



# SHOEING THE AMERICAN RODEO HORSE

A thesis submitted to the Worshipful Company of Farriers  
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By Chris Gregory MS, CJF, AWCF  
327 SW 1st Lane  
Lamar, Missouri 64759  
United States of America

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### INTRODUCTION

This paper is being presented in order to explore and explain some of the ways that I shoe the majority of the horses in my care that are used for rodeo. Special attention will be given to both traction (grip), and balance. It is beyond the scope of this paper to discuss many of the lameness problems associated with rodeo at any great length.

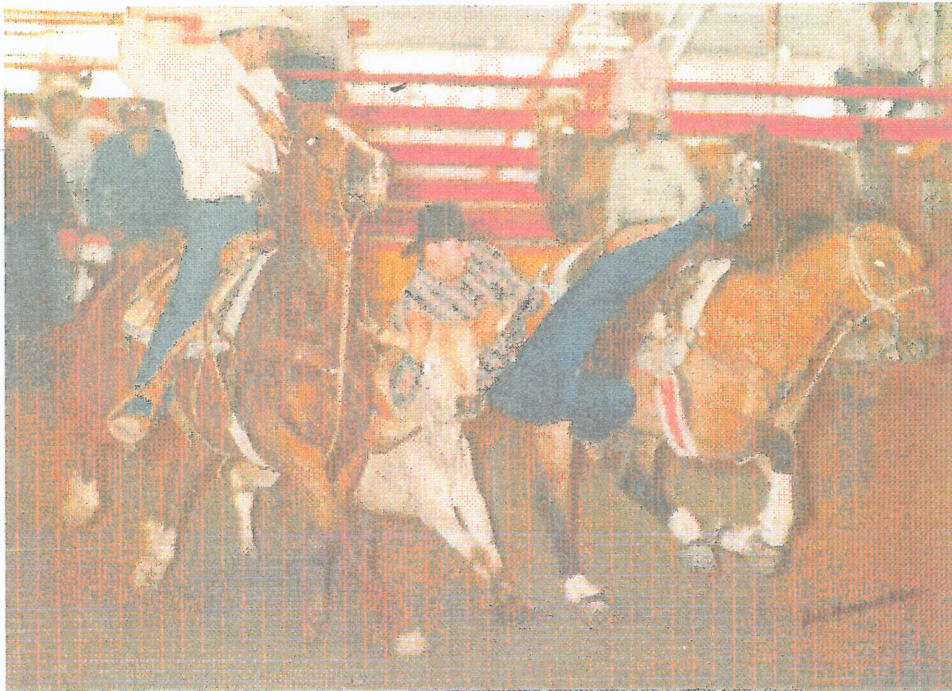
The rodeo horse is perhaps one of the most athletic of all horses. We demand from these horses quick starts, hard stops, sharp turns, and often times with the additional baggage of a cow on a rope. It is no wonder that there are many problems associated with rodeo horses, and shoeing them can be a struggle if you are not aware of how these horses work. The lifestyle of the rodeo horse is unique and very tough.

Rodeo arenas across the country have different footing and features. The footing can range from sand, dirt, mud, rocky, or any combinations of these. Rodeos are rarely cancelled due to inclement weather therefore rain can make even a good arena very slick and dangerous to both man and beast. The main events that use trained horses in rodeo today are steer-wrestling (bulldogging), calf-roping, team-roping, and barrel-racing. These events are called timed events. There are other rodeo events that do not use trained horses called rough-stock events, such as saddle-bronc riding, bareback bronc riding, and bull riding.

This article will discuss the timed events and the way that these horses are used. Several factors must be considered when shoeing rodeo horses, primarily taking into account different amounts of traction or grip for horses used in the varying events. The primary focus of this paper will be to draw attention to some of the major shoeing concerns such as shoe style and type of fit, as well as balance. The balance of the hoof is of primary interest and concern when shoeing any horse, due to several factors such as how the horse lives during the hours that he is not being ridden. With the amount of miles that these horses are hauled down the road, joint pain and fatigue can occur from even the slightest medial/lateral imbalance.



