

# Unorthodox Approach Succeeds In WHITE LINE CASE



**FIRST LOOK.** When farrier Steve Wisnieski was first called in on this white line case, Samson, a 6-year-old Percheron gelding, was shod with a hand-made heart bar shoe with a nail in each heel and a wood screw in the toe.

## Size and weight of affected Percheron led to emphasis on providing support

By Stephen R. Wisnieski

**S**amson is a 6-year-old Percheron gelding. He stands approximately 17.2 hands and weighs about 1,700 lbs. Prior to this incident of white line disease (WLD), he had been a perfectly healthy horse and had been under my care as both a trainer and farrier.

Other than when he was in training and being shown, he has been barefoot. His owner moved farther away and began using a local farrier in her new area. When Samson contracted WLD,

she chose to bring him to me for further treatment.

### Defining White Line Disease

WLD is a bacterial/fungal infection of the hoof. To understand this, we must first understand the basic physical layout of the equine hoof.

The hoof wall is comprised of three layers: *stratum externum*, *stratum medium* and *stratum internum*. The *stratum externum* is the shiny outer hoof wall that we see. It is a (relatively) thin layer of cells. The next layer, *stratum medium*, consists of horn tubules and intertubular horn. It makes up the bulk of the hoof wall. Finally, the innermost section, *stratum internum*, is the non-pigmented section that attaches the hoof wall to the third distal phalanx (coffin bone or P3).

It is thought that the WLD process begins when a separation occurs in the nonpigmented horn at the junction between *stratum medium* and the *stratum internum*. The most common signs of WLD are an unexplained hoof wall separation. If the farrier/trimmer does not fully investigate the cause of the separation, WLD can gain a solid foothold and begin its insidious infection. Left unchecked, it can kill the horse.

### Initial Visit

In February of 2007, I was approached by Samson's owner, and asked to take a look at Samson. He had been found to have a very invasive WLD infection and subsequent associated lameness issues.



**ANOTHER VIEW.** In this view, you can see the wood screw in the toe clip. Note that the quarters had been debrided by a previous farrier in an attempt to combat a serious white line infection.

His previous farrier had performed several hoof resections, finally resulting in about a 30 percent loss of dorsal/quarter wall. Samson was shod with a hand-made heart bar shoe held on by a nail in each heel, and a wood screw in the toe.

The owner came back to me because they felt that my expertise with drafts would be a better option for the horse. After a discussion about the case, the owner made the decision to put the horse back under my farrier care.

### Support A Priority

My priority at this point was to provide more support for the foot. In the condition the foot was in, if the shoe had come off, the horse would have stood a better than average possibility of having a serious (possibly terminal) event in

“My focus was providing more support for the foot...”

which he would lose P3 support within the hoof capsule.

It’s important to understand that this horse is big and he is heavy. The added weight makes the forces applied on the hoof more severe than those farriers would have to deal with on a light horse. So, I needed to provide a combination of more dorsal hoof-wall support and ground support for the hoof, while also managing the WLD.

My normal protocol for WLD is to debride the hoof wall back to the point of healthy hoof wall junctions. Air and sunlight are the best tools available in WLD infections, as the causative organisms are anaerobic in nature, meaning they thrive in the absence of oxygen.

### Medication Choices

This resected area is then medicated with one of the following: betadine ointment, 2 percent iodine, copper sulfate or methiolate.

In this case, the owner had treated the hoof with methiolate for several months

(hence the red hue you can see on the hoof in the accompanying photos). After weighing several factors, my final decision was to deviate from the norm for WLD and focus on providing more support for the foot.

In providing more support, I would be forced to essentially “seal” the foot with Equi-Pak products. In deciding to seal the foot, and thus seal the WLD site, I knew I would be removing air and sunlight from the infection but I felt that was the lesser of two evils.

