractions.

- Investigate the role of automobile insurance in reducing distracted driving.

Industry-government cooperation

- Establish methods for both traditional (auto manufacturers and aftermarket suppliers) and non-traditional (consumer electronics, food service) industries to work cooperatively on public awareness, the research needed to understand distracted driving, strategies and products to minimize or compensate for its effect, and the standards and guidelines to maximize the safety of new vehicles, aftermarket products, and nomadic telematics.

Concluding observations

Distracted driving has several characteristics that make it difficult to manage:

- It arises from a broad range of events, objects and activities outside and inside the vehicle.
- It involves lifestyle issues, not just driving issues, including the almost natural propensity to attend to objects, events or activities that are new, novel or engaging. Being distracted is virtually a way of life.
- Driving time is increasingly viewed as unproductive so it is seen as an opportunity for accomplishing other tasks – to maintain seamless communications with the office and home, and sustain personal contact.
- Distractions occur at different levels and must be dealt with continually while driving. Attention is constantly divided among a variety of tasks or events, taxing the information processing capacities of drivers differentially and encroaching on their margin of safety. In this respect, distracted driving is far more difficult to influence than safety belt use, which requires only a single brief action when entering the vehicle.
- Technology development, especially in consumer electronics, is moving far faster than traditional motor vehicle development, regulation, or legislation.
- The consumer electronics industry is not accustomed to considering how its products affect driving; conversely, the motor vehicle safety and regulatory structure is not well equipped to interact with consumer electronics.
- While there are many driver distractions that increase crash risk, cell phones and other telematics are at the cutting edge of the issue for the public, legislators, and governments.

The presentations, discussions, and deliberations of this conference led to several general conclusions:

- There is no single answer to the problem: neither laws, nor education and awareness, nor product standards and regulations alone, will eliminate or even reduce substantially the causes of, or the crashes resulting from, distracted driving. The problem is multidimensional; the solutions are manifold and complementary.
- Distracted driving involves all three of the traditional traffic safety countermeasure areas: the roadway environment, the vehicle, and the driver. Effective strategies to reduce the causes or risks of distracted driving will require interdisciplinary thinking that understands the interactions between the three areas.
- There are three essential keys to progress:
 - Research and data: we need to know far more about the problem – which distractions are most important, who is most at risk, when, where and why – in order to develop effective prevention strategies.
 - Awareness and education: an informed public and informed decision-makers acting on the best available evidence are critical for engendering a rational environment for prevention initiatives.
 - Cooperative government-industry efforts: cooperation is needed across national borders (beginning with Canada and the United States) and industry boundaries (auto manufacturers, aftermarket firms, consumer electronics).

Distracted driving is an important contributor to crashes. Distractions due to new vehicle and aftermarket technology, telematics, and portable electronics, is especially an area that needs serious study. With the extremely rapid pace of electronics and telematics development, there is a need to be vigilant about how these changes might affect crash risk. Developments should not occur in isolation; due consideration is needed about how they interact with each other and how they may affect drivers.

In summary, there was a consensus among conference delegates that distracted driving is an important traffic safety issue about which far too little is known, and that distracted driving likely will become increasingly important. Delegates urged all organizations and persons involved in traffic safety, including government agencies, automobile and electronics manufacturers, and traffic safety organizations, to act promptly and cooperatively to acquire the needed data, conduct the critical research, and investigate appropriate strategies for reducing distracted driving in a rapidly-changing driving environment.

Conference Papers³

Beirness, D.J. (2005). Distracted driving: The role of survey research. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Bellavance, F. (2005). Linking data from different sources to estimate the risk of collision when using a cell phone while driving. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Booth, R. (2005). Legislation, regulation and enforcement for dealing with distracted driving. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Burns, P.C. (2005). In-vehicle technology and distraction. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Eby, D.W. (2005). SAFETY VEHICLES using Interface Technology (SAVE-IT): A program overview. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Gardner, R. (2005). Technology solutions toward improved driver focus. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

McCartt, A.T. (2005). Cell phone and other distractions: Legislation, regulation and enforcement. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Parkes, A. (2005). Technology and distracted driving: Technology push, demand-pull and the consequences of poor design. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Rudin-Brown, C.M. (2005). Driver distraction from in-vehicle telematics devices: The public opinion. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Simpson, H.M. (2005). Distracted driving: How can we know that it's a problem? Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Smiley, A. (2005). What is distraction? Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Strayer, D. (2005). Driven to distraction. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Stutts, J. (2005). How risky is distracted driving? What crash data reveals. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Sundeen, M. (2005). Distracted driving legislation. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Tasca, L. (2005). Driver distraction: Towards a working definition. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Vanlaar, W. (2005). Legislation, regulation and enforcement for dealing with distracted driving in Europe. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Walker, J. (2005). Public opinion on distracted driving. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

Wilson, J. (2005). Legislation and regulation in Canada with respect to driver distraction. Paper presented at the International Conference on Distracted Driving, Toronto, Canada, October 2-5.

