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Analysis of the Literature. Use mobile phone on driving In India

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Abstract: This review on experimental, real-world, and behavioral studies shows a strong relation between cell phone use on driving and deterioration in driving performance leading to an increased risk of collision. Although the problem of using on driving has attracted the attention of governments at all levels, the legislative attempts to curb mobile phone use by drivers have been less than successful. Cell phone use on driving continues to be an important issue in traffic safety. The growing number of in-vehicle advance with their potential as distractions, make the issue increasingly relevant. Non Hands-free devices do seem to be the answer, since the requirement of cognitive interaction makes them equally distracting.

Keywords: Cell Phone, Driving, Traffic safety, Hand-free.

I. PURPOSE OF THIS REPORT

The purpose of that review, which was commissioned by Holden, is to examine the current literature on driver distraction, focussing specifically on in-vehicle distraction; that is, distraction caused by activities or objects inside the vehicle rather than those outside the vehicle.

The first section of the report discusses the impact of technology-based distractions (e.g., mobile phones, route navigation and email/internet) and non-technology-based distractions on driving performance.

In the second of this report, the various methods that used to measure distraction are described and the measurement techniques that appear most promising in being able to accurately measure in-vehicle distraction were identified. Future research needs and recommendations for minimizing driver distraction are made in the final section of the report.

II. INTRODUCTION

Speaking on your mobile phone on driving may soon result in your license has being suspended. The city traffic police is planning to strictly enforce the Central Motor Vehicles Rule 21 (25) that states ‘using mobile phone on driving a vehicle shall constitute nuisance or danger to the public.

After a preliminary awareness campaign, same as one the traffic police recently carried out to make motorists wear seat belts, the transport officer will start suspending licenses of those who are found talking on their mobile phones are using in driving. This also applies to those riding motorcycles. For those in the habit of talking on mobile phones on driving, here is the wake-up call. Government is likely to notify a rule soon under which people caught talking-and-driving would be fined Rs 2000, six months imprisonment or both.

The punishment should be suspension of driving license for six months if such acts lead to accidents.

III. CAUGHT DRIVING AND ON PHONE WILL COST YOU YOUR LICENSE

Police top brass say 'harsh punishment' is needed to curb the 'nuisance' caused by such motorists. Even drivers who use hands-free devices such as Bluetooth and earphones stand to lose their DLs Motorists who use their mobile phones while riding/driving will probably top surveys of the most annoying habits of road users. The problem is a relatively new one and only witnessed in the last five years, police say but it has burgeoned so rapidly that it has become the single most.

IV. MOBILE MAYHEM

Recalling an incident in 2013, Dayananda said "We had a case of a rider who was speaking to his wife on the phone while driving. A vehicle rammed him from the rear. The driver fell and died on the spot, even though the call was still alive. A policeman who was near the spot took the phone and heard the man's wife asking what had happened.He had the problem of telling the wife that her husband was death." In another case, in Ashok Nagar traffic police station limits, a man identified as Nasir was driving a car while speaking on the phone. Nasir hit a SUV near Confident Propus-Boutique Hotel on Hosur Main Road.

Firoz, a passenger in Nasir's vehicle, sustained severe injuries. Firoz was fined Rs 2,000 by a court. In January 2014, KR Puram police recorded a case of road rage when a car driver began texting while at a signal.

He did not see the traffic light had turned green. A bike driver who was behind the car, honked few times but he did not move. He got off and he was an argument with the car rider.

They almost came to blows, but traffic police intervened.Near Maharani's College on Sheshadri Road, a car driver was speaking on the phone on driving. A motorist in front of him suddenly braked and the man on

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the phone too braked hard. A bike collided with the car driven by the person who was speaking on the phone and sustained minor injuries.

Many studies have found that using a hands-free phone on driving is no safer than using a hand-held phone. Using a mobile phone on driving can increase the risk of being involved in a collision by up to four times.

Research suggests that the physical and cognitive distraction caused by using mobile phones on driving can significantly impair a driver's visual search patterns, reaction times, decision-making processes and their ability to maintain speed, throttle control and lateral position on the road.Mobile phone use also often involves associated tasks that may further distract. These activities can include writing down phone numbers on a piece of paper whilst driving or writing down dates or notes in diaries.

Sending a text message is more distracting than simply talking on a mobile phone. Research has found that talking on a mobile phone is more distracting than holding an intelligent conversation with a passenger, but no more distracting than eating a food.

