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What the Control of Vibrations at Work regulations mean to employers and how to meet them

The 'Control of Vibration at Work' regulations are here to stay, but don't believe the reports that it will end all maritime operations. This article attempts to separate the hype from the facts and explain how employers can continue to operate without risk of prosecution.

A period of unintentional scaremongering along with unhelpful rumours reporting that the WBV limits would result in the end of commercially viable operations has caused maritime companies to bury their heads in the sand and refuse to engage with efforts to reduce human impact exposure.

Professional boat users are protected by law the same as a worker in any other industry, but they face an increased risk from injuries associated with the constant impacts they receive during their daily activities.

Well intentioned, but flawed

EU legislation sets limits on the exposure to Whole Body Vibration (WBV) which in Europe is defined by EU Directive 2002/44/EC. Applied to all industries, including Construction, Mining and Maritime, this directive focuses on chronic conditions caused by long term exposure to vibrations which we define as those that infiltrate your bones and shake apart your cartilage.

The EU directive is undeniably essential. Short term exposure to constant vibrations might manifest itself as a numb leg, but the unfelt damage is in the joints. A worker may not feel it now, but with continued exposure they risk pain or soreness in the future, and by the time it is diagnosed the damage is done.



Advocators of improving health and safety for professional marine workers used the EU directive as the driving force to reduce injuries. Having been introduced and accepted in other industries, it was deemed to be the solution.

However, with the EU directive is flawed for use in the maritime industry; the required measuring methods do not work with marine seating ergonomics, the WBV exposure calculation is much more complicated than it appears and requires sophisticated electronics and mathematics along with frequency based vibration sampling.

Protection From Prosecution

The UK Maritime and Coastguard Agency will provide exemption from prosecution to employers that cannot meet the exposure limits required by the EU directive, providing they can supply evidence of monitoring and an attempt to reduce their workers exposure to WBV and other harmful impacts. Either a daily health questionnaire or an automatic impact exposure recorder is a cost effective first step before investing in more expensive shock mitigation equipment and provides a metric of before and after conditions.

Tracking an employee's impact exposure does not mean stopping work whenever it peaks. Most days it would be hoped that they are safe from risk, but in the event they have a build up of harmful exposure they should be placed on other duties with less exposure for a short period of time. When a crew runs into particularly bad weather and returns exhausted they are more likely to injure themselves on the next shift if they have not recovered in time. Rearranging their shifts will allow them time to recuperate on smoother water and get their energy back before tackling heavier seas.

Monitoring and Reducing Impact Exposure

Monitoring does not require endless paper work. There are now systems available that will automatically record the impact exposure alongside the vessels position, providing daily data in a user friendly format. Implementing small changes can make a significant impact on employee's long term health and maintaining this simple record will allow companies to prove they are engaging with the issues.

Shock mitigating equipment can reduce the crews exposure to damaging impacts. This includes suspension seating, shock absorbing flooring and personal equipment, but it is important to differentiate between comfort and protection.

Training can also offer significant rewards. A single day spent in a group training event learning from other peoples experience can highlight areas where skippers could make improvements. For example, many of us have travelled by sitting on the tube of a rib, but we wouldn't think twice about doing it again after seeing an x-ray of the damage that could be done if the boat were to fall into a single hollow unexpectedly.

A common mistake is to focus only on the skipper. In the marine industry there are often other passengers onboard. The skipper is in control and can better prepare themselves for impending



impacts, but the passengers are often less aware of what is coming and may not be experienced seafarers practised at absorbing the bumps.

This is the Future

With boats becoming faster and personnel resources reduced, there is even more pressure on professional marine operators to push the limits of their craft and crew. Unless they can invest in more boats and staff, the ability to monitor the health of their workers is paramount. Impact exposure and WBV are not going away and ignoring them will increase the chance of human injury or commercial liability. So it should be addressed now before it is too late!

Author

James Glover CEng, MIMechE, MRINA is the Technical Director of Dyena. He is a naval architect and design engineer with over 15 years experience in automotive, motorsport and high speed marine craft design.

The DaccR from Dyena measures accelerations simultaneously in 3 axes, alongside GPS data to provide accurate information in a user friendly format, with over 600 days recording on a single memory card.

Quotes

"It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees."

Health and Safety at Work Act 1974

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