³May be accessed at www.distracteddriving.ca

Appendix I • Conference Sponsors

<p>Alberta Motor Association Edmonton, Alberta, Canada</p>		<p>Dollar Thrifty Automotive Group, Inc. Mississauga, Ontario, Canada</p>	
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<p>Canadian Automobile Association Ottawa, Ontario, Canada</p>		<p>National Association of Fleet Administrators, Inc. Iselin, New Jersey, USA</p>	
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Appendix II • Members of Advisory Committee

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Mr. John Walls
Vice President, Public Affairs
CTIA-Wireless Association
United States

Dr. Jean Wilson
Manager, Road Safety Research
Insurance Corporation of British Columbia
Canada

Appendix III • Conference Program

(PowerPoint presentations and papers can be accessed at www.distracteddriving.ca)

SUNDAY, OCTOBER 2

2:00 p.m. - 7:30 p.m. REGISTRATION (also available Monday 8:00 a.m. – noon), *Foyer*

6:00 p.m. - 7:30 p.m. RECEPTION, *Toronto Ballroom I*

MONDAY, OCTOBER 3

8:30 a.m. - 8:45 a.m. WELCOMING
Comments from CAA/TIRF
All sessions in Toronto Ballroom II & III, except Workshops

8:45 a.m. - 9:15 a.m. OPENING REMARKS
Honourable Harinder Takhar, Minister of Transportation for Ontario

9:15 a.m. - 10:20 a.m. WHAT IS DISTRACTED DRIVING?
A context-setting panel on the definition of distracted driving (what it is and what it is not), the types of distractions, how we determine their safety importance, a description of the “human factors” mechanisms through which distractions influence the capacity for the safe operation of the vehicle.

Session Chair:

Mr. David Flewelling, President, Canadian Automobile Association

Speakers:

Dr. Leo Tasca, Team Leader, Special Projects, Road Safety Program Office, Ontario Ministry of Transportation

Dr. Alison Smiley, President, Human Factors North

Dr. Herb Simpson, President and CEO, Traffic Injury Research Foundation

10:20 a.m. - 10:40 a.m. BREAK, *Foyer*

10:40 a.m. - 12:30 p.m. HOW RISKY IS DISTRACTED DRIVING – OVERBLOWN OR UNDERSTATED?
This panel session will review what various research approaches – self reports, collision studies, observational studies, and experimental research – tell us about the magnitude of the problem of distracted driving.

Session Chair:

Mr. Peter Kissinger, President and CEO, AAA Foundation for Traffic Safety

Speakers:

Dr. Doug Beirness, Vice President, Research, Traffic Injury Research Foundation

Dr. Jane Stutts, Associate Director for Social and Behavioral Research, Highway Safety Research Center, University of North Carolina at Chapel Hill

Dr. David Strayer, Professor, Department of Psychology, University of Utah

Ms. Sheila Garness Klauer, Senior Research Associate, Center for Human Factors Research, Virginia Tech Transportation Institute

Dr. François Bellavance, Director, Transportation Safety Laboratory, HEC Montréal and CRT

12:30 p.m. - 1:30 p.m. LUNCHEON
Toronto Ballroom I

- 1:30 p.m. - 3:00 p.m.** **WORKSHOPS ON RISKS OF DISTRACTED DRIVING**
Parallel workshops with directed questions/issues to pursue what is known and not known about the problem (limitations of current knowledge), why it is so difficult to obtain reliable estimates of the size of the problem, what needs to be done to rectify this (research needs, including the types of primary data that need to be collected, and improvements in the quality of secondary data).
Rooms to be assigned.
- 3:00 p.m. - 3:30 p.m.** **BREAK**
Foyer
- 3:30 p.m. - 5:00 p.m.** **WORKSHOPS ON AWARENESS AND EDUCATIONAL PROGRAMS FOR DEALING WITH DISTRACTED DRIVING**
There will not be a panel session on this topic; delegates will go directly to parallel workshops. Each workshop leader/moderator will be provided with a background report to introduce the issue describing what is known about these approaches for addressing the problem of distracted driving. Workshops will address issues related to the potential benefits and limitations of such approaches, where efforts are most required, the need for evaluation, and best practices.
Rooms to be assigned.
- 6:30 p.m. - 9:00 p.m.** **CONFERENCE BANQUET**
Toronto Ballroom I