V. ENTERTAINMENT SYSTEMS

Tuning a radio on driving appears to have a detrimental effect on driving performance, particularly for unschooled drivers. Research suggests that simply listening to radio broadcasts on driving can impair driving performance. Research suggests that operating a CD player on driving is more distracting than dialing a mobile phone; however the use of voice-activation may minimize this distraction.

VI. QUANTIFYING CELL PHONE USAGE AND CRASH RISK

Drivers' attentiveness has been a concern since the invention of the automobile. As technology increases, the number of driver distractions increases. Each year, more than 42,000 people are death, more than 3 million are injured, and more than 6 million crashes occur on roads in the United States (IIHS, 2006). Estimates have attributed between 30-50 percent of collisions to distracted drivers, resulting in huge amount of societal cost (Cohen, 2003). Although common sense and experience tells us that using cell phones on driving is dangerous, a further of studies is devoted to quantifying the exact risk associated with using a cell phone on driving. Around 120 studies have attempted to validate a common conception: using a cell phone on driving is a distraction and therefore increases crash risk. The literature on this subject investigates various relationships between cell phone use and accident risk. These studies may be separated into three general groups: experimental studies, epidemiological studies and real-world studies. Epidemiological studies examine real-world accident data and cell phone records to draw conclusions based on the relationship between the two. Experimental and behavioral studies attempt to measure some cognitive effect of cell phone use on normal driving functions such as visual attention, following distance, reaction time, and other driving tasks. Real-world studies attempt to show how real-world situations either justify or disprove the other data.

VII. POOR RECORD

Delhi Traffic Police book drivers talking on cell phones under Section 184 of the Motor Vehicles Act and impose a penalty of Rs.1,000. Bluetooth devices attached with speakers are frequently fixed in the car and used for talking. There is also a provision of jail term of up to 6 months. The traffic courts concerned decide about this. There are only a few prosecutions under this section. Till May 25 2015 year, the traffic police had prosecuted about 700 people for talking on mobile on driving while they issue 8000-10000 challans every day for all offences. In 2012, the number of offenders booked for talking on mobile phone on driving was 1700, to avoid detection; people have started using hands free devices.

VIII. RECOMMENDED DISTRACTION MEASUREMENT TECHNIQUES AND MEASURES

In addition to reviewing what is known about both technology and non-technology-based distractions deriving from within the vehicle, the various scientific techniques which have been used to measure driver distraction and the measures of driving performance (e.g., lane keeping) which appear to be vulnerable to the different types of distraction. While that material was reviewed primarily to assist Holden, material is reported here to assist others undertaking distraction-related research.

The following techniques for measuring distraction were identified:

- On-road and test track studies;
- Driving simulator studies;
- Dual-task studies;
- Eye glance monitoring studies;
- The visual occlusion method;
- The peripheral detection task; and
- The 15 Second Rule.

IX. VEHICLE DESIGN

The most effective way to minimize technology-based distraction is to design the Human Machine Interface (HMI) ergonomically. In Europe and North America draft standards have already been developed which contain performance based goals which must be reached by the HMI so that the in-car technologies do not distract or visually entertain the driver on driving (e.g., the European Statement of Principles for Driver Interactions with Advanced In-vehicle Information and Communication systems). In that system is important that the development of these standards be closely monitored by relevant authorities in Australia and that local vehicle manufacturers and system developers are encouraged to refer to these standards in designing their systems.

There is a need for research to develop the HMI so that it eliminates the need for these associated tasks. The operation of certain devices including mobile phones and route guidance systems often involves associated tasks such as accessing written information, which could further distract the driver.

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X. EDUCATION AND TRAINING

A good deal is already known about the risks associated with engaging whilst driving in various distracting activities. Training is important that these are brought to the attention of drivers and passengers. As a matter of priority, Training is important to make the motoring public aware that hands-free mobile phones can be just as distracting as hand-held phones.

As with the use of cell phones, drivers must be educated and trained in the optimal manner in which to interact with existing and emerging on-board technologies and services accessed through portable devices in order to minimize distraction. In case flexibility exists in the manner in which these devices can be operated (there are, for example, many ways to tune and select a radio station), user manuals and tutorials provided by vehicle manufacturers and service providers should highlight the most ergonomic and least distracting methods for doing so.

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