Steer-Wrestling: The object of this event is for the competitor to catch a running steer and throw him to the ground. This can be a very dangerous event since there are 3 animals and 2 people involved at high speeds in tight positions. It is also perhaps the most exciting and enjoyable of all the timed events in rodeo, and the manner in which I paid for my first 2 years of college.



**Figure 1: This is a picture of the author bulldogging a steer. You will see that the bulldogging horse is at a fully extended run.**

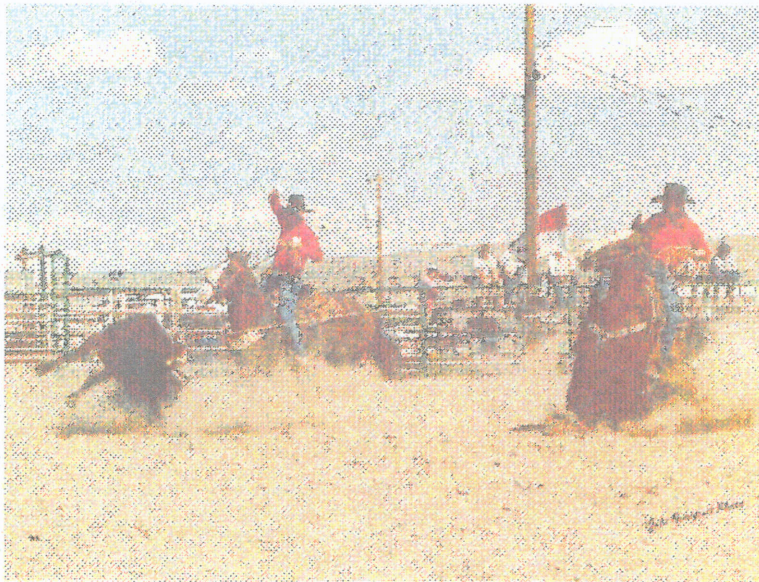
**Calf-Roping:** In this event, the competitor ropes a calf, flanks him, and then ties three of the calf's legs together with a special type of rope called a piggin' string. It is imperative that the horse be able to stop without hurting itself, and then keep the slack out of the rope while the competitor does his part in tying the calf.



**Figure 2:** This is a picture of a calf-roper dismounting after roping a calf around the neck. Notice the amount of dirt being plowed up as the horse stops hard.



**Team-Roping:** Two people compete in this event together. The object is to rope a steer by the horns, turn the running steer, and have the second competitor catch the steer by the hind feet. The person roping the horns is called the header, and the person roping the feet is called the heeler. This is one of the most popular of all the rodeo events, and there are jackpot team-ropings around the country every day of the year. It is possible to rope 4 nights every week of the summer within 50 miles of my house.



**Figure 3:** This is a picture of the author and his brother roping a steer. The author is the heeler in this picture. You can see the position and stress that the heading horse is subjected to.



**Barrel-Racing:** This is a speed event that does not include a bovine. Competitors will run their horses in a pattern around three barrels placed in the arena. This event is primarily done by women, and is extremely competitive. Times are measured with electronic eyes that are tripped by the horse passing through the beam. This means that time measurements can be accurately made to the 1/1000<sup>th</sup> of a second. Shaving off even 1/10<sup>th</sup> of a second can very well take a horse from the bottom of the pack to the winner circle in some tight races.



**Figure 4:** This is a picture of a woman barrel racing at the National Finals Rodeo. The horse is leaning hard into the turn in order to maintain his balance at a high rate of speed.



## Rodeo Horse

The American Quarter Horse tends to be very thick and broad through the chest with a base narrow conformation in front. This makes the hooves wear more on the lateral aspect, and we sometimes see flare on the medial side of the hoof. Even though the majority of these horses do not conform to an ideal conformation, trying to correct them after they mature seldom has desirable results.

