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Illustrated Hoof Care for Horses

NOTE: The author is Melvin Bradley, Department of Animal Husbandry, University of Missouri. This series of bulletins is reprinted for Michigan use through courtesy of the University of Missouri—Richard Dunn, Extension Specialist in Animal Husbandry, Michigan State University.

Figure 1. Farrier tools include, L-R, rasp, pincher, hoof nipper, nail clincher, hammer, punch, clinch bar, knife, clinch cutter, and hoof pick.

The old adage "no foot, no horse" is as true as ever. Lameness of feet and legs is the cause of most permanent incapacitations of horses. The foot care your horse receives can hasten or delay permanent unsoundnesses.

Every horse owner needs a few tools. The hoof pick is used to clean filth from hoof crevices at home or to remove rocks on the trail. Nippers are used to remove extra hoof wall and the rasp is for leveling the foot. A clinch cutter and pincher or puller are used to remove shoes that have been worn and are ready to take off. A hammer is also one of the basic tools.

When a shoe is lost, it is important to promptly cut the hoof wall level with the sole to prevent it from breaking above this point while awaiting the farrier. Remove the opposite shoe and lower the hoof wall to equal the length of the other hoof to balance the gait of your horse.

Foot care should begin early by teaching foals to allow handling and cleaning of their feet. If this practice is followed it will save both the young horse and the farrier considerable trouble later when it's time to trim and shoe. Handling a foal or young horse's feet may be somewhat tricky at the start, but by following proper procedures youngsters will soon become very easy to handle and trim.

Picking Up Feet

Pick up the front foot by rubbing the leg up high and by gently working down to the ankle. Brace your free hand against his shoulder to "push off" with in case you need to. If the horse fails to lift his foot, gentle pressure on the tendon behind the cannon bone with thumb and forefinger will usually persuade the animal to cooperate. Once the foot is raised, it is important to allow the horse to hold it in a position which is comfortable to him.

Maintain a relaxed and comfortable position for both you and the horse when holding the leg between your knees. If he is uncomfortable he will not stand well. For this reason, shoeing young horses for the first time in fly season can be a challenge unless effective fly repellents are used.

Picking up the hind foot of foals and young horses is dangerous unless done correctly. Pick up the left foot first since most horses are accustomed to being handled from this side. Approach the horse from the front and place your left hand on his hip, then run your right hand down the back of his leg just above the ankle. If he resists, move more slowly.

Now gently push the horse away from you with your left hand while pulling his foot toward you with your right hand. Next, step to the rear of the horse with your inside foot, thus pulling the leg straight behind him, and at the same time drawing the hock up under your left arm. The same procedure is followed for the right hind foot except that

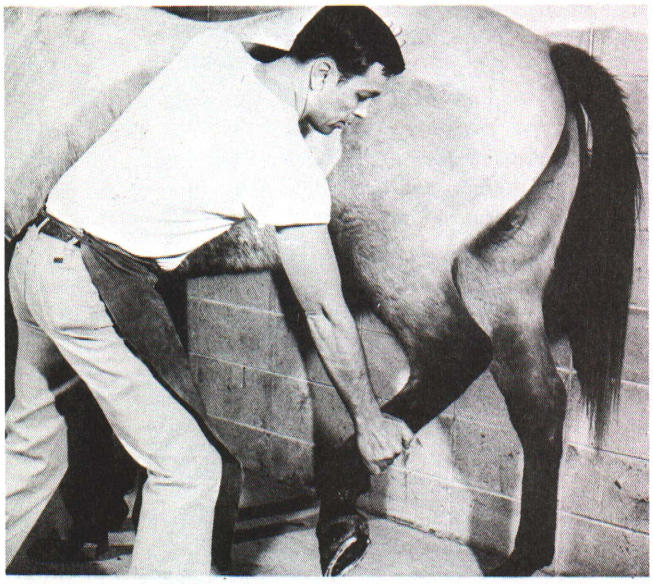

Figure 2. Pick up left hind leg while bracing left hand against the horse's hip. Reverse hand positions to pick up the right hind leg.

you work lefthanded. The foot, bottom up, can now be rested comfortably on your knees for trimming or shoeing.

