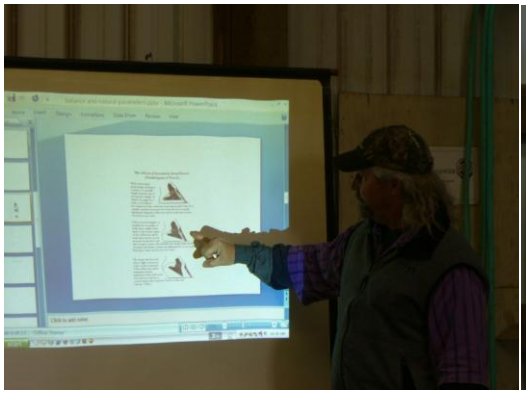
Randy Bickel : Barefoot Farrier

By Nancy Skakel – May 2009



Randy Bickel presented a persuasive case for leaving our horses unshod. Randy has studied with the nationally known proponent of barefoot trimming, Pete Ramey, and refers people to Ramey's web site (www.hoofrehab.com) for more information. Randy's very informative talk included many diagrams, photos, and anatomical samples to demonstrate the physiology underlying his approach to hoof trimming.

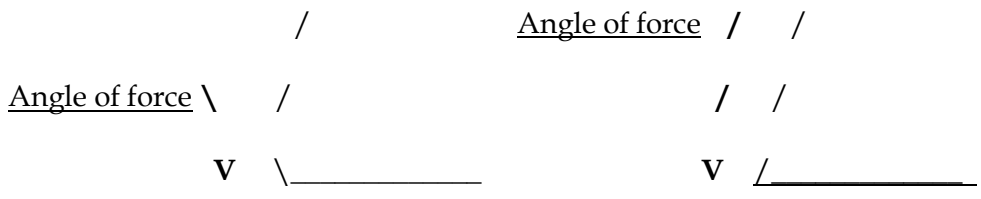
A line drawing of a horse showing parallel diagonal lines drawn through the point of the shoulder to the mid point of the wither, and the other drawn through the pastern to an area behind the point of the hip, showed the ideal relationships for correct hoof trimming. (Note: The "point of the hip" is not the actual location of the hip joint; it is rather the tuber coxae of the pelvis.) These angles stay the same no matter the age of the horse. This indicates the correct centered alignment of the bones in the pastern and hoof, allowing the interior foot structures to "float'. The ideal angle between the ground and the hairline viewed from the side of the hoof is 30˚. The hairline above the coronary band should be parallel to the ground when

viewed from the front. These angles will be different on each foot, according to that horse's particular conformation. Ideal conformation allows you to draw a line from the center of the knee, straight down through the center of the cannon, and to the center of the toe.

The joint spaces between the bones of the equine foot are approximately ⅛". This represents the range of tolerance that is affected by hoof trimming. An unlevel hoof base puts increased pressure on the boney joints, resulting in wear and tear injury. Wild horses tend to naturally maintain a rolled hoof wall and concave sole. Those that don't, develop foot problems and are naturally eliminated. The structure of the hoof is determined by environment, nutrition, and life style. Take a wild horse off the range, put it in a small paddock, change its feed, and it will develop the kinds of problems commonly seen in our domestic horses.

Looking at the sole of the hoof, you should see nice thick hoof walls and a rounded shape to the white line, which should be about ⅛" wide. At the point of the frog there should be a ¼" deep depression. This reflects a slight concavity to the sole that mirrors the concavity of the coffin bone. To achieve and maintain this shape, Randy uses what he calls the "mustang roll".

The hoof walls support 10% of the horse's weight. The rest is distributed over the frog, heels, and toe callus. According to Randy, "The callus builds a natural shoe into the foot." To achieve the proper leverage of vector forces, Randy bevels, or "rolls" the toe and hoof wall at a 45˚ angle.



(imagine a slight curve to the bottom of the hoof) (flat hoof bottom)

When the horse's weight is on that foot, the force flattens the sole. The bevel keeps the forces directed inward. A hoof that is flat when it is not weighted will naturally spread when it is weight bearing causing the forces to be directed outward. This will lead to flares and white line separation. (note: Randy pointed to the Shagya Obiwon, who Randy has trimmed for several years, as having an example of a nearly ideal hoof.)

Using a dried hoof Randy pointed out the false sole. This can be a thick surface of crusty, crumbly dead sole tissue. By contrast, healthy callus is white and powdery. Looking at the point of the frog, anything in excess of ¼" depression indicates that much false sole to be removed. Any areas of pink or red on the freshly trimmed sole indicate bruising from the interior of the hoof, due to inappropriate pressure and concussion.

Flares or folds on the hoof wall are due to increased pressure on the walls. In a healthy foot, the toe touches first. The hoof expands and stretches as the weight comes down, then

flexes again as the foot is raised in the stride. To accommodate this natural flexion, Randy trims horses with a slight concave depression in the side of the hoof wall. The arc of that curve should match the concavity of the sole. "The outside of the foot should match the inside of the foot, (the shape of the coffin bone)."