Although this may not be the most desirable conformation for the show horse, it suits the rodeo horse quite well. Break over will occur towards the lateral aspect of the toe, decreasing the potential for interference between the medial aspects of the front hooves and legs. This happens since the breakover occurring towards the lateral toe tends to make the horse wing towards the outside.

Typically, the Quarter Horse foot tends to be a little too small for the horse's body size, and perhaps a little straighter walled than other breeds. The hoof wall is also somewhat thicker when compared to a Thoroughbred hoof of comparable size. Taking into account the different events and uses of rodeo horses, there is not any one perfect shoe for every rodeo situation. Professor Russell stated; "It is plainly evident that all feet, differing as they do in conditions and uses, can not be alike operated upon, nor can one kind of shoe be supposed to answer the purposes of all." (7)

With a majority of Quarter Horses that are bred for rodeo, you will find that they tend to stand under on the thoracic limb when viewed from a lateral position. This places the hoof more directly under the bony column. A plumb line dropped from the point of the shoulder will fall through the rear third of the hoof, and the limb will deviate behind the plumb line. This conformation may actually predispose a horse to overreaching or forging. (1)



## Balance

The basal portion of the hoof is extremely important to the farrier, and it is indeed the area where we do most of our work. We would like the bottom the hoof to be balanced, which will allow for strength and equal weight bearing. A properly trimmed and balanced hoof is symmetrical, well proportioned, and has clean, defined structures. The horse must be assessed as an individual and thought given to a number of factors when trimming.

Obviously shoe/hoof wear are extremely important aspects that must be considered. Learning to interpret what the wear on the shoe is telling about the horse is important. Many rodeo horses spend a lot of time tied to a horse-trailer or hitching rail, and they may develop a habit of pawing. If this is the case, then the wear will generally be greater at the toe on only one foot. Lameness might also cause uneven wear from one foot to the other since the horse will not be traveling as it should. Ideally I like to see shoe wear on the front feet occur just to the lateral side of center. This means that the horse will be winging to the outside ever so slightly, which is a trait seen in many fast horses. This way of going also inhibits interference between the front legs and hooves.

The actual trimming of the hoof prior to application of the horseshoe is perhaps the most important skill when it comes to shoeing any type of horse. When trimming young horses, the "T-square" becomes extremely useful. If these horses are trimmed to their long axis before the closure of the epiphyseal plates in the lower leg, they will be much straighter. Quarter Horses mature somewhat faster than some breeds such as the Arabian. Of course every horse is an individual, although it seems that after 12 months, all of the epiphyseal plates from the knee or hock down can be considered closed. Improving the conformation by corrective trimming prior to the epiphyseal plate closure prevents some of the problems associated with a crooked conformation in an aging horse such as ringbone, osselets, carpalis, etc. The "T-square" is also an invaluable tool for the training of beginning farriers, and for the trimming on the front feet of the vast majority of horses. I do not like the "T-square" for use on the hind leg, since the reciprocal apparatus causes the fetlock to be in a flexed position while it is in the air being worked on. Any medial-lateral defects in the fetlock joint will make the foot appear to be out of balance with the leg, when in fact it may be perfectly positioned under the bony column when bearing weight.



Some horses will not be comfortable if balanced on the front feet with a "T-square", simply because their anatomy will inhibit it. In these cases, horses are trimmed so that they are balanced and comfortable when viewed from the dorsal aspect, and standing on a level surface. An example of this is taking into account the anatomy of a horse with a true deviation in the fetlock joint. If the distal portion of the cannon bone and the proximal portion of the first phalanx are not in a parallel plane to the bottom of the hoof, then trimming this horse with the aid of a "T-square" may not be possible. Since this horse has an actual medial/lateral deviation in the fetlock joint as opposed to vertical axis rotation, the joint will suffer if the hoof is forced into a position that puts more stress on one side of the leg.

Case in point: Imagine the near front leg, digit and hoof from the dorsal view on an older horse with a deviation occurring in the fetlock joint. Let us say that this horse is toed-out. The hoof will be worn on the medial toe and toe quarter, with the medial wall being more upright than the flared lateral wall. The length of hoof will be longer on the lateral side than on the medial side. Over a period of time, the bones have changed to accommodate this conformation, with the medial aspect of the leg taking the greater weight.

