Whole body vibration exposure experienced by bauxite mining operators: An evaluation of heavy haulage equipment during varying seasonal conditions (wet & dry seasons) and the potential exposure risk

Marcus Brooks  
*University of New South Wales*

Marion A. Burgess  
*University of New South Wales*, mburgess@uow.edu.au

Jane L. Whitelaw  
*University of Wollongong*, jwhitela@uow.edu.au

Follow this and additional works at: [https://ro.uow.edu.au/sspapers](https://ro.uow.edu.au/sspapers)

Part of the Education Commons, and the Social and Behavioral Sciences Commons

Research Online is the open access institutional repository for the University of Wollongong. For further information contact the UOW Library: research-pubs@uow.edu.au
Whole body vibration exposure experienced by bauxite mining operators: An evaluation of heavy haulage equipment during varying seasonal conditions (wet & dry seasons) and the potential exposure risk

Abstract
Abstract presented at the 32nd Annual Conference & Exhibition of the Australian Institute of Occupational Hygienists Inc, 29 November - 3 December 2014, Melbourne, Australia.

Keywords
vibration, risk, potential, seasons, body, dry, whole, wet, conditions, seasonal, varying, during, equipment, haulage, heavy, evaluation, operators, mining, bauxite, experienced, exposure

Disciplines
Education | Social and Behavioral Sciences

Publication Details

This conference paper is available at Research Online: https://ro.uow.edu.au/sspapers/1476
Whole body vibration exposure experienced by bauxite mining operators: An evaluation of heavy haulage equipment during varying seasonal conditions (wet & dry seasons) and the potential exposure risk

Marcus Brooks, Marion Burgess¹, Jane Whitelaw²

¹UNSW Canberra, ²University of Wollongong

Operator Whole body Vibration (WBV) exposure levels were evaluated for different models of haulage trucks, in varying seasonal conditions (wet & dry seasons) at a Far North Queensland site.

Studies were made on 26 'belly dumper' haulage trucks at the remote bauxite open cut mine. These trucks ranged from 170 - 195 tonne capacities, and three different models (Cat 7760, Cat 777F, Cat 777G). The vibration exposure was evaluated at the seat/operator interface in accordance with Australian Standard (AS) 2670.1:2001, over a representative period of a complete haulage cycle (60- 90 minutes). Estimated equivalent daily exposure values in terms of the vibration dose value (VDV) were found to be in the range of 9.76 - 20.14 ms⁻¹.⁷⁵. These findings indicate that operators of mine long truck haul trucks are frequently exposed to WBV levels that exceed the limits that are applicable in the European Union with the probability of an adverse effect to their health in a moderate to high range. The difference in nature of the wet/dry season, introduces other factors that need to be evaluated; operational speed of haul trucks, road condition (size and nature of road degradation), driveability and training for all operating conditions. What are the effects on vibration exposure?