A satisfactory trimming job can be accomplished with a hoof knife, a rasp, and a nipper. Removing shoes and cold shoeing, however, require additional tools—including shoe pullers, clinchers, shoeing hammer, punch, clinching block, clinch cutters, hoof pick, anvil, shop hammer, and, of course, shoes and nails. It is also very important to always use an apron when trimming or shoeing. If a shoeing apron is not available, a pair of heavy chaps will do nicely.

Trimming should begin by cleaning the hoof with the hoof pick. Make sure to draw the pick from the heel toward the toe. This method does a good job of cleaning and is safer for the horse.

Don't clean from the toe toward the heel. If the horse jerks his foot and the hoof pick from your hand, he can experience severe injury when he steps on it in this position.

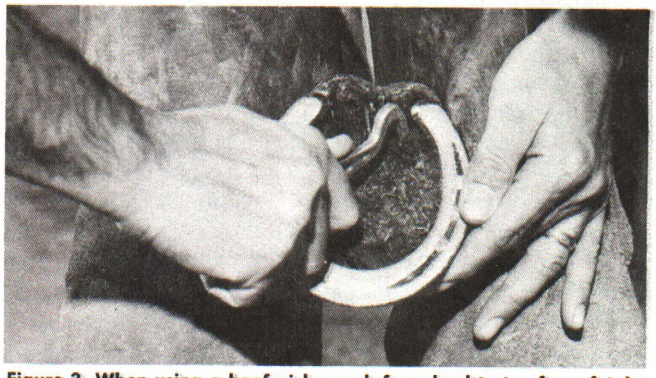

Figure 3. When using a hoof pick, work from heel to toe for safety's sake.

Removing Old Shoes

Clinches of old nails must be cut or straightened to remove the shoe. If the shoe is pulled without this operation, it will not only be more difficult to remove, but the walls of the hoof may be injured. Clinches may be cut with the clinch cutter or rasped off. This extra "pull off" rasp is an old rasp no longer used to level the foot.

Place the blade edge of the clinch cutter under the clinch and straighten it for pulling by light hammer blows. If you have difficulty getting it started, lean the top out and use the back corner nearest your hand.

Most commercial farriers rasp the clinches off with the fine side of their rasp, because it is faster than using a clinch cutter. Use care to minimize damage to the hoof wall, because it has a protective coating to conserve moisture in the hoof. Handle the rasp to avoid damaging the coronary band at the top of the hoof. If the hoof wall is rasped very far above the clinches, a change in technique is indicated.

Place the shoe pullers under the shoe at the heel and push down toward the toe to remove the shoe. This manipulation is repeated on the opposite heel, always working toward the toe, until the shoe is completely free. Don't pry sidewise because of danger of sprains to your horse's tendons.

If you find the above method difficult, complete the first step and then drive the shoe back down on the hoof exposing the nail heads. Nails then can be pulled out one at a time.

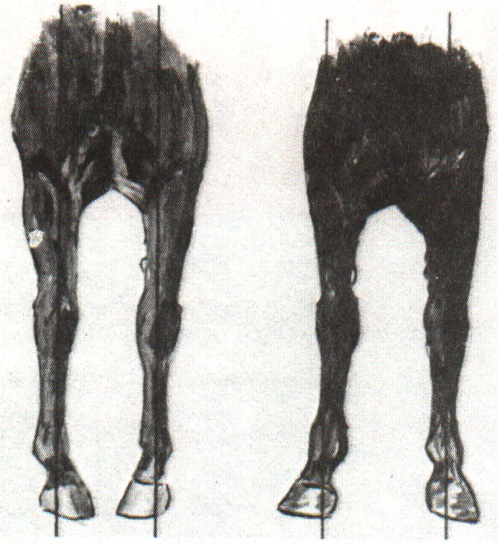

Figure 4. Feet of a splay-footed horse, right, should be trimmed shorter on the outside wall than on the inside wall to distribute weight more equally on the hoof. Pigeontoed feet should be trimmed just opposite.

Trimming Feet

Consider the conformation of your horse when trimming his feet. A splayfooted horse (feet turned out) bears more weight on the inside wall and heel than on the outside. Wear is greatest, both shod and barefoot, where weight is borne. Your objective in corrective trimming is to remove more of the outside wall and heel than on the inside. This will shift his weight near the center of his feet.

Trim a pigeontoed horse exactly the opposite. Bone structure of adult horses can't be changed much, but their action can be improved. Corrective trimming of young horses every six weeks or two months up to two years of age will substantially improve bone structure.

