

The Natural Angle

A PUBLICATION OF PRACTICAL IDEAS AND SOLUTIONS FOR FARRIERS

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Basic Hoof Preparation

BY MITCH TAYLOR

The foundation of any shoeing job is the foot preparation. One statistic that all farriers should be aware of is that most chronic lameness is caused by poor or improper foot care. Look at it this way. The horse is stuck with the job you do until the next time he's shod. Unfortunately, if the work is hastily done and the feet are out of balance that's what the horse has to work with as a base of support.

There are three characteristics of the hoof capsule

that you can always count on.

1. It is constantly growing.
2. It is elastic and yields to loading.
3. It will change shape according to how it must bear weight.

By following some basic principles, you can significantly reduce the incidence of chronic lameness.

Develop a game plan. Know what you would like to do and how you are going to do it before you start. Don't just look at the feet from one point of view. Look at the legs and feet from the side, front, back and bot-

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Line A shows how far forward the heel has migrated. Line B near the widest point of frog is target for trimming.

A

B

The excessive growth of this foot gives an extreme but graphic view of what happens to the hoof balance as length increases.



Visualize a line from the face of the cannon bone to the heel area.



With half of foot trimmed you can see how much forward the foot has grown.



This view shows you just how much the length of toe and heel has affected the balance of the foot. When fully trimmed the hoof/pastern axis will be greatly improved.

Basic

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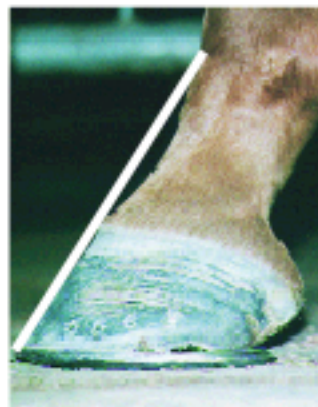
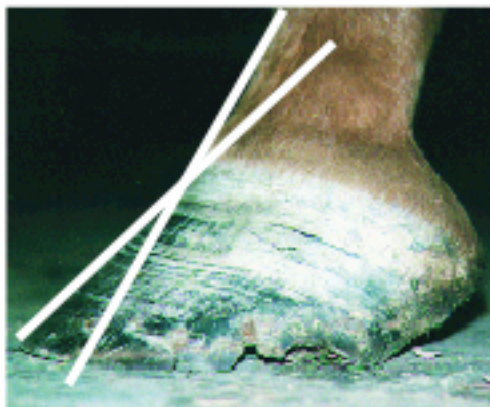
tom. Learn to read the hoof. It will give you a lot of information on its health and any stresses it is dealing with.

Begin with the length of the foot. Don't feel you have to take every bit of foot away. My general rule for the active horse is to remove as much foot as possible without compromising the strength and protection of the foot. This can become a little tricky when you are dealing with a poor quality foot. When in doubt, leave foot (wall and sole). If the foot is changing shape or showing signs of stress such as prolapsed bars or frogs, don't weaken them more by trimming for cosmetic purposes.

Look at the toe to heel ratio. Generally, the farther forward the heels land from the perpendicular axis of the center of the cannon bone the more stress they take. The foot will tell you how it is handling the load. Remember that as the foot grows it will migrate forward. In doing

Left - This foot shows the undesirable effects of a long toe and heel. Note the misalignment of the hoof/pastern axis.

Right - After trimming the ground surface and backing up the toe from the front you can see the positive results on the hoof/pastern axis.



so, the weight bearing surface is moved forward, creating an imbalance that makes the foot unable to bear weight properly. The heels often become underslung and the longer toe length requires more force to break over. When trimming to avoid this situation it is important to remove length of toe from the bottom and dress the toe back from the front. This will help restore a good hoof/pastern axis. The heels also need to be trimmed back as close as possible to the widest point of the frog. Be careful not to compromise the sensitive structures but remember that a long heel is a

weak heel.

