



Breastplates affect jump shape, new research finds

The locomotion of the horse over a fence while wearing a variety of breastplates was studied during the analysis



Andrew Hoy competing in the new Fairfax breastplate

By ELEANOR JONES

JUMPING in conventional breastplates restricts horses' movements, changes the landing angle and could put more strain on forelimbs, a study has found.

In its latest research on tack, and its effect on equine movement and performance, saddle manufacturer Fairfax has turned its attention to breastplates.

The study analysed jumping with and without breastplates of different designs over the same fence, using specialist cameras.

"Regardless of breastplate design, this showed that the whole jump is adversely affected from the moment the horse is at the peak of take-off and its shoulder is in its most forward position," a

Fairfax spokesman said.

"It showed that breastplates have a significant negative effect on the jump. Attached to a saddle and girth, they make a restrictive 'cage' around the horse's shoulder apparatus, which affects his movement over a fence."

CHANGED TRAJECTORY

RUSSELL GUIRE of horse and rider analysis specialists, Centaur Biomechanics, told *H&H* he used techniques including pressure mapping and a motion camera.

"This allowed us to objectively evaluate how the horse moved, and see in fine detail what effect breastplates had on jump sequence and trajectory," he said.

"There's a strong association between increased pressure from tack and restricted locomotion.

Reduce this, and the horse increases his range of motion and becomes more symmetrical."

Mr Guire said that when wearing a breastplate, the horses took off and landed more steeply.

"There were changes in shoulder, elbow and knee flexion," he added. "As a result, the trajectory changed significantly.

"I feel this could have a direct impact on limb-loading.

"There are huge forces on the forelegs on landing and if you increase the angle, I think they'd increase, and my concern would be for the impact that would have.

"We're not saying breastplates cause injury, but it seems to alter jump technique, which could have long-term implications."

Fairfax product designer Vanessa Fairfax stressed the researchers are not trying to persuade riders to stop using breastplates, adding: "I think they play an essential role as a safety belt cross-country. But I think riders should seriously consider their design and fitting.

"The key is, think about the effect they could have. People don't appreciate the shoulders' full range of motion. We saw the effects over one fence, so imagine it on a cross-country track."

Vanessa stressed that a saddle-fitter should be a key member of a rider's team, as "if your saddle slips so much you need to nail it in place, you need it fitted properly before you go cross-country".

Eventer Andrew Hoy has been using the breastplate Fairfax has created since the research.

"I'm really happy with it," he told *H&H*. "It's very different from a traditional one but it does stop the saddle slipping, and the great thing about working with Vanessa is that these things are biomechanically tested.

"It was an extraordinary study. To see the restriction; it was far greater than I'd imagined, and I could feel the difference."

Mr Guire said this breastplate "simulated jumping without one".

"The research we've been involved in won't turn every horse into Valegro or a Badminton horse, but it allows him to use all his natural ability; we're just looking at whether we can make things better for the horse."