

## Adjusting Shoe Placement

Radiograph of foot before shoeing indicates the shoe on this foot is set too far forward. There is not enough heel support and breakover will be hampered by the shoe being set so far forward. Point A is the center of rotation. A vertical line through this point locates the "bridge". A vertical line through the extensor process of the coffin bone locates the "dot". The lines below the radiograph indicate how far back I would set this shoe. Point B will be the new breakover point, where the rocker or rolled toe will leave the ground. The result will be that the distance from the bridge to the end of the shoe is equal to the distance from the bridge to the breakover point.

# Enhancing Breakover

BY EMIL CARRÉ, CJF

Discussion of the toe and breakover has to begin with an understanding of what it is we are talking about. What section of the hoof capsule constitutes the "toe". We have all heard and understand what constitutes a "toe and toe quarters" in a shoe. We understand a "full fitting, broad toe" and what that looks like in a shoe, but do we understand what that

means with respect to the inside structure of the foot.

During twelve years of working in a veterinary surgical practice, I have had the opportunity to review thousands of radiographs with our resident vets. What I have seen has influenced how I approach my work today. It has become clear to me that the external appearance of the foot and the internal reality are often not the same. The longer the hoof is on the ground, the more

stress that is placed on the coffin, navicular and pastern joints and the various tendons and ligaments that are a part of the lower limb. Relief of this stress is my primary goal in efforts to enhance breakover.

Dr. James Rooney's book, *The Lamé Horse* (1974) gives us food for thought. Rooney describes the relationship of the hoof wall to the coffin bone like this. "The hoof wall is connected to the coffin bone through an interlocking of the



insensitive laminae of the horn wall with the sensitive laminae attached to the coffin bone. "Therefore, the coffin bone hangs in laminar slings inside the hoof." What that means is that the wall is attached to the bone by an elastic structure. It can and will move in any number of directions away from the bone and center of articulation, the coffin joint. Therefore, if you use the hoof capsule itself as a blueprint for how to build, fit or modify a shoe, you in fact may not be hitting the mark. So now what?



## Breakover

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Dave Duckett gave us the “dot” and “bridge” concept in the 80’s. A diagram for this concept was given to me years ago by Dave. It is the best blueprint I know of and is my model for any horse I shoe. In the slide illustrated here the dot and bridge points are marked. The placement of the shoe on the foot doesn’t provide the support and breakover that I think would be optimum for this foot. The marks indicate where I would move the shoe and shows where the breakover point would be as



a result. One important aspect of the concept as I understand it is that the distance from the bridge to the end of the shoe and from the bridge to the

**Above left:** Ground view of rocker toe. **Above center:** Ground view of rolled toe. **Above right:** Ground view of rolled toe, set back. **Left:** Side view with shoe set back and toe dressed.

want to deep seat (bevel) the foot surface to avoid any sole pressure when you apply the shoe. After preparing the foot surface and rolling the toe, set the shoe back to where you want it and nail it on. Do not be afraid to slide the shoe back as the dorsal wall (toe) of a rotated horse is garbage anyway and the horse needs it out of the way.

No matter what method you use to enhance breakover you should keep the model in mind. Study the Duckett concept and develop an understanding of the location of the dot and bridge. Be sure of your nail placement when setting the shoe back. Also make sure you have relieved any sole pressure that could occur when setting a shoe back or rockering a toe.

As with everything you do with living tissue, use extreme caution. If you are not sure how to shoe a particular foot, check with someone in your area that you feel can help. ■

*Emil Carré is a full time farrier living in Oakdale, California. He spends a considerable amount of time providing therapeutic hoofcare services in a shop he maintains at the Pioneer Equine Veterinary Hospital in Oakdale. His “regular” shoeing clients are mainly involved with dressage, event and jumping horses. Emil is the President of the Western States Farriers Association and has also been an active member of the American Farriers Association for a number of years.*

breakover point should be equal.

What methods of enhancing breakover do I have at my disposal? The rocker toe is probably the most straight forward. I would use a rocker toe on a normal well shaped foot. You need good depth of sole to rocker the toe properly as you will generally want your rocker from first nail hole to first nail hole on your shoe.

If you are faced with a flat foot or a thin soled foot that needs help a rolled toe works well. I use this modification on many of the heel pain horses or long toe, low heel feet that come into the clinic.

For the horse with coffin bone rotation or hoof capsule deformity that you feel you can’t back the toe (rasp or take away the dorsal wall), a rolled toe set back on the foot will often work. You will almost always

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SHOE MODIFICATIONS

# The Rolled Toe and Rocker Toe

BY DAVE FARLEY

**T**wo common modifications are the rolled toe and the rocker toe. Both modifications are used to enhance breakover or change the movement of the horse. The feature story of this issue focuses on their uses for enhancing breakover.

