

The girth Team GBR kept as a secret weapon



This week, a new girth goes on sale that is proven to improve a horse's symmetry and freedom of movement. It's so revolutionary that our British Olympic team managers asked for its design to be kept secret until after the Games. So what's it all about? **Jaki Bell reports**

IN February 2011, Britain's World Class Performance director Will Connell made an appointment to talk to a leading saddler about a new product they had in development.

His mission? To request that the company delay its launch because he felt it could give the British Olympic team an edge.

Life in the world of saddlery doesn't get more exciting than this. But this is exactly what happened to Vanessa Fairfax of Fairfax Saddles, after spending four months developing a remarkable new girth.

The Fairfax Performance Girth is backed by scientific evidence that shows it can improve your horse's range of movement and reduces asymmetry within the horse's movement. It applies up to 85% less pressure at the key spots where a girth "bites". The product has been shrouded in secrecy for months, protected by confidentiality agreements, until now – it will be launched at Burghley today (30 August).

How did this wonder girth develop?

"I was watching my father produce a showjumper that had recently been backed," says Vanessa. "We were lunging it over a fence, then we tacked it up and lunged it again, and I noticed it moved differently when tacked up."

Vanessa, a member of the Society of Master Saddlers, was pretty sure it wasn't the saddle causing the change. She focused on the girth.

"I work with Mark Fisher, who operates Pliance testing [measuring how saddles distribute pressure across a horse's back] for the British Equestrian Federation [BEF]. I got hold of a Pliance pad, put it under a girth – with the aid of duct tape! – and did a pressure testing."

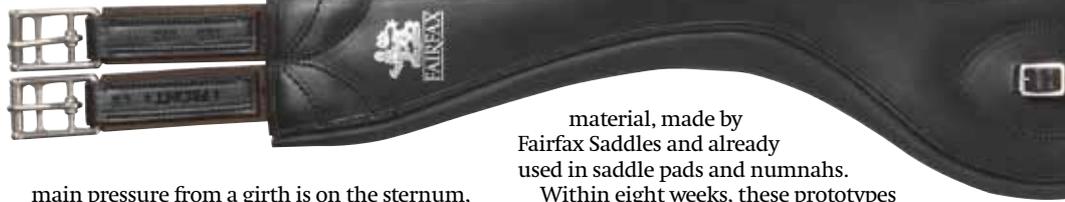
Pliance testing is done with a pad that contains sensors linked, via Bluetooth, to a computer, which is programmed to translate

the readings into understandable data.

"As far as we were aware, this was the first time that Pliance pressure testing had been used in conjunction with a girth," says Mark. "We've gone a long way with saddles, but no one has done any scientific research on girths."

"The results were surprising," says Vanessa.

People have always believed that the



main pressure from a girth is on the sternum, but Vanessa's testing revealed quite a different peak pressure zone. It is tucked behind the point of the elbow – where girth galls tend to be found.