TUESDAY, OCTOBER 4

- 8:30 a.m. - 9:00 a.m.** **SYNTHESIZED REPORTS FROM WORKSHOPS**
Reports on the results of the Workshops on “risks of distracted driving” and on “educational and awareness approaches”. There will be a 15-minute presentation on each.
- 9:00 a.m. - 10:45 a.m.** **TECHNOLOGY AND DISTRACTED DRIVING**
This panel will focus on distractions caused by technology and on efforts that have been made (or are needed) to assess and reduce the negative impact of distractions caused by current and planned “in-vehicle technology” (including after-market). It will also consider technology that can prevent the consequences of distraction.
- Session Chair:**
Mr. Peter Barnes, President and CEO, Canadian Wireless Telecommunications Association
- Speakers:**
Dr. Peter Burns, Chief, Ergonomics and Crash Avoidance (ASFBA), Road Safety and Motor Vehicle Regulation, Transport Canada
Dr. Andrew Parkes, Chief Research Scientist, Behaviour and Simulation, Transport Research Laboratory, United Kingdom
Dr. David W. Eby, Research Associate Professor and Head, Social and Behavioral Analysis, University of Michigan Transportation Research Institute
Mr. Robert "Mike" Gardner, Director of Motorola Intelligent Systems Research Lab and Fellow of Technical Staff, Motorola
- 10:45 a.m. - 11:15 a.m.** **BREAK**
Foyer
- 11:15 a.m. - 12:30 p.m.** **WORKSHOPS ON TECHNOLOGICAL APPROACHES**
Parallel workshops to consider the benefits and limitations of such approaches and identify priority needs.
Rooms to be assigned.

12:30 p.m. - 1:30 p.m. LUNCHEON, *Toronto Ballroom I*

1:30 p.m. - 3:10 p.m. LEGISLATION, REGULATION AND ENFORCEMENT FOR DEALING WITH DISTRACTED DRIVING

An international review of legislative and regulatory approaches for dealing with distracted driving; evaluations of the impact of such measures; enforcement issues; and public attitudes toward the issue.

Session Chair:

Dr. Yoassry Elzohairy, Senior Research Adviser,
Ontario Ministry of Transportation

Speakers:

Dr. Jean Wilson, Manager, Road Safety Research, Insurance Corporation of British Columbia

Mr. Matt Sundeen, Program Principal, Transportation, National Conference of State Legislatures

Mr. Ward Vanlaar, Head of Research, Behaviour and Policy Development, Belgian Road Safety Institute

Dr. Anne McCartt, Vice President, Research, Insurance Institute for Highway Safety

A/Comm Darrell LaFosse, Royal Canadian Mounted Police

Dr. Christina (Missy) Rudin-Brown, Human Factors Specialist, Ergonomics and Crash Avoidance Division (ASFBA), Road Safety and Motor Vehicle Regulation, Transport Canada

Mr. Jeff Walker, Senior Vice President, Decima Research

3:10 p.m. - 3:30 p.m. BREAK, *Foyer*

3:30 p.m. - 4:45 p.m. WORKSHOPS ON LEGISLATION, REGULATION AND ENFORCEMENT

Parallel workshops to consider the benefits and limitations of such approaches, to determine what legislation, if any, is needed, and to identify priority issues. *Rooms to be assigned.*

WEDNESDAY, OCTOBER 5

8:30 a.m. - 9:00 a.m. SYNTHESIZED REPORTS FROM WORKSHOPS

Report on the results of the Workshops on “technology” and “legislation” -- single 15-minute presentation on each.