Begin trimming the foot by removing the loose, shelly part of the bars, taking extreme care not to trim the solid part of these structures, since they are essential to the support of the hoof. Next, trim each side of the frog just enough to open the seams on each side at the heel of the hoof. This will help keep filth from collecting predisposing to thrush. *Don't lower the frog.* This structure should touch the ground when the horse stands on the trimmed foot.

After the frog and bars have been trimmed, use your hoof knife to trim out the soft shelly part of the sole in order to determine how much of the hoof wall should be trimmed away. Observe the juncture of the sole and wall at the toe. Decide how much will need to come off the toe, with a lesser amount at the heels.

Now start your nipper at the heel of the hoof at a depth which is level with the sole. There is a tendency for beginners to get too deep at the heels and not deep enough at the toe. (If you prefer, you can begin at the toe and trim one side of the hoof at a time.)

Proceed around the hoof until you finish at the opposite heel. The hoof wall should not be trimmed below the level of the sole. Now the hoof should appear relatively level and both heels should be the same height.

A relatively level hoof that requires a minimum of rasping is not easy for beginners to accomplish. There is a ten-

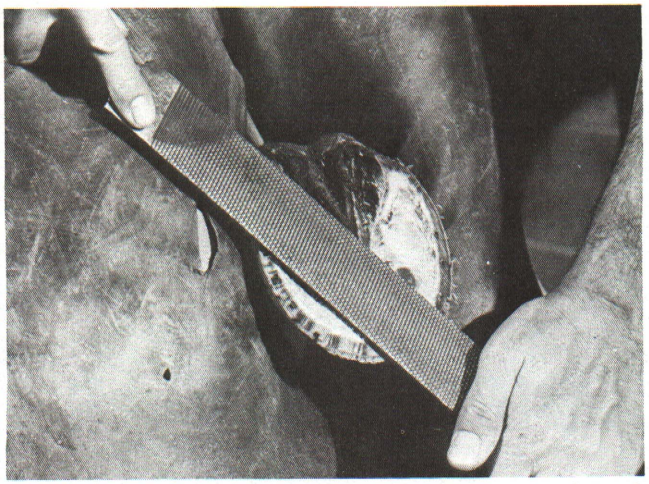

Figure 5. When leveling the foot with a rasp, use the rasp with equal pressure on the heel and toe.

dency not to adequately lower the sole which serves as a guide for the nippers. This results in unevenness or not removing enough of the wall. Such a condition is not serious, but requires unnecessary rasping.

Use the rasp to finish trimming. Draw the rasp from the heel toward the toe, always taking care to keep the pressure equal over the entire foot.

Move the rasp around over the sides and toe, being careful not to get too deep in one spot. Use a sharp rasp for ease and speed in trimming.

The rasp may be reversed and drawn from the toe toward the heel when trimming the inside of the hoof. Take special care not to apply too much pressure on the rasp at the heel. If the heels are lowered too much, the hoof will not have the correct angle.

Check Foot Levelness

When you think the foot is level, check levelness by sighting down the hoof from heel to toe. You should drop the hoof down so it rests in a normal position with the hoof hanging free. Holding the hoof itself may result in its being slightly twisted, and it may therefore appear level when it is not. Be sure neither heel is high and that there are no low spots around the wall.

The hoof should have an angle of 48 to 55 degrees, depending on the conformation of the particular horse (slope of shoulder and length and slope of pastern), when trimming is completed. If horses tend to overreach, trim the hind feet 2 or 3 degrees less than the front, i.e., if the front feet are 53 degrees, the hind feet should be 50. This will permit the front feet to break over faster, and prevent overreaching.

It is very important, however, that both front and both hind feet have the same angle. This can be checked by using a hoof level. A hoof level is not absolutely necessary for amateur trimming and/or shoeing, but helps develop skills and improves accuracy.

If the hoof is to be trimmed and not shod, all that remains is to round the edges of the hoof wall and lower the sole. Round the edges of the wall with the fine side of the rasp. Remove the sharp edges to about one-fourth the thickness of the wall. This reduces the chance of having pieces of the wall broken out.

If the hoof is to be shod, however, the former step is omitted.

