

The Natural Angle

A PUBLICATION OF PRACTICAL IDEAS AND SOLUTIONS FOR FARRIERS

Volume 6: Issue 2

RADIOGRAPHS FOR THE FARRIER

By Stephen E O'Grady, DVM, MRCVS

INTRODUCTION

Radiology of the equine hoof is used to confirm various disease processes such as laminitis, third phalanx fractures, osteoarthritis (ring bone), navicular disease and extensive hoof wall separations. It has become quite beneficial for the farrier to use radiographs for guidance when trimming the equine foot. We can immediately see the additional information that can be gained from a radiograph taken of a distorted hoof capsule. One can see the orientation of P3 within the hoof capsule, the hoof/pastern axis, how much and where the foot should be trimmed for better alignment and where the shoe should be placed under the limb for the best mechanical advantage. The extent of a hoof wall separation associated with White Line Disease can also be observed. The two radiographic views useful to the farrier are the lateral view (from the side) and the dorsal/palmar view (from the front).

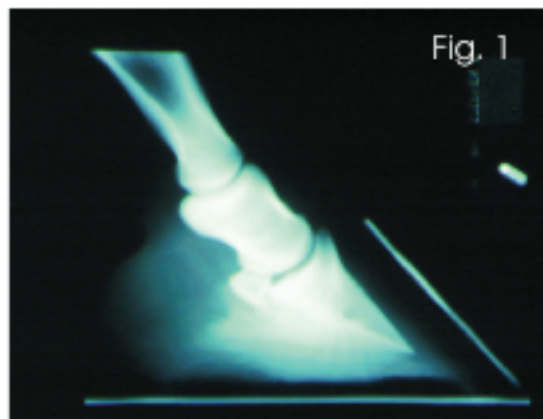
METHOD

When using radiographs for guidance in trimming the foot it is important that the image generated by the x-ray machine is the same as the foot i.e. no magnification. In this way, measurements taken from the x-ray can be transferred to the foot. This is controlled by the focal-film distance (FFD) and is easy to check.

The shoes should always be removed and the feet thoroughly cleaned. The horse should be stood on a flat, level surface. To appreciate bone position, the radiographs should be taken with the horse bearing weight and both feet placed on wooden blocks of equal height. The cannon bone should be perpendicular to the ground. This can be accomplished by placing a level on the dorsal surface of the cannon bone. A small carpenter's line level can be placed on top of the x-ray machine to ensure that it is level with the ground. The wooden block should have a wire imbedded in the surface and another wire should be placed on the dorsal hoof wall. These wires will outline the hoof capsule (Fig 1). Radiopaque markers such as a thumbtack can be placed near the apex of the frog and the end of the heel. After taking the radiographs, the spot in the apex of the frog where the thumbtack was placed should be marked by creating a small channel in the frog with the hook of the hoof knife. Likewise, a small channel can be placed in the outer hoof wall next to where the tack was placed at the end of the heel. These marks will act as landmarks for transferring measurements obtained from the radiographs to the foot.

INTERPRETATION

The lateral radiograph will show the position of P3 within the hoof capsule.



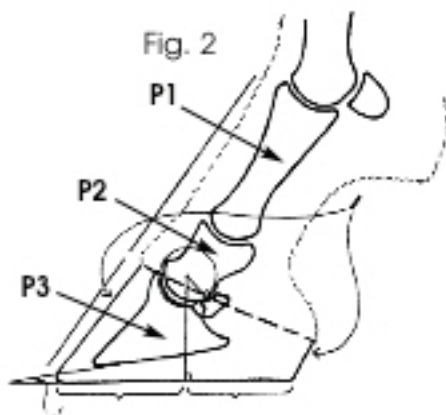
The ideal situation is to have the center of rotation in the middle of the foot (Fig 2). A perpendicular line dropped from the center of rotation should correspond to the widest part of the foot. The distance from this line to the heels and the distance from this line to the toe should be approximately equal or a ratio of 60% toe /40% heel. The lateral view with the markers in place will show the length of toe present and the alignment of the dorsal surface of P3 with the dorsal hoof wall. One of the most important aspects of using radiographs is to accurately determine the sole depth and what steps can be taken to improve it if necessary. Inadequate sole depth will usually be accompanied by excessive toe length.

The x-ray will show whether the hoof pastern axis is parallel. If the axis is broken forward (club foot) or if the axis is broken back (long toe underrun heel), the radiograph will reveal the degree of deformity and the best way to trim the foot to improve it.