Session Chair:

Dr. Herb Simpson, President and CEO, Traffic Injury Research Foundation

9:00 a.m. - 10:30 a.m. WORKSHOPS ON WHERE WE GO FROM HERE -- PRIORITY NEEDS AND RESPONSIBILITIES

Parallel workshops to identify the most critical next steps that need to be taken in dealing with the issue of distracted driving, and who should take them. *Rooms to be assigned.*

10:30 a.m. - 11:00 a.m. BREAK
Foyer

11:00 a.m. - 11:30 a.m. REPORT TO PLENARY
Reports delivered by individual group moderators.

11:30 a.m. – noon CONFERENCE SYNOPSIS
Summary of general conclusions and consensus emerging from the conference.

Speaker:

Dr. Jim Hedlund, President, Highway Safety North

noon – 12:15 p.m. CLOSING COMMENTS FROM CAA AND TIRF

Appendix IV • Workshop Moderators

Doug Beirness	Traffic Injury Research Foundation
Paul Boase	Transport Canada
Jeanette Espie	Alberta Infrastructure and Transportation
Geoff Ewing	Government of Newfoundland and Labrador
Phillip Groff	Smart Risk
Barbara Harsha	Governors Highway Safety Association
Devon Jacobs	Canadian Automobile Association
Brian Jonah	Transport Canada
John Lefebvre	Ministry of Transportation, Ontario
Dan Mayhew	Traffic Injury Research Foundation
Deanna Singhal	Traffic Injury Research Foundation
Ward Vanlaar	Traffic Injury Research Foundation
John Walls	CTIA – The Wireless Association

Appendix V • Conference Delegates

Trace Acres, BC Automobile Association, Burnaby, BC
 Shabnem Afzal, BC Ministry of Public Safety & Solicitor General, Richmond, BC
 Jason Ballantyne, CAA South Central Ontario, Thornhill, ON
 Peter Barnes, CWTA, Ottawa, ON
 Kris Barnier, CAA South Central Ontario, Thornhill, ON
 John Bates, Founder of MADD Canada, Toronto, ON
 Doug Beirness, TIRF, Ottawa, ON
 Cathy Bell, OPP, Orillia, ON
 François Bellavance, Centre for Research on Transportation, Montréal, QC
 Paul Boase, Transport Canada, Ottawa, ON
 Rod Booth, RCMP, Ottawa, ON
 Rachele Boudreau, Insurance Bureau of Canada, Toronto, ON
 Brian Bowman, Toronto Police Services, Toronto, ON
 Peter Burns, Transport Canada, Ottawa, ON
 Jeff Caird, Department of Psychology, University of Calgary, Calgary, AB
 Theresa Caruana, Bell Mobility, Mississauga, ON
 Peter Christianson, Young Drivers of Canada, Hamilton, ON
 Cassandra Crowder, CANDRIVE/Elisabeth Bruyère Research Institute, Ottawa, ON
 Matt Davidson, CN Police, Oakville, ON
 Dan Davis, NS Transportation & Public Works, Halifax, NS
 Dianne deKock, Manitoba Transportation, Winnipeg, MB
 Teresa Di Felice, CAA South Central Ontario, Thornhill, ON
 Kim Dingwall, Brewers of Canada, Ottawa, ON
 Gary Drouin, Transport Canada - Rail Safety, Ottawa, ON
 Monique Dufour, SAAQ, Québec, QC
 Simon Dwyer, Bell Canada, Mississauga, ON
 David W. Eby, UMTRI, Ann Arbor, MI
 Charles Eger, Motorola, Inc., Washington, DC
 Yoassry Elzohairy, MTO, Toronto, ON
 Jeanette Espie, Alberta Infrastructure & Transportation, Edmonton, AB
 Geoff Ewing, Gov't of Newfoundland & Labrador, St. John's, NL
 Allison Fleming, AAA, Washington, DC
 David Flewelling, CAA, Ottawa, ON
 Wayne Foster, Greater Sudbury Police Service, Sudbury, ON
 Geoff Francis, Rogers Wireless, Toronto, ON
 Selden Fritschner, AAMVA, Arlington, VA
 Robert (Mike) Gardner, Motorola Corporate Labs, Tempe, AZ
 Philip Groff, SmartRisk, Toronto, ON
 Carolyn Halbert, Manitoba Public Insurance, Winnipeg, MB
 Anna Halkidis, CAA South Central Ontario, Thornhill, ON
 Joanne Harbluk, Transport Canada, Ottawa, ON
 Barbara Harsha, Governors Highway Safety Association, Washington, DC
 Jim Hedlund, Highway Safety North, Ithaca, NY
 Ralph Hessian, Nova Scotia Dept. of Transportation & Public Works, Halifax, NS

