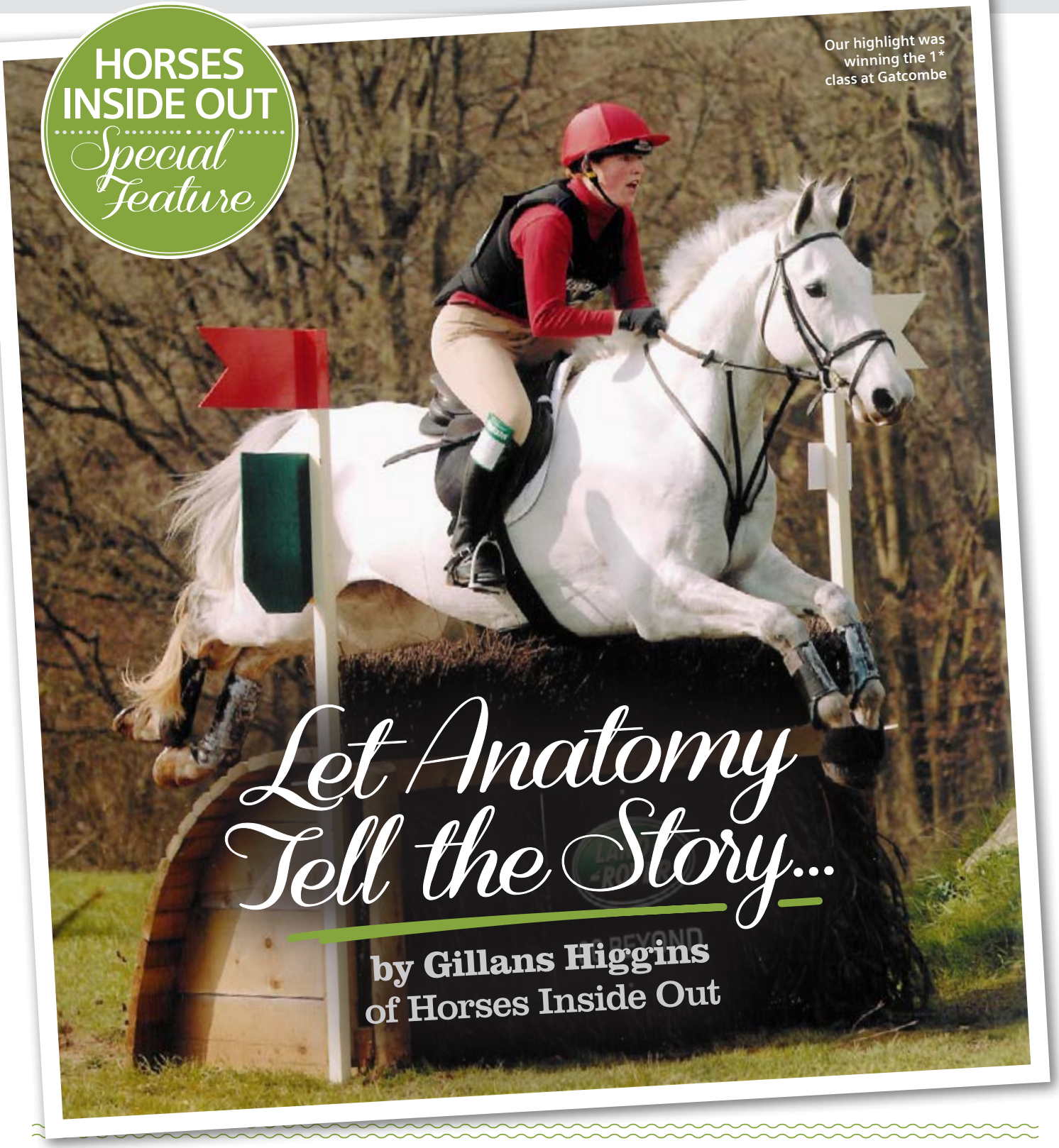
HORSES INSIDE OUT

Special Feature



Our highlight was winning the 1* class at Gatcombe

Let Anatomy Tell the Story...

by Gillans Higgins of Horses Inside Out

When Kelly asked me to write an article for the next edition of *IH Magazine*, after some thought I decided to suggest something rather different. As many of you know, my work aims to help improve our understanding of horses so we can give them better lives and improve our bond and experiences with them.