Lowering the sole is very important because it allows the horse's weight to be distributed on the insensitive hoof wall rather than on the sole. Since the sensitive part of the foot lies directly underneath the sole, lameness may result from failure to perform this operation. Take the curved edge of a sharp hoof-trimming knife and lower the sole below the wall. Don't ride the horse on rocks until the wall has had time to grow out, or until he is shod.

Shaping The Shoe

For the beginner, one of the most difficult parts of shoeing is shaping the shoe. The first rule to remember is to *shape the shoe to fit the foot.* Shaping the shoe may be made easier by marking the heels of the foot and making a paper tracing from heel to heel.

Use a white grease pencil if the hoof is dark, and mark the back of the heel where the heel of the shoe stops on each side of the foot.

Trace the outline of the foot on a stiff cardboard or tablet attached to a clipboard. It is a good idea to keep tracings of your horse's trimmed hooves on hand for purchasing shoes, as some foreign shoes are not numbered conventionally for size.

For example, a well shaped front foot is uniformly round and wide at both heel and toe. Since horseshoes seldom come in this shape, substantial shaping will be necessary. Shaping is made easier by using the pattern. Remember to have the ground surface of the shoe down when using the pattern.

Most new shoes are too narrow for the front feet and must be spread. Place the shoe over the horn of your anvil and strike the toe. Try it on the pattern and get the correct width of toe and branches or sides before bending the heels in.

Turn the heels in by raising one heel at a time up through the hole in your anvil to the point where the bend is needed. Drive it down with your hammer, then test it with the pattern.

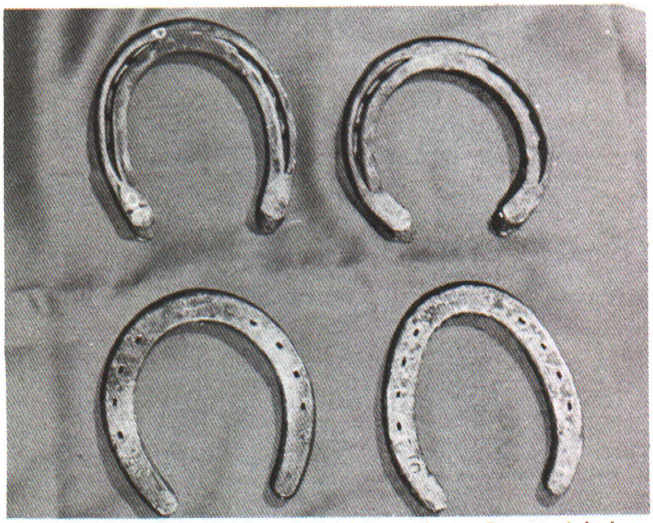

Figure 6. Top are unfitted and fitted front shoes. One on right has been rounded by spreading the toe and turning in the heels to fit a pattern. The lower right shoe has been narrowed at the toe, spread at the branches, and turned in at the heels to fit a hind foot. Its mate has not been shaped.

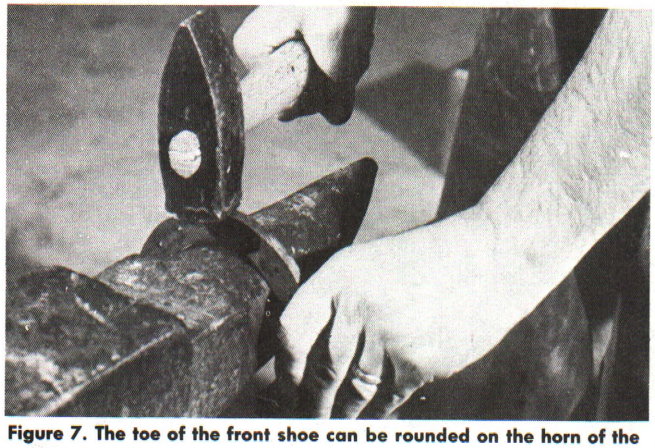

Figure 7. The toe of the front shoe can be rounded on the horn of the anvil.