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RADIOGRAPH continued

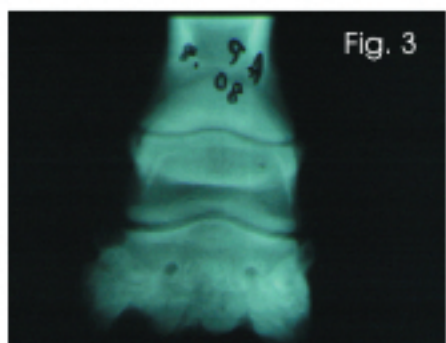
Fig. 2



Using the opaque markers, measurements can be drawn on the radiographs and transferred to the foot. Using the groove placed in the frog when the x-rays were taken, the distance to the center of rotation or to the point of optimum breakover can be determined. Using the channel placed at the heel, one can determine how much additional heel support should be provided or how long to make a bar shoe.

The dorsal/palmar view can be used to evaluate medial/lateral orientation (Fig 3). Caution should be used here as a change in the medial/lateral orientation is often coupled with the conformation of the limb. What is important when viewing the dorsal/palmar radiograph is if there is narrowing on one side of any of the joint spaces above the foot. This can often be corrected through trimming. A veterinarian can point out this finding.

Fig. 3



In summary, using radiographic guidance when trimming feet can be an asset to the farrier. It will also enhance communication between veterinarians and farriers. This added communication can only benefit both professions and most of all - the horse. **n**

Vettec Update

As many of you have heard, it appears the manufacturer of several of the acrylic-based (PMMA) adhesives on the market has discontinued production for the equine industry. This has caused some confusion and produced many questions concerning all equine repair materials.

Vettec would like to take this opportunity to ease any fears you may have about their products. First of all, Vettec products are urethane-based - not PMMA or acrylic-based. This means no odors or fumes and ensures you have a non-toxic material to work with. Secondly, Vettec manufactures their product line and is not reliant on another source. This means they have a safe and reliable supply for the market. Other brands may be scrambling to find replacements from other manufacturers but Vettec can continue to supply the whole range of Vettec products in a consistent manner. Don't confuse the Vettec urethane based products - Equi-Thane, Equi-Pack, Equi-Build, Superfast and others with the acrylics that have similar names.

If you haven't already experienced the benefits of using Vettec, now is a good time to check out the new technology from Vettec. From hoof-repair and custom urethane shoes to sole packs and support materials, Vettec is there to help. For more information visit the Vettec website - www.vettec.com or call them at 800-483-8832.

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What is Balance?

Trimming and Shoeing for Proper Medial/Lateral Balance

By Andrew Elsbree, CJF

To get a horse in proper balance you must begin by observing the horse's conformation and how his feet land on the ground. I begin by watching the horse walk as he comes to the shoeing area. Is he landing flat? Then I take a couple of seconds to stand in front and get a good look at the front feet to see if either the medial or lateral side shows any distortion. At this point, I've already begun to make a mental plan for balancing the horse's front feet. I always try to start on the foot with the most distortion. Before picking the foot up, I stand behind the foot and try to sight from the fetlock to the border of the ground surface of the hoof. When a horse is in balance, you should see three circles: the fetlock, the coronary band and the border of the ground surface of the hoof. Everything I do in trimming and shoeing each foot will have an effect on the horse's balance. By achieving a well-balanced foot with a symmetrical shoe applied, shoeing the horse becomes a very easy job.

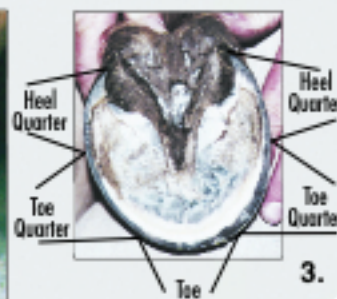
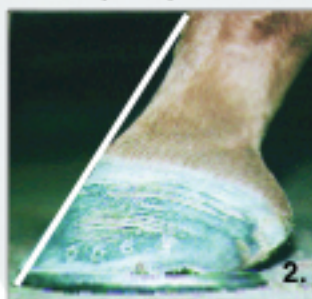
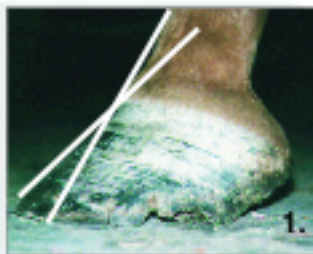
Distortion or flares are indicators of a foot that is out of balance. In most cases, it is important to lower the part of the foot with the flare. If you have a good, flat surface to walk the horse on, you may be able to determine if one side of the hoof is hitting the ground before the other. In most cases, the side hitting the ground first will show distortion and will need to be lowered. Once you have decided how to get the foot to land flat, go ahead and trim it.