The rolled toe and rocker toe should be fairly easy to make in one heat. Final touches to clean up edges can be done with a grinder or belt sander. ■

**1.** Position at anvil and hammer angle for rolled toe. **2.** Roll started, working shoe at edge of anvil. **3.** Finishing roll, still working shoe at edge of anvil. **4.** Starting rocker toe, working shoe at opposite edge of anvil. **5.** Notice angle of shoe as rocker is continued. **6.** Always provide sole relief on the rocker toe. **7.** Rolled toe to left, rocker toe on right.



WELDING ALUMINUM in the gas forge is technically a brazing process. The series of photos illustrates the steps in building an aluminum barshoe from a Kerckhaert long heel aluminum shoe.

Aluminum doesn't require a lot of heat to forge. Begin by placing your shoe in the forge and heating to a forging temperature. One method to check the temperature is to use the end of your hammer handle. If you wipe it across the shoe and it doesn't leave a mark then the shoe is probably too cool to forge. When it leaves a burn mark it is

# Welding Aluminum

ready to forge. You can use an 800 degree temp stick to help determine the proper heat level.

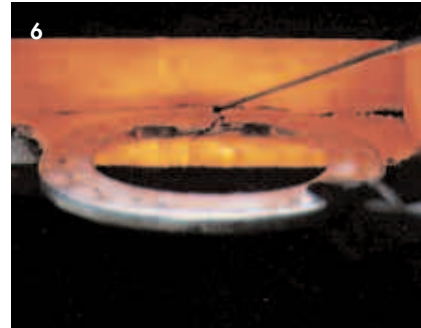
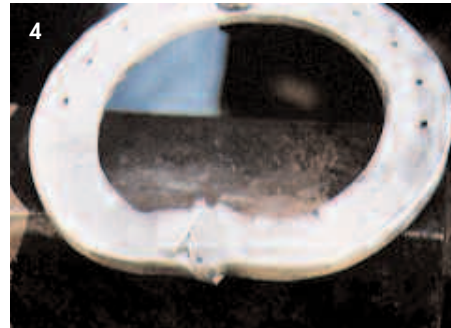
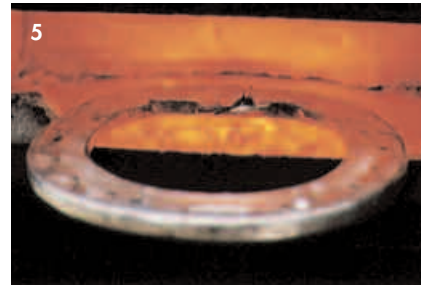
Start by turning the heels and scarfing the ends. Bring the heels of the shoe together so the ends overlap. Make sure the lap is as tight

as possible. You are now ready for the "welding" process. The Welco brand, 1/8" flux core aluminum brazing rod (melting temperature -1000 degrees) works well for this application.

Place a piece of the rod on the lap area of the shoe.

Then place the shoe in the forge. Do not place the lap area directly under the burner and be sure there is heat circulating under the shoe. You want the aluminum to heat evenly before the rod melts. Just before the small piece of rod begins to melt, stick the end of the longer rod in the forge to get it heated. As the piece melts, your longer rod can be used to "wipe" the area and it will also begin to melt. Pull the shoe from the forge and continue filling the lap area, on both sides and the edges until the gap is completely filled.

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1. Turn and scarf the ends.
2. Bring heels together.
3. Make sure lap is tight.
4. Place flux core rod in scarf area.
5. Place shoe in forge but not directly under burner.
6. When rod on shoe begins to melt, put longer rod in forge.
7. Pull shoe from forge, filling the lap with your rod.

*Photos courtesy Dave Farley.*





# Aluminum

CONTINUED FROM PAGE 4

Place the shoe on your anvil but do not strike it immediately. You need to let the shoe cool before finishing the forging of the area. You can check it with your hammer handle. When it leaves no mark you can then forge the area to the desired shape and finish with your wire brush. ■



8. Don't forge or hammer the shoe until it has cooled. Burn mark from handle indicates shoe is too hot at this stage



9. Once shoe has cooled some, you can brush and finish forging



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# New Products

**Bloom Forge Hammers**

BLOOM FORGE RECENTLY BEGAN PRODUCTION of a line of drop forged hammers. Forged from 4140 steel, these hammers have a nice balance in a variety of weights. The rounding hammers are available in 5 sizes- 1-1/2, 1-3/4, 2, 2-1/4 and 2-1/2 lbs. The cross pein hammers are available in 1-3/4 or 2 lb weights.

**Bellota Top Sharp Rasp**

BELLOTA HAS INTRODUCED the “Top Sharp” rasps that have a more aggressive file side and an improved tooth design on the rasp side. Response to the testing of the rasp has been positive and indicates the changes are noticeable improvements.



**Top:** Bloom Forge Hammers.  
**Right:** Bellota Top Sharp Rasp.