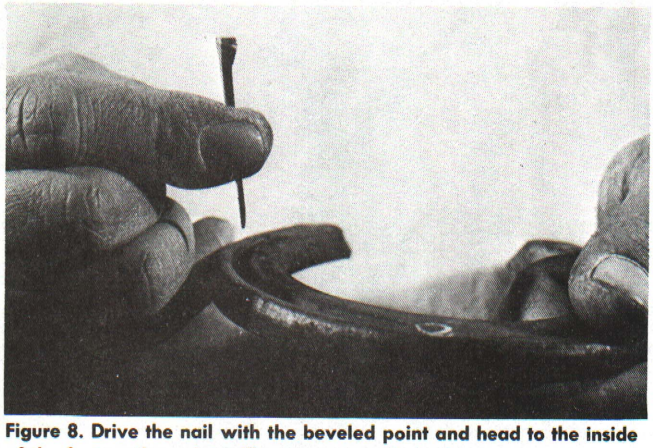

Figure 8. Drive the nail with the beveled point and head to the inside of the foot so the point will come out as desired.

When the shoe has been fitted to the foot, it must be leveled. Use the face of the anvil to get it level. This is an easy task for an experienced farrier, but can be demanding on the patience of the beginner. Don't hurry, get it right.

Check the levelness on a flat surface. The face of some anvils will do. If the shoe will rock, it has a high spot in it.

The ultimate test is a flat board initiated by inspecting officers of the U.S. Cavalry. You will have to beat down or rasp off raised points caused from hammer blows before passing this test. With a little practice a shoe can be made perfectly level by using a board to check for accuracy. Perfect levelness is desirable for both shoe and foot for equal weight distribution. High spots cause a shoe to rock and work loose as well as placing undue strain on that part of the hoof.

Although there are exceptions, most horses' hind feet are somewhat narrow and pointed at the toe. In order to shape a shoe which is initially round at the toe, flatten each side of the shoe on the back of the anvil. Hit the shoe near the toe on each side and try for size on the pattern.

Upon flattening the shoe in this manner, the shoe will be widened considerably at the heel and must therefore be drawn together.

The heels can then be turned in as previously described and the operation is complete.

Nail holes are too small in most manufactured shoes to accommodate the nail. Try a No. 5 city head nail for size into shoes size one and under.

Punch holes with a special punch until the nail head protrudes about one-sixteenth inch. If the nailhead goes flush into the shoe it cannot be tightened. If it does not go deep enough, it will wear off and the shoe will loosen.

Turn the shoe over and file the burs off with the fine side of your rasp. You may have sprung the shoe out of level if you hammered hard on it. Try it back on the board for levelness.

Now the shoe should fit the foot nicely with no gaps between hoof and shoe. Check for high spots under the shoe by trying to rock it from front to rear and side to side. If it will rock, rasp off the high spot and lower the sole at that point. The heel of the shoe should extend to the end of the heel of the front hoof but not beyond. (The hind shoe is an exception in that ⅜ inch of the shoe may extend beyond the heel of the hoof.)

Nailing The Shoe On

Now you are ready to nail the shoe on. First, however, it is important to know something about the area of the hoof into which the nails are to be driven. The while line on the bottom of the hoof marks the outer edge of the junction between the sensitive part of the hoof and the horny hoof. Thus, any nail driven inside this line will cause pain to the horse and will result in lameness. It is therefore important to drive all nails along or just outside this line. If nails are driven very far outside the white line, they will split the hoof out and the shoe will come off prematurely.

Horseshoe nails are beveled on one side, both top and bottom, and are straight on the other side. The beveled side is always on the inside or nearest the center of the foot. This allows the point of the nail to drift toward the outside of the hoof wall when driven.

Most inexperienced people are reluctant to drive a nail. They fear "quicking," or driving the nail into sensitive tissues. This is almost impossible unless driving inside the white line or unless the nail is turned to drift inward. Driving high in the wall does not "quick" the horse.

When preparing to nail on the shoe, it is important to position it so that the toe is fitted flush with the toe of the hoof. Position the shoe carefully and recheck for levelness. *Don't* set the shoe back and dub off the toe of the foot.