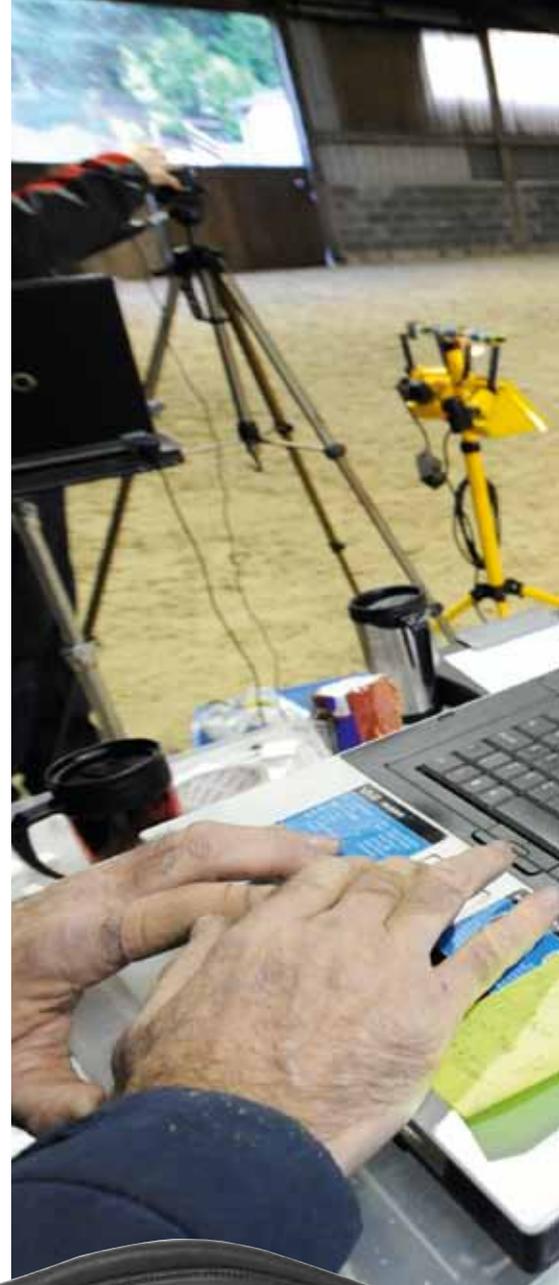
"We thought this point would vary according to shape, size and conformation, but it was always in the same band," says Vanessa.

Mark adds: "I rang Will Connell straight away. I felt there was a performance benefit to this girth and he said we should crack on with a proper testing."

Within four weeks, Vanessa had designed a prototype girth that was shaped to avoid that band of peak pressure. The girth is dramatically curved on the front edge to create room behind the elbow, where the bulk of muscle becomes trapped between the girth and the legs.

This leading edge is then structured to guide the muscles back under the girth, rather than blocking them, which happens in some girths.

Vanessa describes this as a "floating edge" and the design has been patented. The girth is lined with Prolite, a flexible cushioning



material, made by Fairfax Saddles and already used in saddle pads and numnahs.