The next step will be to address distortion of the hoof wall. By looking at the bottom of the foot, I examine the wall thickness to determine if it

is thicker on one side or the other. I then, while holding the foot between my legs, use the sharp side of my rasp to mark the hoof wall that I want to remove when dressing the foot. I run my rasp around the ground surface edge and hold it in such a way that it only cuts out an eighth of an inch up the wall. This allows me to make sure that I have plenty of hoof wall left for nailing on the shoe. A good rule of thumb is never remove more than half of the

while adding width to the opposite side. In some cases, this may require punching fine nail holes on one side and coarse nail holes on the other. The shoe should contain the five symmetrical parts of the foot. I find that even if the foot can't be brought all the way into symmetry at this time, the shoe should be made symmetrical and then boxed off back to the wall. Having a good perimeter fit and making sure the shoe hasn't shifted while nailing will result in a more balanced hoof.

1. This foot shows the undesirable effects of a long toe and heel. Note the misalignment of the hoof/pastern axis. 2. After trimming the ground surface and backing up the toe from the front you can see the positive results on the hoof/pastern axis. 3. Dividing the hoof into 5 sections can help work towards symmetry.



thickness of the hoof wall. While marking the wall, I try to define the foot into five symmetrical parts—the toe, the toe quarters (stopping at the widest point), and the heel quarters. If you do this on every foot you trim, it won't take long to get them symmetrical. I then pull the foot forward and dress the hoof wall down till my mark disappears. Now the ground surface border of the hoof should be almost a copy of the coronary band. I then set the foot down on the ground and take a look from the front and decide if the hoof is displaced medially or laterally. At this point I begin making plans for my shoe.

When preparing the shoe, we need to keep in mind our plans for balancing the hoof. I try to fit the flared side of the foot very tight

It has been my experience that balance needs to be taken into account at every step in shoeing the horse, from trimming the ground surface to dressing the hoof wall and positioning the shoe. When feet come into balance, resetting becomes a breeze, just trim off the extra wall and drop your shoe right back on the foot and nails are easily driven to the proper height. n

Andrew is a farrier from Greenville, New York. His work is primarily with Morgan and Saddlebred horses. He is currently president of the Empire State Farrier's Association. He is an examiner for the American Farrier's Association certification program. He is also chairman of the AFA Insurance Committee and a candidate for President of the AFA in the 2002 election.

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THE TOOL CORNER

By Dave Farley



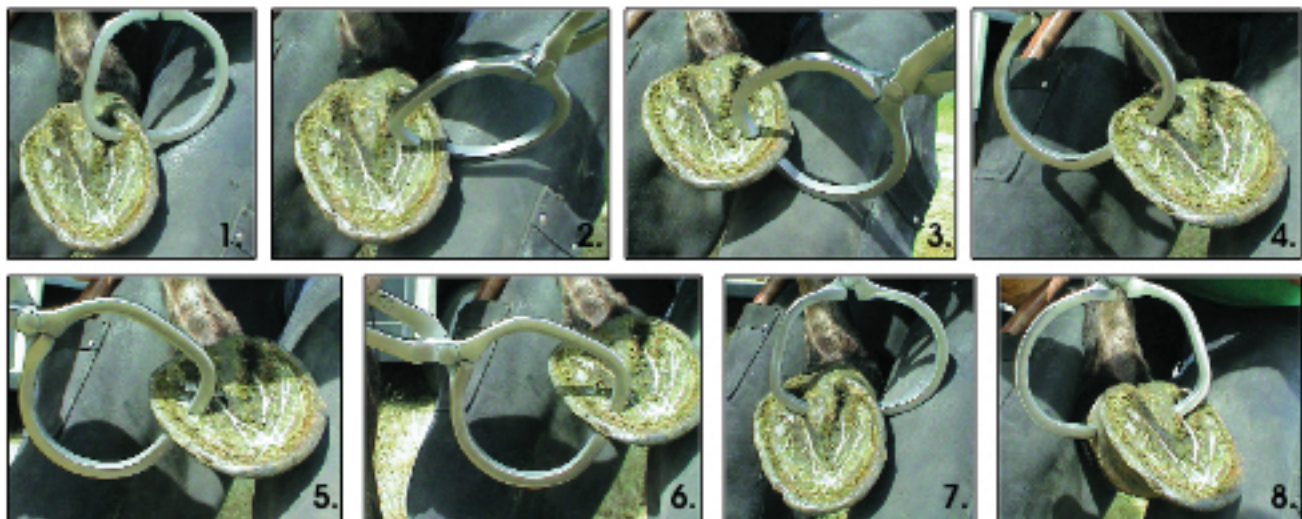
Most seasoned farriers will agree that a good hoof tester is a must in your shoeing tool collection. When used properly you can determine an area where a hoof has pain. The key thing here is to know how to use them correctly. Assuming that we have chosen the foot that is affected, the first thing to do is clean up the feet. I almost always start with the sound foot first. This allows me to get the feel of a normal squeeze for that horse. Before picking up the foot take a good look at the outside. Make sure the wall is free of mud, manure or hard dirt that will hinder the hoof tester from working properly. Is there any sign of hoof wall cracks or an inflamed coronary band? If not pick up the foot and clean the bottom.