I was more willing to take the chance of a reoccurring white line infection vs. the chance of having a catastrophic bony column support failure event. I person-



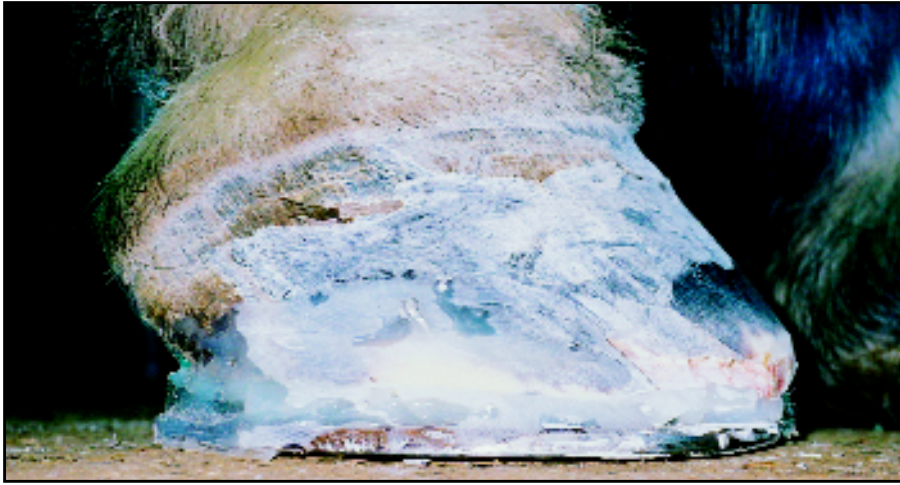
**BIG HORSE.** Because Samson is a big and heavy horse, support was a major concern in this case study.



**DEALING WITH A FALL.** Samson came up lame in the foot Wisnieski was treating after a fall. The farrier put together another glue-on package, this one incorporating an EDSS support pad.



**THE INSIDE STORY.** The X-ray on the right was taken at the beginning of the treatment. The one on the left was taken 7 weeks later.



**SHOEING ADJUSTMENT.** At this point, Samson's affected foot was shod without a toe clip and the shoe was set back. An EDSS support pad was still used.

ally knew this horse, what his personality was and what he was likely to do.

My first job was to make sure the entire WLD infection was eradicated.

I used a Dremel tool, and revisited the entire infection site, cleaning out all the crevasses in the foot. I then applied a coating of Vetec Equi-Pak CS (copper

**“My first job was to make sure the entire infection was eradicated...”**

sulfate) into the entire resection. On top of the Equi-Pak CS, I applied several layers of Vetec Adhere.

For the bottom of the hoof, I prepared a glue-on shoe. I used a piece of plastic gutter guard between the shoe and foot to help keep the packing in. I filled the entire bottom of the foot with Equi-Pak CS. I was then able to anchor the shoe with two heel nails.

### The Incident

The initial glue-on shoe stayed on for 6 weeks. When it fell off, Samson came back for the next shoeing. I was very pleased with his progress

At his second shoeing, I repeated my first shoeing. I was very pleased to see that there was no increase in the WLD. That proved the efficacy of my cleaning

of the resection along with the copper sulfate packing. However, shortly after that shoeing, I got a call from the client stating that Samson was dead lame on his bad foot. I returned and examined the hoof and shoeing package, which was still intact and viable.

I could not find any problem with the shoeing package, but did discover a significant swelling on his fetlock.

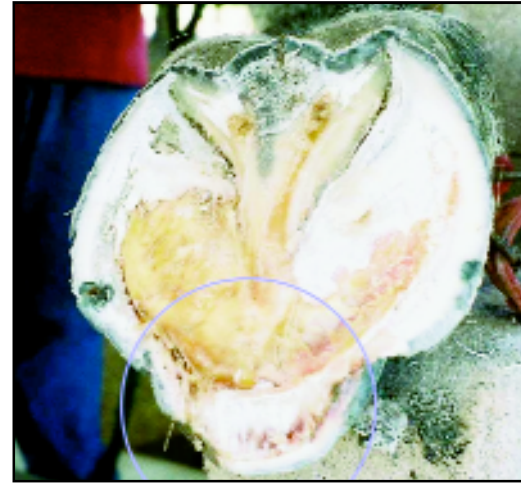
Samson's owner told me of a slip and fall that the horse took coming into the barn. At that point, I recommended Samson be seen by a vet immediately. The veterinary diagnosis was a torn or sprained suspensory ligament. X-rays also revealed a slight amount of P3 rotation.