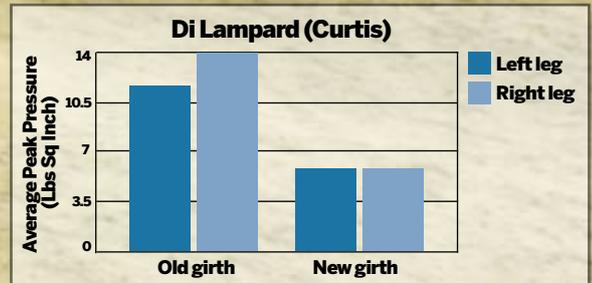
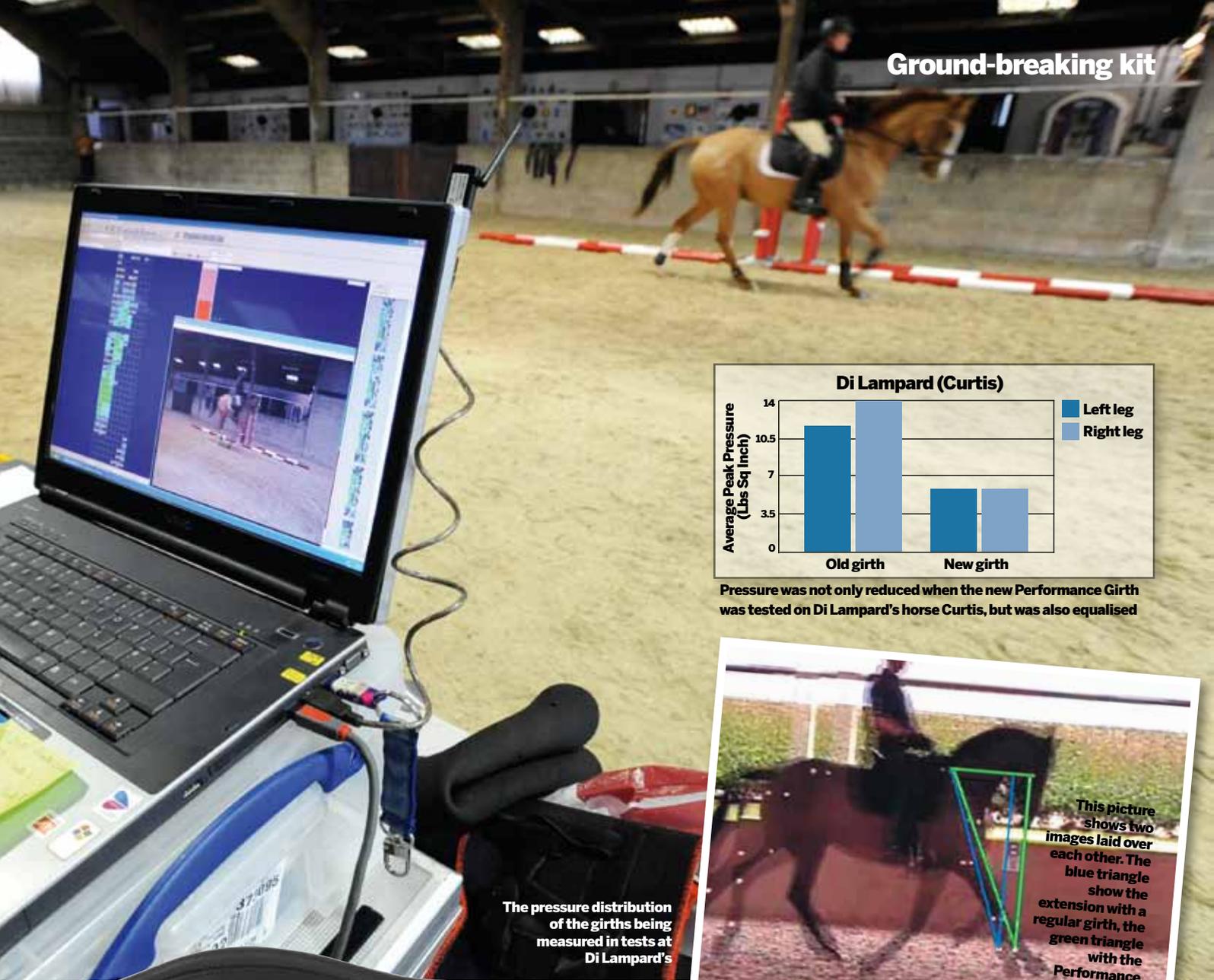
Within eight weeks, these prototypes were being tested.

"I was keen to see whether it would affect horses in a positive way," says Vanessa.

Biomechanical analysis



By striking a vertical 'control' line and measuring and comparing the angles of extension with the...



Pressure was not only reduced when the new Performance Girth was tested on Di Lampard's horse Curtis, but was also equalised



This picture shows two images laid over each other. The blue triangle show the extension with a regular girth, the green triangle with the Performance Girth

The pressure distribution of the girths being measured in tests at Di Lampard's



Vanessa used to compete internationally in showjumping as a junior. She doesn't find much time for competing these days, but keeps a horse on Di Lampard's yard, Spring Farm. Vanessa gave the girth to Di to try. How did Di feel about being a guinea pig?



...existing and then the new girths, increases in fore and hind limb stride length could be recorded

"I'd discussed the girth with Vanessa and it interested me," says Di. "You look twice at the shape — it would be very easy to put it on back to front."

"It's a wonderful idea because it enables the horse to use its shoulder a bit more. When you touch it, it feels much softer and more pliable."

"I found that my horses were freer in their movement. We have one horse that we never girth tightly, she would walk out 'cagey', but she's OK with it. Even the ones that were a little bit short-striding when you first walked them out of their stable showed an improvement."