Level the foot. Look at how the foot is growing and the wear on the shoe before you begin. Look at how the foot hits the ground before and after trimming. It is always desirable to have the foot land as flat as possible in order to distribute the shock evenly across the bottom of the foot and in the joint surfaces. Just as it is hard to determine if a shoe is level by viewing it from one angle, so it is when trying to sight a foot. In addition to the normal heel to toe view, look at the freshly trimmed foot from the side and toe to heel. You should realize that if the foot has been out of balance for some time it may be level when you put it down after trimming but not when you

come back to nail the shoe on. It is not unusual to have to level the foot again.

Look carefully at how the feet are changing from shoeing to shoeing. Look at the hoof from all angles. Pay close attention to the hoof/pastern axis, the condition of the heels and the length of the toe. As your eye develops you will be able to understand what the feet are telling you as you begin your hoof preparation. A good indicator for me in determining if the foot has reached a good equilibrium is when no reshaping of the shoes is necessary on a reset. ■

Mitch Taylor is the owner and director of the Kentucky Horseshoeing School in Mt. Eden, Kentucky. His program focuses on the anatomy and biomechanics of the equine limb as well as the mechanics of horseshoeing and forging. For information on the program call 502-738-5257 (e-mail: kyhorseshoe@aol.com).

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Using the Undercut

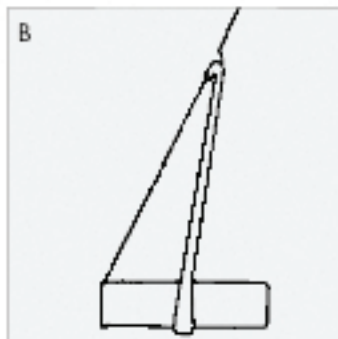
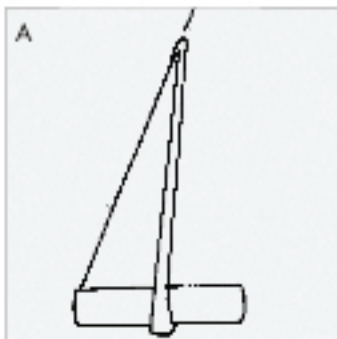
BY ROY BLOOM & DAVE FARLEY

The undercut, sometimes called a hoof gouge, can be used in place of the rasp when clinching. The photos give an excellent view of the steps involved. Like all new methods, the undercut may seem awkward the first few days of use.

I think the undercut gives me a stronger clinch with a smooth finish. The sketches illustrate the results of clinching with and without the undercut. In sketch A, you can see that after clinching, either with a clincher or a hammer, the nail is rasped or filed to eliminate burrs or jagged edges. This process takes material away

from the clinch, weakening it. In sketch B you have the nail that has been clinched after undercutting. The undercut provides a pocket to fold the clinch into. The end of the clinch is also resting within the pocket, lessening the chance that it will loosen. Because it is not protruding from the hoof wall it does not need to be filed as aggressively. A sanding block may be all that's necessary to finish.

I also think that the horizontal mark or scratch that is often caused by the rasp is weakening the wall, a bit like the process of cutting glass by scratching the surface. The undercut minimizes the area disturbed in the clinching process. The undercut requires very little maintenance. If it feels like it is becoming a bit dull just use a small flat file to touch it up. A couple strokes following the angle of the end of the tool is all you need. You need to be sure your undercut has the angles as shown in the photos. ■



Shoe Modification: Lateral Support

BY DAVE FARLEY

Shoe modification shown here is used to support the outside heel if it is run under and forward. This lateral extension is a simple one heat modification. You start by "scotching" the foot surface of the outside branch from just behind the last nail hole to the heel. Rather than fitting the outside of the shoe exactly to the perimeter of the wall I imagine a line from the coronary band straight down that contacts the outside edge of the extension. Fitting the shoe to this point using the extension will allow the hoof capsule to expand and move back to a stronger position. ■



Above Left - Side view shows "scotched" area. Heels are slightly underrun. **Left** - View from behind allows you to see positioning of extension in line with coronary band. **Above right** - Ground surface view shows additional width of branch after making modification. **Right** - This foot surface view of the shoe shows the bevel or taper of the extension. The foot is fit to the beveled edge.