I have always said that education is the key to improving welfare and performance. "Let the anatomy tell the story" is a quote I often have been heard to say. What do I mean by that... let me give you some examples. I am regularly asked to give my opinion on bad practices within the equine world and I always prefer to answer with an explanation about the anatomy and the biomechanical implications of the position or movement and the effect on the horse so people can make up their own minds.

For example, when asked to present at the 2010 WAHO (World Arabian Horse Organisation) in Qatar to demonstrate why shanking and the hard stand-up are not the best practice I demonstrated the effect of a high head position and the effect on the withers, back, spinous processes, spinal ligaments, abdomen, and psychological as well as physiological effects. When asked questions about rollkur I can explain the effect of the position on the structures of the neck and the biomechanical effects it has on the back, fore, and hindlimb movement. In my opinion, a good understanding of anatomy will give you the answer and a clear path forward.

Since I started Horses Inside Out in 2006, Freddie Fox has been a constant presence. From 2006 to 2016 he travelled with me to perform at lecture demonstrations across the country, helping people to understand more about anatomy and biomechanics and therefore hopefully helping their horses.

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PICTURE PERFECT FREDDIE FOX

Freddie was the original Horses Inside Out horse

He has been with Horses Inside Out from the very beginning. He has been painted with every anatomical system, the skeleton depicted from the side, from above, in front, and behind! The muscles, fascia, tendons, and ligaments as well as the digestive, respiratory, endocrine, lymphatic, cardiovascular, and even the reproductive system of a mare in foal! I think he holds the record for being the first Gelding in Foal.

> "...it was only fitting that Freddie should continue to raise awareness..."

Freddie has been painted with every anatomical system, including the skeleton depicted from the side, from above, in front, and behind!

Horses for Courses

At my lecture demonstrations and courses, I use bones to further encourage the visualisation of anatomy and movement. And, over the years I have created quite a collection of different examples, including a range of sizes, ages as well as examples of different pathologies.

When we study the bones of a horse, they will tell us a story. For example, there may be a pattern of arthritis in the left facet joints of the thoracic spine but not the right, this could explain why the horse preferred to bend right. Thickening of the bone at certain muscle insertion points (insertion desmopathy) can indicate that there was more stress, tension or activity in those muscles compared to others from which we can assume certain postures or way of going.

In July 2021 we sadly said goodbye to the wonderful Freddie Fox, he was the horse of a lifetime, and he gave so much to the world of horses and helped to educate thousands of people across the world through Horses Inside Out.

After 24 years, twenty with me, it was such a sad day when we lost him. During our time together we rode all around the countryside, on beaches, competed in dressage, showjumping and team chasing, trained with Caroline Moore, Richard Davison, and many other top coaches, evented up to intermediate level and our highlight was winning the 1* class at Gatcombe, receiving the prize for the best young rider under 25 from HRH The Princess Royal.

He has travelled all over the UK to lecture demonstrations and events. One of his many highlights was visiting BBC Television Centre in London where he famously sampled the grass in the Blue Peter Garden. In later years he became a wonderful ride for my father and an expert teacher for my partner in all things stable management.

> "One of his many highlights was visiting BBC Television Centre in London where he famously sampled the grass in the Blue Peter Garden."

Having given so much, it was only fitting that Freddie should continue to raise awareness about equine anatomy, biomechanics, posture, movement, soundness, and welfare for the good of horses everywhere. So, we made the very difficult decision to keep Freddie's bones.

I would like to say a huge thank you to the Veterinary department at Bristol University for so sensitively and beautifully helping to prepare his skeleton. After carefully studying the bones and varnishing them for protection, we took time to decide on the best position to showcase Freddie. We chose to base the position of the trot on Freddie's pose on the *Horses Inside Out* logo, and as featured on the front cover of *How Your Horse Moves*. We felt that this position demonstrates a large range of limb movement and allows people to consider how their own horse's skeleton moves.

With the help of my father (whose mechanical engineering background was invaluable), we started the long, meticulous, and challenging process of "building" Freddie's skeleton. I have so much respect for this horse, so a great deal of care was taken and to be honest, it felt like such a privilege, we just wanted to make sure we did him justice.

Having decided on the position it was a case of then meticulously measuring the length of the bones and angles of the joints to design the supporting frame which was produced and welded together by my good friend Phil from Old Dog Steel.