'The eureka moment'

THE next step was to translate Di's feelings into facts. Via Will Connell, the BEF had agreed to part-fund further testing through the World Class Performance programme.

Vanessa works with Russell Guire of Centaur Biomechanics, who specialise in gait analysis research — many of you will have seen photographs or demonstrations of this, with horses' joints marked with polystyrene balls.

Russell has a camera that records 300 images

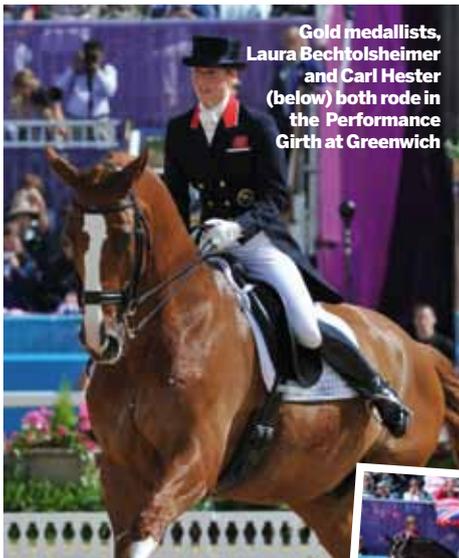
HOW MUCH?!

WE explained how this girth works to three readers and asked the question: "Would you spend this much — £220-£290 — on a girth?"

"Nope — at least not until I had seen proof of the pudding. A video would be useful..."
Jenny Astbury

"I'd want to look very closely at the scientific evidence and the 'proven' facts before parting with that amount of money."
Dawn McCormack

"I would if it meant I could gain dressage/ eventing qualification and make my horse's life more comfortable."
Annette Hughes



Gold medallists, Laura Bechtolsheimer and Carl Hester (below) both rode in the Performance Girth at Greenwich



a second, approximately 25 times faster than the human eye. These images are then fed through a computer programme that processes them, captures the data and provides information on joint and limb angles.

Mark and Russell joined Vanessa at Di's yard for the first formal testing in December 2010.

Di's stallion Curtis was studied on the flat and jumping 1.40m, both in his regular girth and in the Fairfax girth. Three things were established. The first was that, as was expected, with the increased freedom at the elbow came an increase in the horse's length of stride.

However, the next two discoveries were totally unexpected. When a horse lands after a fence of this height, the expected pressure on the points of the saddle tree increases from the normal 5-6lb per square inch of pressure to 14-15lb.

The Pliance pressure testing under the girth measured an astonishing 14-15lb of pressure behind the horse's elbow at the point of landing, when the horse's weight pivots over the leading leg. This pressure was just about halved when the Fairfax girth was worn.

Secondly, by comparing the degree of angle in the knee and hock joints, they established that the new girth removed any asymmetry between the pairs of legs.

"It was quite stunning, actually," says Mark. "Suddenly, you could make a huge difference just by changing the girth."

"As a performance advantage this is massive — but everybody should be able to feel a benefit."

"The symmetry is what is really exciting," he continues. "If you ride evenly and generate less wear and tear, the sounder your horse will be."

Russell Guire adds: "I think the girth is a significant step in reducing a horse's asymmetry and improving performance and soundness."

Says Vanessa: "We call it the 'eureka' moment! It was freezing cold at Di's that day, but we were running around with our jumpers over our heads — like footballers."

Hold the launch

THE BEF wanted to test the girth further. Several sessions were set up during Olympic training for the dressage and eventing squads — the showjumpers were on the road competing.

The riders knew they were testing a girth, but nothing more. They were asked to ride in their

normal girth, then swap to the new one and do exactly the same thing. Pressure readings were taken and joint angles measured to establish length of stride and range of movement.

"We asked the riders if they could feel any difference and what they noticed," says Vanessa. "Individual horses reacted differently, but they all moved more symmetrically."

"Initially we thought we were just improving protraction (angle of extension), but then we did more jumping and realised we were also improving the flexion of the knee and hock."

