

THE BRIDGE

By Craig Trnka, CJF

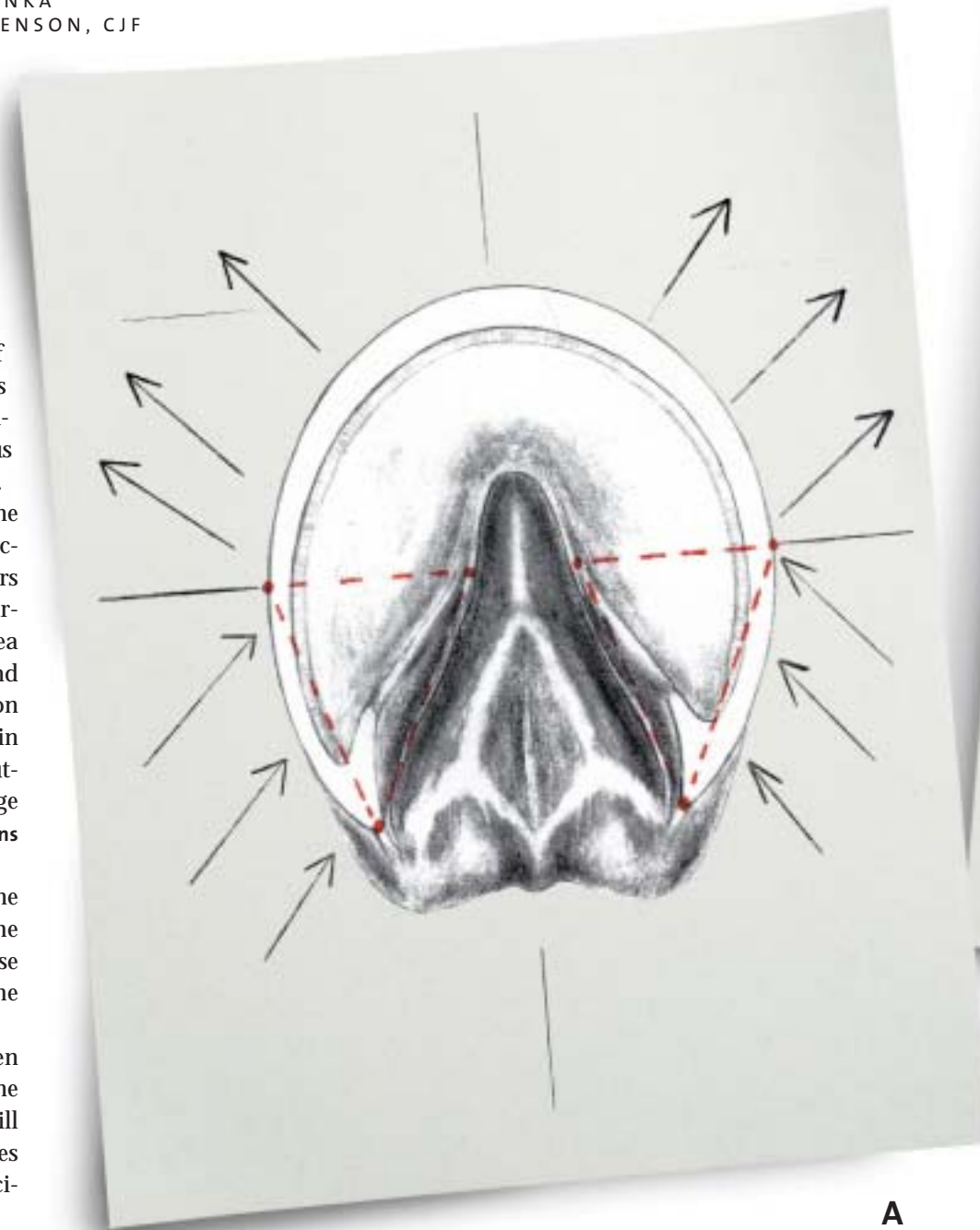
PHOTOGRAPHS BY CHRISTINE TRNKA
ILLUSTRATIONS BY STEVE STEPHENSON, CJF

In conversations with farriers, you hear things like, "...then I balance the horse" or "...when the foot is in balance." But "balance" is mostly a blanket term; it's often easy to see but not quite so easy to achieve. Instead of trying to do a blanket article that covers all the variables that help us achieve balance, I thought it would be easier to focus on just one of the variables: the Bridge.

