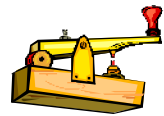




# The Ergonomic Wire



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## The traffic implications of distracted driving

By Kirsten Willms, AE, Ergonomic Consultant, EWI Works

We've heard a lot on the news recently about how distracted drivers are most likely to cause or be in traffic collisions. Much of the emphasis to date has been on the danger of talking on the cell phone or texting while driving and how this relates to a risk of collision. For example, one study noted that texting while driving had approximately the same level of impairment as a drunk driver with a blood alcohol level of 0.08. Lorel has done a great job covering these studies on our blog – see [www.ewiworks.com/blog](http://www.ewiworks.com/blog).

Notwithstanding the importance of such a safety hazard, researchers are also looking at the more “everyday” effects of driving while texting or talking on a cell

phone. While not all drivers will cause collisions, they may be affecting the flow of traffic.

A current theory being used in traffic science is that of the Three Phase Traffic Theory. Its basis is that traffic can be characterized as a complex dynamic system, and draws from ideas in network, chaos and complexity theories. It divides traffic into three phases: free flow, synchronized, and jammed. Free flowing traffic moves the fastest but has asynchronous lane speeds, greater following distances, frequent opportunities for passing, and more lane changes. Synchronized traffic moves a little slower and speeds between lanes become synchronous, following distances



decrease, and there are fewer lane changes. Jammed traffic, is, well, jammed. Phase transitions are caused by an increase in volume, or a “critically large perturbation” – collisions, construction, or erratic driver behaviour.

A recent study at the University of Utah focussed on the first two phases and posed the question: does multi-tasking affect driver behaviour? Participants were tested in a driving simulator, driving in low, medium or high density traffic, and with or without having a conversation. Drivers

(Continued on page 3)

## Consider ergonomics consultation for your “green” building.

By Lorel Hammerstad, Communications Specialist, EWI Works

For over a decade, businesses have learned the importance of “going green”. Now there is the push towards buildings themselves going green. Building projects, whether brand new or buildings being renovated to become more sustainable and environmentally friendly, can obtain certification through LEED (Leadership in Energy and Environmental Design). Spearheaded by the US Green Building Council, LEED “is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings.”

LEED certified buildings are recognized in five areas of human

and environmental health. Projects must earn a minimum number of credits on the LEED rating system. The type of projects that might be able to obtain certification are new construction or existing buildings, schools, retail, and health care to name a few (more can be found at [www.usgbc.org](http://www.usgbc.org)).

Ergonomics plays a role in LEED certification as part of the Innovation in Design credit. Having an ergonomist as part of your project team can help ensure that your project meets human factors needs in it's initial design or renovation. Considering ergonomic consultation on your project from the beginning can anticipate needs and

save on costly re-design down the road if those needs are not met.

Are you an architect, facility manager, engineer or construction manager with a green project in mind? Consider having an ergonomist on your team. An ergonomist can interpret the requirements for the Innovation and Design credit and help guide the process for design to help your building project gain LEED certification.

In Canada, a listing of ergonomists can be found at [www.ace-ergocanada.ca](http://www.ace-ergocanada.ca) or call us at 780-436-0024.

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## Pardon me? Protecting hearing loss in the workplace

By Lorel Hammerstad, Communications Specialist, EWI Works



To experience what hearing loss is like, go to:

[http://www.hse.gov.uk/noise/demonstration.htm](http://www.hse.gov.uk/noise/noise/demonstration.htm)

The National Center on Hearing Assessment and Management states that one out of 10 Americans have hearing loss, which is expected to double over the next 20 years. Studies show that hearing loss occurs more often after 65. However, you may already have a certain amount of hearing loss and not even know it. Some hearing loss can be related to bacterial infections, damage to the eardrum, or birth defects. As hearing loss can also be from prolonged exposure to high noise levels, hearing damage often goes unnoticed. Unfortunately, it's permanent. This is why it is crucial that both employers and workers work together to protect workplace hearing loss.

There are signs indicating hearing damage. You might find conversations at work or at a dinner party difficult, mistaking one word for something else. You may even feel left out of a conversation or unable to keep up. Turning up the radio, TV or volume on a telephone that others find loud is a good indicator, as is permanent ringing or buzzing in your ear (tinnitus).