It was after one of these testings that the riders suggested that "we keep this to ourselves" until after the Olympics.

Will Connell takes up the thread: "We felt there was a definite advantage to how the

horses moved — the girth seems to allow a slight increase in the stride length and in the symmetry of stride — and that this could be a performance enhancement."

Mary King was one of the riders at the testing.

"I normally ride in a Barnsby comfort girth and I'm very happy with that, so I didn't notice any difference sitting on top," she says.

"But it was interesting to hear what the tests showed regarding

the reduction in pressure and the extra freedom. The analysis did show that the horses were stepping out and under that bit further."

Mary was one of several members of the British squad who competed in the Fairfax girth, purchased for them by the World Class Performance programme. Others included Laura Bechtolsheimer, Carl Hester and Richard Davison, and our para riders will be too.

Owing to sponsorship contracts, many of the riders involved are unwilling to discuss the girth.

So how is this girth different?

VANESSA describes the curved cut of the girth as "anatomical". She acknowledges that there are several brands — including Aerborn, Mark Todd, Tekna, Bates, Wintec and Devoucoux — on the market cut in this sort of anatomical shape. And almost every manufacturer has a version of the "humane" or "comfort" girth.

"Our curvature is different, the angle of our buckles is different and we have the floating leading edge," she says.

"Different horses have different chinks in their armour. A horse will hold itself in a certain way because of pressure — relieve that pressure and the horse can move more freely, depending on where the weakness was."

"Wherever the nature of that weakness, the girth helps," she asserts. "What's more, the benefits are cumulative as the horse gets used to the new set-up."

From the rider's point of view, Di Lampard sums up: "I think this enhances the movement

'I gained my highest score at the level'

DRESSAGE editor

Alice Collins tried out the girth. Alice is at British Dressage novice level working towards elementary with her five-year-old Faconnable.



"The shape of girths concerns me, so I like that this is cut back behind the elbows but I didn't notice any difference in my mare's usual reaction when girthing her."

"I schooled in the girth a couple of times before a weekend competition. My horse is very short-coupled, and drops her back and draws her neck up and back towards me, especially in competition, when I have less room for manoeuvre as I am trying to "sit pretty".

"Using this girth, I found she was more willing to stay up through the centre of her body, with her neck forward and down, and dropping the quarters a little to make a bridge, rather than me riding a ditch — which I often have to do in tests."

"We competed at Classic Dressage in Buckinghamshire in the novice restricted classes and won both. It was 32°C and she scored 68.46% in the first test and 69.58% in the qualifier. This was our highest ever novice score. To achieve decent percentages in two tests is unusual, as we usually bomb in the first."

"Would I spend this much on this girth? Yes, at a push. Especially if I had a sensitive horse — I think it would help."

"My only criticism is that lots of dressage saddles have slightly mismatched holes in their straps to the girth and there is no balance mechanism or elastic to allow for this."

of the horse and it has the ability to engage better.

"The freedom in movement helps the hindlegs come up and maximises movement elevation in flatwork as well as when you jump."

Last word goes to Vanessa: "When you can see a difference so obviously, it's like the big bang moment. People spend a lot of time and effort on a saddle and they have any old girth, but it's such a key bit of kit." Well, it is now. H&H

► To see a video of the girth testing visit www.horseandhound.co.uk/fairfaxgirth.

Exclusive 10% discount offer to H&H readers

THE Fairfax Performance girth is priced from £220-290 and is launched at the Land Rover Burghley Horse Trials today. Fairfax Saddles is offering *Horse & Hound* readers a 10% discount on the price. To take advantage of this offer — available until 30 September 2012 — take a copy of this feature to the Fairfax Saddles stand in The Horse Village at Burghley or the Espayo National Dressage Championships (13-16 September). You can also purchase by mail order and claim a discount from Woolcroft Saddlery: www.woolcroftequineservices.co.uk.