1. After cutting the end of the nail fairly close to the wall, strike the undercut straight into the wall. You should be approximately 3/16" under the nail on the first hit. 2. Tilt the undercut (about a 45 degree angle) on the second hit. 3. The last blow at a high angle should finish the removal of the pocket. 4. Use the clincher with a very light squeeze to start the clinch over. 5. Now push the clinch back into the pocket produced by the undercut. Do not use a severe pulling motion, just a squeeze and push. 6. Place your clinch block on the nail head and set the nail with the heel edge of your hammer. 7. A light flat blow with the hammer completes the steps of clinching. You're now ready to sand or lightly file finish the foot.



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Save Your Back

WORK STYLE, EXERCISE CAN HELP AVOID BACK STRAIN

Back strain among farriers is often considered the price one pays for doing something one loves. Years spent curled into a human question mark all too frequently take their toll in the form of herniated disks, strained back muscles and - ultimately and unfortunately - pain.

There is some good news in this scenario, however. With proper technique and some simple ex-

ercises, farriers can reduce their risk of back injury and lessen the probability of wear and tear over time.

"Shoeing horses and back strain do not necessarily have to go hand-in-hand," says Tim Parnell, a physical therapist and athletic trainer who is a managing partner in Allegany Sports Medicine, a division of Rehab Solutions, which provides a myriad of rehabilitation services in Maryland. "Learning proper body

mechanics coupled with stretching and aerobic exercise can mean the difference between ongoing back discomfort and maintaining back health."

According to Parnell, the first step in relieving the back pressure often associated with shoeing horses is awareness of one's body. Called "body mechanics," proper positioning during the shoeing process can often prevent

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Back

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strain in the first place.

The basic rules governing body mechanics include bending at the hips and the knees in order to maintain the natural arch of the back (i.e., no hunching - keep that back straight), and contracting the abdominal muscles while bending to lend the back support.

"Initially, when you begin to use proper body mechanics you literally have to think about how you're physically approaching your work," Parnell states. "Eventually, it becomes second nature."

In addition to the basic

rules governing bending and lifting, periodically changing one's position during the shoeing process can also help. Using a foot stand whenever possible can also help take the strain off the back. Again, even using these alternatives the farrier must be ever aware of the natural arch of the back - bending from the hips and knees continues to be important, Parnell says.

While body mechanics is important, simply following proper procedure while working is not enough to keep one healthy. In addition to body mechanics, farriers should perform simple stretching and strengthening exercises each day and should perform at least 20 minutes of aerobic activity three times each week.

In addition to these simple exercises, Parnell recommends that some sort of aerobic activity - walking, biking, etc. - be done three times a week for

at least 20 minutes.

Before beginning any exercise program, Parnell cautions farriers to consult a physician. ■

STRETCHES

1. **Hamstring stretch:** Lie on your back and lift one leg from the floor, supporting the thigh behind the knee. Slowly straighten the leg until a stretch is felt in the back of the thigh. Hold for 15 seconds. Do each leg 10 times.
2. **Knee to chest stretch:** Lie on your back and pull one knee to the chest until a stretch is felt in the lower back and buttocks. Hold 15 seconds. Repeat 10 times with each leg.
3. **Press Up:** Lie on your stomach. Keeping your hips on the floor, push your upper body off the floor while keeping your lower back and buttocks relaxed. Hold 15 seconds. Repeat 10 times.

STRENGTHENING EXERCISES

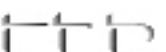
1. **Abdominal crunches:** Lie on the floor. Fold arms across chest and tilt pelvis into floor to flatten back. Raise head and shoulders from floor, hold 15 seconds. Repeat 10 times.
2. **Bridging:** Lie on the floor. Slowly raise buttocks from the floor, keeping stomach tight. Hold 15 seconds, repeat 10 times.
3. **Quadrupeds:** Kneel on floor on all fours. Tighten stomach and simultaneously raise leg and opposite arm. Hold five seconds and slowly return to starting position. Repeat 10 times.
4. **Wall slides:** Leaning on wall, slowly lower buttocks toward floor until thighs are parallel to the floor. Hold 10 seconds, repeat 10 times.
5. **Toe raises:** Standing, rise on the balls of your feet, hold 15 seconds. Repeat 10 times.

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