While we are all exposed to noise, there are tasks and industries where hearing loss is a greater risk. If you work in an environment where there is a high level of noise for the majority of the day, you are at risk - particularly if you go home after work and your hearing is muffled or noises seem to be coming from the back of your head. If you've ever attended a music concert and experienced this, try picturing yourself being subjected to this daily! While most of us would think of people who work in restaurants, night-clubs, music venues or concert halls, workers in industries that require powered tools, impact equipment or explosives are at the same risk. Even working on a busy street day after day can in-

crease the risk of hearing loss.

Examples include:

- ◆ Construction, road work
- ◆ Factories and plants such as textile manufacturing, canning
- ◆ Industries involving wood-working, forging, pressing or stamping

So how should workplace hearing loss be addressed? Responsibility and prevention lies on the shoulders of both employers and the workers themselves.

### Employers' responsibilities

First off, it's important to know that by law, a business must protect its workers. So where do you start? According to the UK government's Health and Safety Executive on workers and noise, the first step is to conduct a risk assessment. There are many guidelines available on the internet but in a nutshell, employers need to identify the risk location and who will be affected. Information can be gathered from similar workplace environments from the actual machinery suppliers. To determine your employee's exposure to risks, a noise measurement is the course of action. More information on noise measurement can be found in the document "Noise - Measurement of Workplace Noise" at the Canadian Centre for Occupational Health and Safety (OHS) website ([www.ccohs.ca/oshanswers/phys\\_agents/noise/measurement.html](http://www.ccohs.ca/oshanswers/phys_agents/noise/measurement.html)). Also, you need to make sure that the individual conducting and providing advice on the assessment is qualified.

When the results are analyzed, it's time to put a noise control action plan into place. This involves providing proper hearing protection, visibly marking where the protection is required and ensuring that the protection is being

used and maintained properly. Training is an important aspect of this noise control action plan as well as drawing up a safety policy, communicating that policy, conducting spot checks and ensuring buy-in from management and supervisors. If you get that buy-in, these individuals will play an important role by setting an example for staff.

### Employees need to be accountable for their hearing protection

Are you a worker who may be at risk? You can help your employer. If there is a risk, notify him or her and assist them in putting measures in place. At the same time, it is important to cooperate and comply with the measures that your employer has in place to protect your hearing. Wear protection that is provided in high risk areas posted by your employer. Take proper care of the hearing protection and report any damage or other problems if it isn't working properly. Finally, have your hearing checked regularly to catch issues before they become worse.

The risks for workplace hearing loss can be prevented, or greatly reduced, as long as everyone recognizes the hazard and a joint effort is initiated to keep everyone in your organization safe.

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### References:

Canadian Centre for Occupational Health and Safety: [www.ccohs.ca](http://www.ccohs.ca)

Health and Safety Executive: [www.hse.gov.uk/noise](http://www.hse.gov.uk/noise)

Hearing Loss Association of America, "Facts on Hearing Loss", [www.hearingloss.org/docs/factsheet.pdf](http://www.hearingloss.org/docs/factsheet.pdf)



**Employers must provide hearing protection in the workplace where there is a risk of hearing loss.**

**Employees must take responsibility for their protection by using the protection.**

## Distracted driving continued

(Continued from page 1)

were instructed of the speed limit and to signal lane changes.

Quebec, Newfoundland, Nova Scotia and now Ontario have banned the use of handheld cell phones while driving in an effort to curb the adverse effects of driver distraction. However, this study shows that even the use of a hands free device can affect driver behaviour. Across all flow conditions, hands free cell phone users left a smaller lag distance when changing lanes – that is, less room between them and the car behind them. There was no difference in the forward following distance in any traffic density, however the time spent following a lead vehicle increased when on the phone while in medium and heavy density traffic as the drivers talking on the phone made fewer lane changes. As well, in medium and heavy density traffic the distracted drivers drove slightly slower and took longer to get to their destination.

You might say, isn't it a good

thing the distracted drivers are going slower and making fewer lane changes? That depends. It is postulated that with enough of these drivers on the road, the transition from free flow traffic to synchronized traffic (and later from synchronized to jammed)

**Many provinces in Canada and states in the US have banned the use of hand held cell phones while driving.**



will occur much earlier, leading to unnecessary traffic congestion. Researchers referred to this as a “rolling roadblock”, as cars traveling slower than the flow of traffic cause traffic flow disruptions. As well, if a driver on a hands free call leaves less room between themselves and the car they pull ahead of in a lane change, the car following this driver is more likely to have to hit the brakes, slowing traffic. Another concerning factor is that the distracted

drivers did not leave themselves extra room between their car and the vehicle they were following. This suggests that they might be more likely to get into a rear end collision when considering in previous studies they were shown to have reduced reaction times. Regardless, they may be more prone to slamming on the brakes, perturbing the flow of traffic behind them.