Kathryn Holbrow, Saskatchewan Government Insurance, Regina, SK
Devon Jacobs, CAA, Ottawa, ON
Marliese Janes, NF Safety Council, St. John's, NL
Chris Janusz, MTO, Toronto, ON
James Johnston, RCMP, Ottawa, ON
Brian Jonah, Transport Canada, Ottawa, ON
Peter Kissinger, AAA Foundation for Traffic Safety, Washington, DC
Sheila Klauer (Charlie) Garness, Virginia Tech Transportation Institute, Blacksburg, VA
Shara Lamont, Institute of Public Law, University of New Mexico, Albuquerque, NM
Almis Ledas, Bell Mobility, Mississauga, ON
John Lefebvre, MTO, Toronto, ON
Renée Lefebvre, Sudbury & District Health Unit, Sudbury, ON
Anne Leonard, OCCID, Toronto, ON
Sue Lo, MTO, Toronto, ON
Faye Lyons, CAA South Central Ontario, Thornhill, ON
Kasia Majewski, CWTA, Ottawa, ON
Tom Marinis, MTO, Toronto, ON
Jeff Marshall, CAA South Central Ontario, Thornhill, ON
Audrey Mayhew, Province of PEI, Highway Safety, Charlottetown, PEI
Dan Mayhew, TIRF, Ottawa, ON
Anne McCartt, Insurance Institute for Highway Safety, Arlington, VA
Rhonda Moore, CAA, Ottawa, ON
Maureen Murray, CAA Saskatchewan, Regina, SK
John Nepomuceno, State Farm Insurance Companies, Bloomington, IL
Liz Owens, Alberta Infrastructure & Transportation, Edmonton, AB
Rocky Pagnello, Workplace Safety & Insurance Board, Toronto, ON
Wendy King, Workplace Safety & Insurance Board, Toronto, ON
Andrew Parkes, Transport Research Laboratory, UK, Wokingham, Berkshire, UK
Karen Pettinella, HKPR Health Unit, Haliburton, ON
Gerry Pitre, Hydro One, Hornby, ON
Logan Purdy, MTO, Toronto, ON
Claire Roy, CAA-Québec, Montreal, QC
Christina (Missy) Rudin-Brown, Transport Canada, Ottawa, ON
Herb Simpson, TIRF, Ottawa, ON
Deanna Singhal, TIRF, Ottawa, ON
Alison Smiley, Human Factors North Inc., Toronto, ON
Georgette Stockman, Institute of Public Law, University of New Mexico Medina, NY
David Strayer, University of Utah, Salt Lake City, Utah
Bryon Stremmler, Toyota Canada Inc., Toronto, ON
Jane Stutts, UNC Highway Safety Research Center, Chapel Hill, NC
Tatjana Sulker, CAA South Central Ontario, Thornhill, ON
Matt Sundeen, National Conference of State Legislatures, Denver, CO
Leo Tasca, Ontario Ministry of Transportation, Toronto, ON
Kathryn Terrell, Mobile Workforce Consultants, Fort Collins, CO
Daniel Tessier, CAA, Ottawa, ON
Jerry Thomas, City of Ottawa, Nepean, ON

Louis Tijerina, Ford Motor Company, Dearborn, MI
Valerie Todd, CCMTA, Ottawa, ON
Anthony Toner, Province of New Brunswick, Fredericton, NB
Robert Tremblay, Insurance Bureau of Canada, Toronto, ON
Jeff Turner, Canadian Vehicle Manufacturers' Association, Toronto, ON
Julia Ukrintz, CAA, Ottawa, ON
Ward Vanlaar, Belgian Road Safety Institute
Lyne Vézina, SAAQ, Québec, QC
Jeff Walker, Decima Research, Ottawa, ON
John Walls, CTIA - The Wireless Association, Washington, DC
John Warkentin, MTO, Toronto, ON
Barry Watson, Manitoba Public Insurance, Winnipeg, MB
Karen White, CAA Maritime, Saint John, NB
Jean Wilson, ICBC, Victoria, BC
Bruce Wise, Great Northern Consulting/transportationcentre.com, Toronto, ON
Jeanette Woodman, NS Transportation & Public Works, Halifax, NS



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