Vibration in the Workplace

There are **two** types of vibration that employees are exposed to in the workplace. Both have the potential to cause injury. The two different types are:

1) **Hand-arm Vibration** – This vibration is transferred to the body through hand tools, or hand/arm contact with anything that is vibrating.

2) **Whole Body Vibration** – This vibration is transferred to the body by standing or sitting on a vibrating surface.

Hand-Arm Vibration

Hand-Arm vibration can cause a variety of symptoms, which can include:

- tingling/numbness in the fingers;
- white fingers;
- decrease in sense of touch;
- pain and cold sensations in the hands; and
- loss of grip strength

Whole Body Vibration

Exposure to whole-body vibration can contribute to the development of chronic back pain. Other factors in your work or personal life can also be contributing factors. Being exposed to elevated levels of whole-body vibration can also cause a variety of other symptoms, including:

- Abdominal Pain
- Discomfort
- Chest Pain
- Nausea
- Loss of balance
- Disc displacement
- Disc degeneration

Reducing Vibration Hazards Project

The Occupational Health and Safety Branch of Labor Relations and Workplace Safety in cooperation with members of the Motor Safety Association, conducted an ergonomic assessment to:

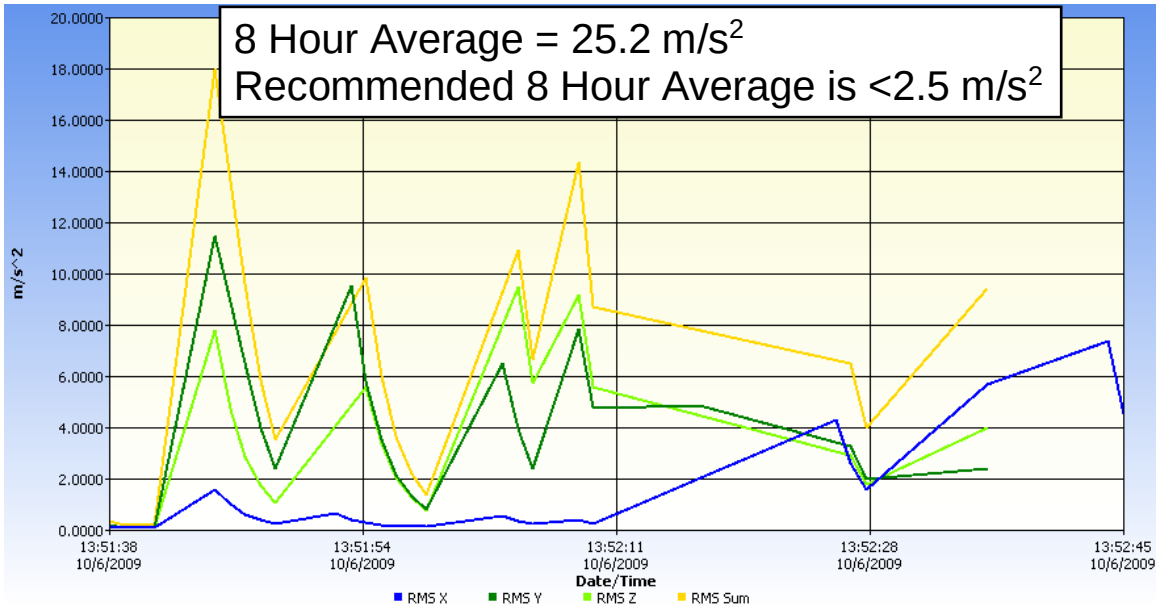
- identify vibration hazards using a Quest HAV pro vibration monitor;
- test solutions to minimize these hazards in the workplace; and
- Identify a cost-effective solution for reducing vibration hazards.

Reducing Hand-Arm Vibration

Measurements were taken to assess hand-arm vibration levels to which employees were exposed while using a 1" pneumatic drill (pictured below). The drill was used to remove lug nuts from an industrial heavy truck tire.

1" Pneumatic Drill – Trigger Handle

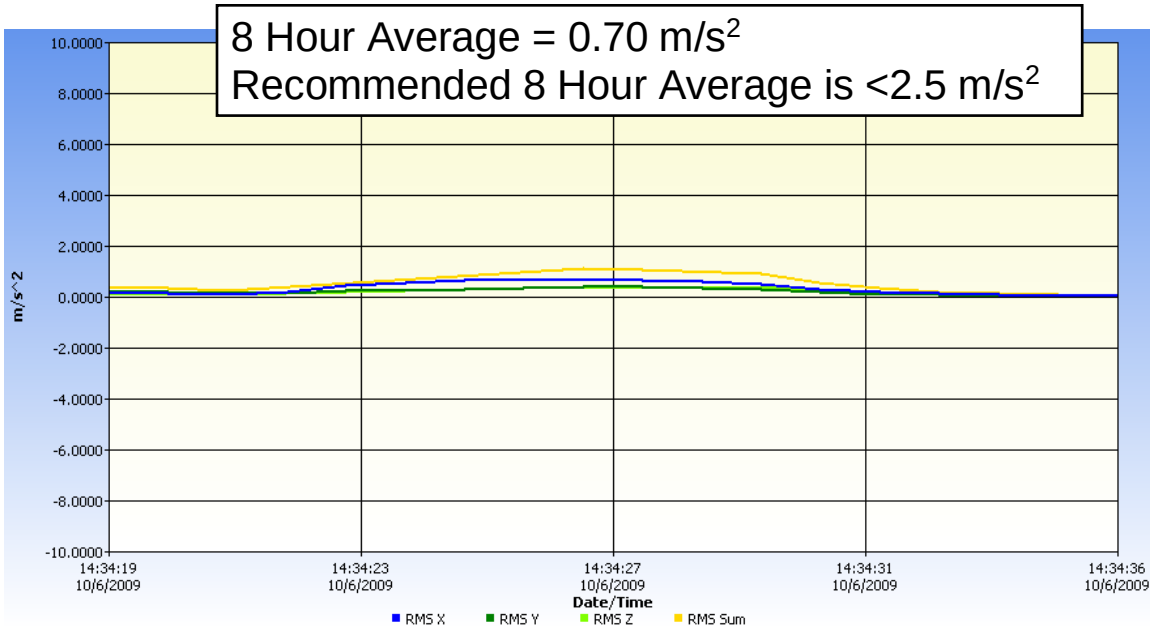
The following chart graphs the measurements that were taken over a short period. Using this information, worker exposure over 8 hours can be calculated. In this instance, a worker using this tool for an 8-hour shift would be exposed to a vibration level of 25.2 m/s^2 while the recommended level is less than 2.5 m/s^2. This poses a significant potential risk of injury to the worker.



An anti-vibration tool wrap (pictured below) was used as a potential solution for the hazard.

1” Pneumatic Drill – Trigger Handle with Anti-Vibration Wrap

The following chart illustrates how vibration levels measured for the same period, with this anti-vibration tool wrap attached to the tools, were significantly reduced.



For more information on this assessment or if you are interested in having a trained Certified ergonomic Specialist from MSA conduct an ergonomic assessment at your workplace contact us at 306-721-0688 or email info@motorsafety.ca