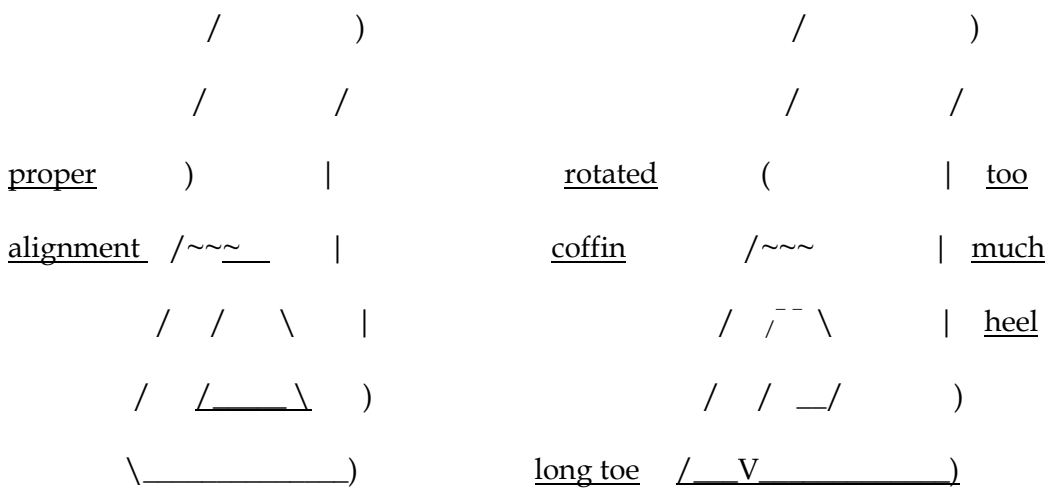
The bars are not weight bearing. Their function is to divert material away from the sensitive interior of the frog. The bars should be trimmed down to ⅛" below the surface of the frog. If the bars hit the ground before the frog, putting pressure on the interior blood vessels, they act as a dam, interfering with the proper pumping action and flow of blood. Pressure on the bars also stimulates the hoof to grow more sole in order to decrease the pressure on the bars.

The white line is the connection between the outer hoof wall and the sole. Randy uses his rasp (or his nippers if the hoof is overgrown) ⅛" from the white line to start his hoof wall roll. He says, "Always work from the bottom of the foot". He creates a slight depression on the side walls of the hoof, on the same arc as the concavity of the sole. Seen from the side with the foot raised, you can see this slight depression. When the foot is on the ground it spreads and the concavity is flattened out. Seen from the heels, the frog rises slightly above the sole of the hoof, which is slightly concave. Remember, you are working within a ⅛" tolerance in the healthy foot.

Rasping the hoof regularly, between every 4, 6, or 8 weeks depending on the individual, will maintain this shape. Conformational issues, such as toeing in or other problems, can be influenced up to the age of one year. After that, you must work with the individual's particular problems. By keeping the foot "collected" using the mustang roll, the forces will be evenly distributed inward, and will minimize concussive pressure problems.

Flares and other problems cannot be corrected in one trim. It takes a year to grow a new hoof. If you just rasp off a flare on the outer edge of the hoof, it signals the body to re-grow that area to re-enforce it; just as a tree in the wind will grow root buttresses to strengthen it. Flares should be trimmed out from the bottom of the hoof, not from the outside.

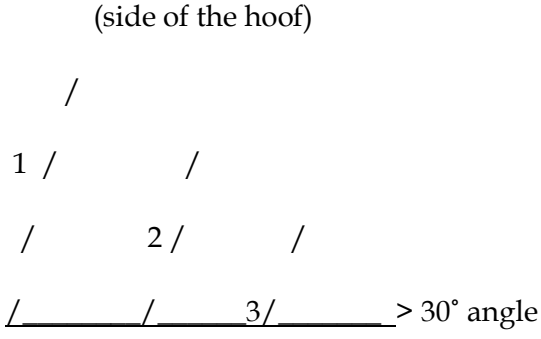
A horse will trip if his toes are too long and will stumble if the toes are too short. A simple way to determine if there is a problem is to look at the foot just above the coronary line. There should be a small depression just above the coronary line. If the line up the front of the hoof to the front of the pastern is straight it indicates the heels are too high. If there is a bump instead of a depression, the heels are 'way too high; this is a club foot.



Horseshoes and nails prevent the natural flexion of the foot. Nail holes also cause loss of natural hoof moisture, and can be tracts for pathogens to enter the foot. With regular barefoot trimming a horse that has been shod will take 7 months to a year to regain the natural shape and function of the foot.

Hoof Diagram

Points 1, 2, and 3 are close to the same distance apart and are, or should be, the same angle. There is no specific angle for any horse because they are all different and every foot on every horse is different. Each hoof should be trimmed using pastern and/or shoulder angles as a guide. To match all hooves on all horses will in most cases not work for the horse. Focus on each limb as an individual trimming project.



1. front profile of hoof wall
2. angle from point of shoulder to mid withers
3. angle through pastern to just behind point of hip