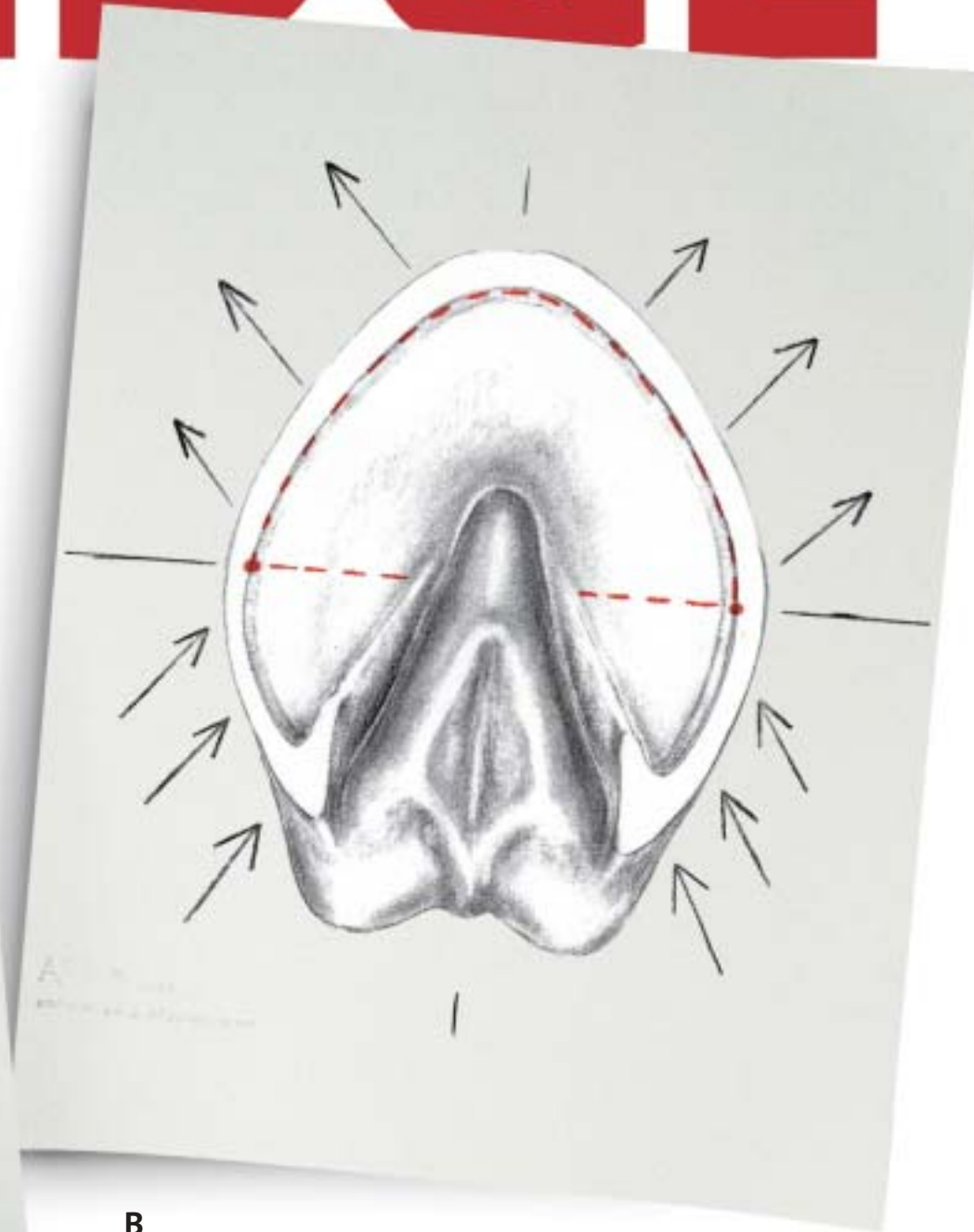
The Bridge of the foot is one of the most important aspects of form to function in the horse's foot. The Bridge occurs at the bend of the foot in the heel quarter area. In this radius, there is an area where the hoof wall angles inward and forward, and then makes the transition to angling outward. The hoof wall in front of the Bridge flares and pushes outward. The hoof wall behind the Bridge pushes inward and forward (illustrations A and B).

Two of the strongest structures in the world that have stood the test of time are an arch and a pyramid; both of these dimensions share a common line—the Bridge of the foot.

The Egyptian Pyramids have been around for thousands of years, and the arches in the Roman aqueducts are still standing in France today. These shapes have structural merit, and it's no coincidence that they exist in a horse's foot.