Though there is a safety advantage in using a hands free device, it seems that the newest research is suggesting that it may not be enough. With our roadways handling more and more cars every year, and the majority of the population owning cell phones, the concern over distracted drivers is greater than ever, even if it only amounts to extra traffic congestion. Save your calls for the parking lot!

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Reference:

Cooper, J.M., Vladislavljevic, I., Medeiros-Ward, N., Martin, P.T. & Strayer, D.L. (2009) An inves-



## Erin Walkom gains CCPE status!

By Lorel Hammerstad, Communications Specialist, EWI Works

Christmas came early this year for EWI Works Edmonton consultant, Erin Walkom. The first week in December, she received notice that she had gained CCPE status. She is now officially a Canadian Certified Professional Ergonomist!

After completing her Masters of Science degree in Ergonomics from England's Loughborough University, Erin worked on a four month project with EPCOR Utilities to complete her thesis. Soon after completion, Erin joined EWI Works in October of 2005. Her first assignment was to provide assistance with the completion of approximately 140 job demands

analyses across a variety of positions with the Capital Health Authority. The provincial organization's Patient Handling training program was also a project that Erin was involved in.

Since then, Erin has made contributions that have led to successful results in client projects as well as the growth of EWI Works. She has proven to be strong in presenting and training. In 2007, Erin spoke at four conferences based on the patient handling project, including the BC Healthcare Workplace Health, Safety and Wellness Conference and the 39th Annual ACE Conference in Toronto.

In October, 2009, Erin gave a talk on the processes and challenges of innovative training at the Alberta Health and Safety Conference. In addition, Erin developed and presented the recently popular “Slips, Trips and Falls” course.

Erin enjoys the atmosphere at EWI Works and looks forward to growing with the company and assisting clients with challenging projects. She is also a member of the Canadian Society of Safety Engineering and ACE. She also continuously seeks personal growth by seeking out new hobbies and enjoying outdoor sports.

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## What's the buzz at EWI Works

### Rock and Roll Race for the Cross Cancer Institute

On September 19, 2009, Lorel and friend, Brenda Bennett (seen here in the blue and purple wigs respectively) donned their glam rock wigs and make up to participate in the inaugural Rock and Roll Climb of Hope to raise money for the Cross Cancer Institute. The 5 kilometer run consisted of a hill climb and 3.5 sets of steep stairs around Edmonton's Victoria Park. Organizers say that the race was very successful, raising almost \$75,000 dollars for the cause with the aim of raising over a million by the seventh year of the race. While considered a pretty tough course, Lorel says she would definitely do it again next year.



### Erin presented at October's Alberta Health and Safety Conference in Calgary

The 8th annual Alberta Health and Safety Conference was held in Calgary this year October 26th to the 28th. Erin presented a talk on the 27th called "Innovative Training—Challenging Environments". The talk addressed how to meet the challenges of planning and delivering a training program to teach employees how to prevent Musculoskeletal Injuries in the workplace. Erin says the successful session was interactive and utilizes case study examples from a variety of industries.

### The MacDonald's head back to school.

This fall meant back to school in the MacDonald household. Donald

was co-teaching "Health and Safety Management—The Basics" at the University of Calgary. His wife, Kristen, has taken a position teaching grade 6 and music at St. Rita School in Calgary and little Dylan has begun his first experience with "school" at his day home. Donald is also busy preparing for the upcoming basketball season to step into his other role as a referee. In keeping with the "back to school" theme, he recently attended a provincial clinic where a former NBA referee was one of the clinicians.

### Linda attends workshop in Universal Design.

Linda also headed back to school this fall. Believing in continuing education to keep EWI abreast of changes and improvements in ergonomics, Linda attended the workshop, "Enabling Occupation Through Universal Design and Home Modification". The informative workshop, presented by occupational therapist, Kathy Pringle, was hosted by the Canadian Association of Occupational Therapists and co-sponsored with the Saskatoon Health Region. The course covered current findings, funding options and resources for carrying out home assessments and developing renovations or new construction plans to consider in an accessible home environment.

### Ed publishes another research paper.

Ed, along with research partner and friend, Bruno da Costa, have another paper published in the American Journal of Industrial Medicine. The paper is a review of studies in work related MSIs. You can find the paper by going to the following link:

<http://www3.interscience.wiley.com/journal/122596644/abstract>