It was speculated that the rotation was a result of the damage done in the fall combined with the poor adhesion of P3, due to the lack of hoof wall support. Even though I had built Samson a new hoof wall, the underlying adhesion of P3 was still impaired.

### Adding More Support

With the rotation, we now had to add more support to the bottom of the foot, so we prepared a new shoeing package. On this package, I used an Equine Digital Support System (EDSS) support pad and glued the pad and shoe to the foot with heel nails for anchors.

Samson walked off sound and happy. This package stayed on for 7 weeks, at which point we had new X-rays taken. They showed that we had made good



**TOE GROWTH.** The hoof grew excessive toe, which Wisnieski decided to allow in order to keep as much dorsal wall support as he could. At this point, he decided he could start trimming the foot closer to a normal shape. This photo was taken after the hoof wall was prepared for another shoeing package.

progress, but we still had more issues to deal with.

Samson did have an abscess that drained at the coronet band. At the same time, we had significant toe growing on the hoof. I had anticipated excess toe and now seemed to be the time to address it.

I was willing to let the toe grow a bit in order to keep as much dorsal wall support as I could. I was at a point that I felt his internal hoof structure was healthy enough for me to begin to “shrink” his foot to a more normal size.



**BRIEF SETBACK.** Samson's recovery was setback slightly when the laminar wedge pushed the hoof wall out, leaving a hole and making it necessary for one more shoeing while the open area grew out.



**AFTER 9 MONTHS.** These photos show the hoof after 9 months. Most of the laminar ledge is gone (left). While you can still see the remains of the abscess (center, circled), it is growing out. The sole (right) has also grown in nicely.

Additionally, as a result of the rotation, abscess and de-rotation, there was a sizeable laminar wedge in the hoof.

### Another Shoeing Package

I prepared the hoof and glued on another shoeing package. This time I removed the toe clip and set the shoe back. I also rounded the toe of that shoe to aid breakover. I removed most of the laminar wedge. I also used an EDSS support pad again.

This package stayed on 7 weeks as well. When Samson came back for a reset, I was going to leave him barefoot, as he had made such good progress. His abscess rupture had grown halfway down his hoof wall. I was just about done with the foot, and something made me want to take a closer look at that rupture site. Something just didn't look right.

Taking my hoof knife I opened that


site, and was surprised to see there was a significant hole. The laminar wedge had pushed the hoof wall away, leaving a relatively huge hole. I decided to shoe him again, choosing to err on the side of caution.

### Back To Barefoot

Finally, in July, he was to the point that I felt he could and should go barefoot. His final shoeing package stayed on for 8 weeks, with the shoe coming off the night before he was due for resetting, however the pad stayed on. Most of the laminar wedge was gone as were most traces of the abscess and the sole had grown in very nicely.

We took an unorthodox approach to this case, and we succeeded. Good farriery sometimes calls for thinking "outside the box." In just over 9 months, we brought this horse full circle from a

**"We took an unorthodox approach and succeeded..."**

horribly disfigured and dysfunctional hoof to an almost normal, functioning hoof. We still have a way to go to get him back, but the hard part is over. Now, it's just up to Mother Nature and continued good farrier work and owner care. 

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*Steve Wisnieski of Sealy, Texas, has been a farrier for more than 10 years. He is president of the Texas Draft Horse and Mule Association. With his family, he run Horse-Lake Farm. They are members of the Clydesdale Breeders Association.*



**BEFORE AND AFTER.** These two pictures show the condition of the hoof at the beginning of the treatment (left) and at the 9-month point.