A



B

The Bridge is not static like Duckett's Dot, which is the point of articulation. Instead, the Bridge is dynamic, changing position and moving forward or backward according to pastern angle and conformation. The longer a foot becomes, the further forward the Bridge is in the foot. Long-footed horses such as Arabs and Saddlebreds have the Bridge way up in the toe and thus have more of the foot pushing forward and inward.

When trimming hoof wall in front of the Bridge, the foot angles outward, so removing hoof wall tightens the radius and brings the foot inward. Trimming hoof wall behind the Bridge has the opposite effect; the radius opens, and the weight-bearing surface increases.

On just about all the feet that I have dissected or studied, the sensitive lamina for the Bars is straight; therefore, if the heels are trimmed back until the Bars are reasonably straight, you have the heels about where the conformation dictates.

Every aspect of the hoof wall migrates forward as the foot grows... except one: the tip of the Bars. The Bars are stopped from migrating forward by the navicular bone. When the back of the hoof wall has excessive growth, the bars become bent and break down from excessive pressure.

For this article, then, we'll trim and shoe a basic front and hind, focusing on the Bridge even though there are many aspects involved. The front and hind shown here are from two different horses; both are used for roping, and I've been shoeing them for about five years. This philosophy towards trimming has been applied throughout that time period.

As I indicated earlier, the Bridge is not static; it's not even in the same place on different front feet on a single animal, but it is a critical part of the hoof capsule. There are no absolutes, but the Bridge is there regardless if it is addressed or not. While I didn't think of any of this stuff, I have addressed it and utilized the material to help my horses get one step closer to that magical word called "balance."



The red marker on this front shows where the medial and lateral flares begin and go well up into the toe. The dorsal aspect of the toe rarely has a flare that does not originate from one diagonal or the other.



The red arrow in the heel quarter area corresponds with the line on the bottom of the foot, and the arrow in the toe is where the flare gradually dissipates. The medial and lateral flares are read by some as "Toe Quarters"; I read them as distortion, which needs to be addressed, because they are directly responsible for moving the Bridge of the foot forward and backward.



Finding the apex of the frog and the buttress or origin of the foot (marked by the red marker) are some road signs to go by in trimming feet.



Trimming the hoof wall and sole to a comfortable length opens up the radius of the heel area behind the Bridge. I use the rasp to cut a nice radius in front of the Bridge that follows the inside edge of the white line. The red on the hoof wall indicates where the majority of flare was taken off.



Here you can see how the foot was shaped from the under side before placing it on the peg and blending in from the dorsal side. I call this cutting my shape into the foot so that I can see the shape from the top and follow it.



When the foot is completely dressed I marked where the foot makes the transition; this is the widest part of the foot. The marker is so that you can see the actual weight bearing in the heels (the photo sometimes makes the frog material look like weight bearing) and shows that the arch of the foot is the same on both sides of the Bridge. Where the Bars blend into the sole usually corresponds to the Bridge on a healthy foot. This also makes the third point in the pyramid.



The shoe should fit the foot. The foot should have a leading edge—no matter how blunt or how narrow. The arch coming out of the toe and into the Bridge should mirror the arch coming from the end of the heel to the Bridge. These are in no way absolutes but rather things to strive for.



Here is a view of how the flares were dressed and the fit in the heel and widest part of the foot. The lateral view shows the foot in relation to the pastern. When trimming feet in this manner, the pastern angle lines up with the hoof capsule.



The marker in the heel area on this hind foot shows the point of origin or buttress, the marker in the middle shows where the flare begins.



On a hind foot, the flare usually starts at the toe and goes back to the Bridge. Since this foot is being reset at about 6 weeks, the flare is minimal but needs to be addressed.



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The prepped foot with the marker showing where the majority of wall prep was done. The widest part of the foot or Bridge is further back on a hind foot than on a front foot, yet the arches going into the bridge will (ideally) mirror one another. The tip of the Bars line up with the widest part of the foot.

The outside of the foot is pretty much free of flares with little dressing. There is still evidence of the previous clip.

If the shoe is fit with a little width from the Bridge to the heel, you can open up the radius in the heel area. If the shoe is fit tight from the Bridge forward, you can—in turn—tighten up the radius in the toe area. The thickness of the shoe allows you to blend the radius in front of and behind the Bridge, ultimately making for a strong, healthy hoof capsule.



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The medial and lateral views of the hind foot show the fit of the shoe and the arches of the shoe coinciding with the arches of the foot. By paying attention to the proportions and arches on the bottom of the foot, you can see the hoof capsule line up with the pastern angle.