It is very important to have a routine when using hoof testers. If you have never used a hoof tester before I think

you should practice first on a small ball. Tennis balls are great for this. A tennis ball will give a little just like a hoof. Squeeze the ball until you have the ability to apply the same pressure each time your hands close the handles. I still do this occasionally just so my hands are familiar with that feel. I start on the outside of the foot just behind the bar and squeeze. Move from that area forward about an inch squeezing with the same amount of pressure. Continue around the foot ending up just behind the bar on the inside of the foot. If you find an area that the horse reacts to don't stay in that area and continue to squeeze. Continue around the foot then start over to see if you get the same response in the same area. If you are sure this is the spot you have to determine if it is your job or the vet's to continue. If I feel it is a hot nail I pull the nail and let the caretaker of that horse know what to do. Even if I am sure what is causing the sensitivity, I suggest that the vet be called and informed of the problem. I do not start digging on the bottom of a hoof. This could be a very negative thing to do. If I do not get a reaction on the sole then I squeeze each side of the frog and across both heels. One point I would like for every

one to remember is that the side of the hoof tester you don't see is also working and applying pressure to the outside of the foot with every squeeze. For this reason I like to keep that side no higher than about one-third the height of the foot or where our nails should be. If you get higher than that (especially on a thin walled horse) the horse may show pain in the outside and you may mistake it for sole pain. As with every horse I feel if we observe the horse while being led from the stall, working and or just standing before we start to work on it we may be able to determine where the problem is. Look close, pay attention, and develop your eyes and ears. Practice using your hoof testers on a tennis ball before using them on a horse and you will be more successful finding the sore spot on a hoof.

In a future article we will talk about some of the likely causes of abscesses and soreness in the hoof capsule. As farriers, we should always recommend a vet be called when there is a lameness issue. Do what you can to help identify problems but don't set yourself up for problems should your analysis be incorrect. Particularly when the problems are internal. **n**



Bellota Opens New Plant

Bellota is well underway with major capital investments to improve the quality of their rasps, as well as ensuring that they continue to be competitively priced. For many years Bellota has been manufactured in Spain. Recently a decision was made to move the production of rasps and files to North America in order to bring the production closer to our market. This will also eliminate some of the costs that the North American market incurred, such as currency exchange and duty, keeping the prices at a very competitive level.

Bellota has built a state of the art facility near Veracruz, Mexico and installed brand new manufacturing equipment. You can see from the pictures that this ultra modern

facility is equipped for the demands of the market. While there are always transitional problems when any manufacturing operation is moved and new equipment put in place, FPD and Western Saddlery are working closely with the production team to get the rasps to the level of quality the market demands. Already we are seeing packaging improvements; stronger boxes with sleeves to protect the rasps during shipping and handling and a new color scheme to help identify the style rasp or file you have. In the meantime they stand behind their products, with a guarantee that you will be satisfied.

Bellota welcomes any suggestions or comments during this transitional phase and appreciates the patience the market has shown.

We fully expect Bellota to reach an industry leading level of quality in the coming months. Please email us at info@farrierproducts.com or phone 800-468-2879 if you want to contact us.

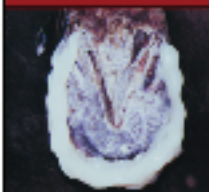


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NEW PRODUCTS

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The shoes are now available in the following styles.

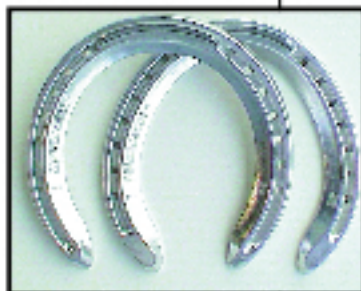
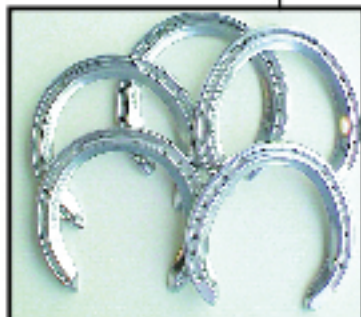
Queens - front & hind

Low toe - front only

Regular toe - front & hind

The shoes are packed in 10 pair boxes to avoid the waste and extra cost of the single set boxes.

Look for other styles in the future including Queens XT and Outer Rim.



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