Now you are ready to drive the first nail. Some farriers

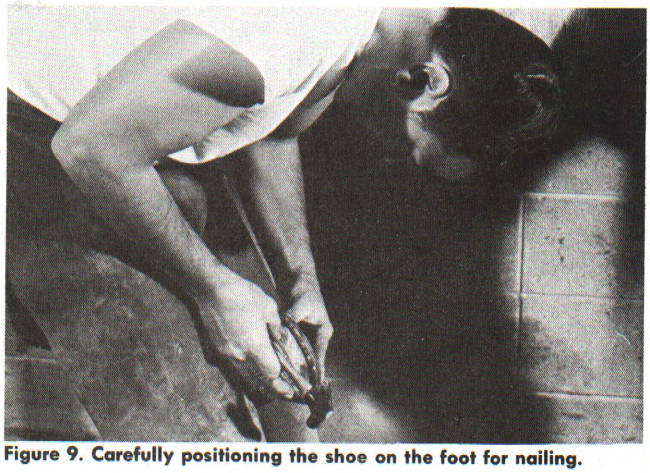

Figure 9. Carefully positioning the shoe on the foot for nailing.

prefer to drive a toe nail first because this allows easier positioning of the shoe. If the heel nail is driven first, however, the shoe will move less and will be more stable after driving one nail. Do whichever is easier for you, but the two heel nails and two toe nails should be the first four nails driven. Nails should be at least an inch deep before they come out.

Once through the hoof wall, each nail should immediately be bent over with the claws of the hammer and twisted off flush with the hoof wall. Always use an apron or chaps when driving nails, even if the horse is completely gentle. There are conditions under which the most gentle of horses will react. Don't risk it!

Push the nail to the bottom between the claws of your hammer for twisting off. If the previous nail end did not dislodge, you will not get a satisfactory job. Get the hammer against the foot for a short clinch on the nail.

After all nails are driven, they must be set by placing a clinching bar or nipper under the nail stub and striking the head of the nail. This tightens the shoe on the hoof and locks the nail head in the shoe. Excessive hammering will pull the clinches too far down to be rasped under. Many professional shoers use nippers for clinching as a matter of expediency.

Rasp off the burs of splintered hoof wall under each nail with the fine edge of the rasp next to the nail and the fine side next to the hoof. Smooth the twisted ends of the nails on top with the flat, fine side of your rasp before clinching.

Although clinching can be completed with the hammer and clinching bar, it is much more easily accomplished by using clinchers. This tool is placed over the nail and squeezed together, thus clinching the nail down. Take care to place the lower jaw of the clinchers over the nail head to prevent pushing the nail out of the hoof.

Figure 10. Horseshoeing goal is a flat shoe fitted well around the edge of a leveled hoof with evenly spaced nails.

The goal is evenly spaced nails of adequate height and a shoe fitted "full"—that is, out to the edge of the hoof, and no gaps or "daylight" between hoof and shoe. If you find a space under the shoe a knife blade can enter, you have a poor job.

After all nails have been clinched you are ready to dress off excess hoof which may protrude over the shoe. There should be very little, if any, of this. Don't rasp above the clinched nail. To do so is injurious to the hoof wall and may result in drying out or cracking of the hoof.

Hoof Care

Many horsemen apply a hoof dressing following shoeing, and some even apply it every day or so. This practice is very easily overdone and may reduce both the strength and pliability of the hoof. If the hoof becomes excessively hard, a small amount of lanolin (wool fat) may be applied to the coronet and the bulbs of the heel.

Additional moisture can be applied by packing the bottom of the hoof with a special type of mud designed for this purpose. One of the simplest and easiest ways to keep a horse's hooves in good condition is to keep the area muddy where the horse goes to drink. This will usually be sufficient moisture to prevent dry cracking, cracked heels, and other problems related to dry hooves.

The rate of hoof growth may vary with nutrition, climate, and with individual horses. It is, however, usually a good rule of thumb that a horse should be reshod or trimmed every four to six weeks. Failure to keep the horse properly trimmed or shod may result in several hoof abnormalities, all of which will eventually lead to lameness.

Questions For You and Farrier

Your farrier will ponder these questions about you:

1. Was he bruised from head to foot by an old spoiled horse while you stroked the horse's neck, proclaiming he wouldn't hurt a fly?
2. Did you tip or offer to pay more when he committed extra time and patience to a young horse being shod for the first time?
3. Did you call him out to shoe three horses, then decide to shoe only one when he got there?
4. Did he have to help chase the horse all over the farm to catch him before shoeing?
5. Did you pay him promptly and in full?

Ask these questions about your horseshoeing job:

1. Was the shoe shaped to fit the foot?
2. Were the foot and shoe both leveled?
3. Was the shoe set fully forward, foot not dubbed off?
4. Were the frog and bars "opened up" but not pared away?
5. Was the experience satisfactory for the horse or were his ribs bruised from blows of the rasp?

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