

Date: 29/04/2010

Ref: VT09158

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## Initial observations relating to impact performance assessment of Point Two Equine Air Jacket

In order to illustrate that there are no additional risks associated with the Point Two Air Jacket (PTJ) when compared to other body protection products or no protection, TRL evaluated the performance of the Jacket in a two typical dynamic impact scenarios.

Scenario 1 - Impact to chest simulating frontal impact from 1.4m fall onto flat surface  
Scenario 2 - Impact to back simulating rear impact from 0.75m fall onto flat surface

The purpose was to investigate whether the Point Two Air Jacket was likely to worsen injuries to the neck and spine and what level of injury risk benefit could be achieved during a chest impact in a typical horse fall. Based on this study, the following statements summarise TRL's main observations.

- *There is no evidence that the PTJ would exacerbate spinal injury and in fact, during rear impact testing, it provided the greatest reduction in the neck and pelvis loading*
- *In combination, the BETA and PTJ provide reduced loading for the majority of performance measures and therefore improved protection to the wearer when compared to the BETA alone.*
- *The PTJ may have extended performance benefits beyond the fall scenarios considered.*
- *The PTJ, when used with a BETA Level 3 body protector, improves protection to the spine by up to **69%**<sup>1</sup>*
- *The PTJ, provides approximately **45%** more protection for the lower spine than a BETA level 3 jacket alone<sup>2</sup>*
- *The PTJ,, with or without BETA jacket, reduced the risk of rib fractures and underlying organ damage, by as much as **20%**<sup>3</sup>*

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<sup>1</sup> Reduction in peak neck and lower spine shear and compression loads for scenario A fall (when compared with no protection)

<sup>2</sup> Reduction in peak lower spine shear and compression loads for scenario A fall (compared with typical BETA level 3 protection)

<sup>3</sup> Reduction in risk of AIS3+ injuries, compared with no protection in scenario B fall.

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