I was pleased to include every part of the skeleton in this build including the hyoid apparatus and the sternum and costal cartilages which we found particularly difficult and fiddly to get right.

At the Horses Inside Out Conference in February 2023, we revealed Freddie's skeleton. I must admit I got very emotional when sharing his story. It was fabulous to see (when asking the audience to raise their hands) how many people had met Freddie on a course or at a lecture demonstration, had seen videos of him in the Horses Inside Out Academy or seen pictures of him in my books. So, I was not the only person to get emotional that day! Everyone seemed fascinated by his skeleton and appreciative of the opportunity to learn more from him.

Here's what Freddie's farrier, Mark Johnson, had to say...

"I met Freddie at this year's *Horses Inside Out* conference after he had travelled over the rainbow bridge.

"When one interacts with a horse over several years it's almost impossible not to feel some connection. Freddie had his issues and in our latter years, the process of hoof care became more challenging for both of us. Yet bless him, with his final evidence of various pathologies revealed, which I know caused him a degree of discomfort, he always tried for me.

"Freddie is a legend in his own right and it's a courageous act on behalf of Gillian to carry on and allow her beloved horse to continue to help educate all of us who wish to learn. I haven't the words really, when I stand by his skeleton there is a deep "something" present – that's for sure."

Continued overleaf >>

Let Anatomy Tell the Story...

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A PICTURE PAINTS A THOUSAND WORDS

Since the conference, Freddie has taken part in several courses and events at Horses Inside Out HQ and will continue to do so into the future. He was also featured in the Anatomy Exhibition at the 2024 Horses Inside Out Conference.

I am so proud and pleased that he will live on and continue to help others learn. However, I wanted to share with you some of the things I learnt from Freddie's skeleton. As I mentioned, studying the bones of a horse can tell a story, indicate patterns, and suggest a history of problems. But to study the bones of a horse you know really well takes it to the next level. We can learn something from every horse we interact with. But I would say even if we feel we know a horse inside out they are holding something back. Horses are incredible animals that have done and do so much for us.

As prey animals, they instinctively cover up problems and carry on as if everything is ok. This is why any slight hint of a change in movement or behaviour should be questioned and investigated. I knew Freddie well but studying his skeleton highlighted even more that I was not aware of, but looking at his life perhaps it explained some patterns and episodes.

Freddie Fox's skeleton

Freddie Fox's lower neck and wither

Freddie Fox's lower limb

Freddie Fox's skull

1 About the Lower Limb

At around 16 years old we retired Freddie from serious jumping because of the boney changes in his left fore coffin joint

In this close-up shot of Freddie's lower limb, you can clearly see the lower part of the cannon bone, long pastern, short pastern, and pedal bone. The surface of the bone should be reasonably smooth but as Freddie was 24 years old there are some signs of a long life... the almost bubbly appearance on the sides of the short pastern and end of the long pastern is one example; can you spot any others?

2 About Head & Neck Position

I love this moody shot of Freddie's head and neck. He's holding quite a high head position here, so it makes it hard to imagine all the topline musculature and soft tissue structures that lie above the neck vertebrae.

No wonder there are so many misconceptions about the positioning of the neck vertebrae in horses! Mechanically, as the horse's neck is horizontal rather than vertical like ours, it makes sense that the cervical vertebrae are close to the underside of the neck. If that were not the case the muscles would not have the strength and leverage to hold the head up in a pose like this one.

3 About Continuity

In anatomy, everything is connected to everything. For learning purposes, we often divide the body into parts, however, this breaks up the body in our mind.

I love this photograph of the base of the neck turning into the thoracic vertebrae between the scapulas (shoulder blades). It really helps give a sense of continuity. No wonder then, what happens in the back affects the neck and vice versa. So often we hear of horses that have symptoms of back pain when the problem comes from the neck, and I think this photograph helps to illustrate why!

4 About the Skull

What a gorgeous view of Freddie's skull – the angle seems to have captured his character and personality!

Notice the holes in the bones; these are called foramen and are where nerves emerge to serve the muscles and superficial structures of the lips and nostrils. Understanding the anatomy of the head is vital for bridle and tack fit.

TO FIND OUT MORE

Please go to www.horsesinsideout.com to see Gillian's amazing range of learning experiences and materials

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