When the hoof is raised in the air and sighted, it is obvious that the hoof is high lateral, or low medial, depending on the amount of growth versus the amount of wear. A "T-square" can be laid against the palmar aspect of this digit, and the hoof will probably be close to perpendicular to the axis of the digit. When a "T-square" is used to compare the hoof to the axis of the cannon bone, it will be obvious that the hoof will need shortened on the lateral aspect. However, damage to the animal can occur if good judgement and farriery knowledge is not carefully applied to this situation since this is a conformation trait of long standing. A horse will accommodate conformation defects over time by strengthening the areas that are under the greatest stress. Cortical bone on the medial side of the cannon bone will be much thicker and stronger on a horse that has lived a life with a toed out conformation, since the medial aspect of the leg has to take the major portion of the weight. Perhaps trimming this hoof to the confines of a "T-square" will cause undue stress to the weaker lateral aspect of the bony-column and cause fractures, periostitis, arthritis, or other damage to occur.

The short axis, which is the axis through the phalanges from the fetlock joint down, can be considered and compared to the basal aspect and balance of the hoof. In some instances trimming to this short axis is appropriate when dealing with conformation problems that have existed for a



long time on an older horse. In many of these instances, a shoe can be applied that is fit full on the side opposite of the way that the foot is pointing. The nail holes can be punched course on one side of a wider webbed shoe in order to place the shoe under the leg without having to over-do the trimming.

Viewing the normal horse from the lateral position, you will see that the hoof is placed dorsally to the center of gravity of the bony column. This anatomy feature allows the fetlock to act as a biomechanical shock absorber. If the hoof were placed directly under the bony column without any angulation in the fetlock or pastern, there would be an extreme amount of concussion directed through the bones and joints of the limb. The angle to which the hoof is trimmed must be appropriate for the horse being shod, and this angle is not dictated by any number or degree. Horses are all different, and must be shod and trimmed as individuals.

Natural angle is achieved by trimming a hoof so that a straight line will bisect the pastern bones when viewed laterally, and this line is parallel to the dorsal wall of the hoof. Once a hoof is trimmed too steep or too shallow for the horses' conformation, the tendons are put under unnatural stress. If the hoof is too steep, the deep flexor tendon is relaxed, and the superficial flexor tendon is put under greater strain. The converse is true; if the hoof is too shallow, the superficial flexor tendon is relaxed and the deep flexor tendon is put under greater stress. If the hoof is trimmed at the appropriate angle for the horse being worked on, then the tendons are both being stressed as they were designed to be.

A horse can sometimes accommodate improper angles on the front limb by moving the placement of the hoof on the ground to equalize the stress on the tendons. For example, if you were to take a horse that is trimmed to the natural angle, and the limb is perpendicular to the ground from a lateral view; the horse may stand under if a wedge pad were applied to increase the angle. This would mean that even though the angle is steeper, it is possible to still be within the definition of natural angle. If the horse did not stand under, then the hoof would be broken forward, the fetlock would descend slightly, and the deep flexor tendon would be relaxed compared to the superficial flexor tendon. This is not nearly so likely to happen on the pelvic limb due to the insertion at the calcanean process by the superficial flexor tendon, and the reciprocal apparatus.

It has long been a myth in rodeo that a horse needs to be shod with a steep angle so that they will be faster. This has resulted in a number of sprained suspensory ligaments and bowed superficial flexor tendons.



## NORMAL RODEO SHOEING PRINCIPLES

Shoeing rodeo horses requires a perfect fit at the heels of the front feet, with dimes' width of flat metal expansion and extension often being too much. The fit that we use on these types of horses allows for the shoes to stay on for a 5 to 7 week period of time without causing any damage to the normal hoof. Shoes fit to the front feet must definitely be boxed for safety. This style of fit can be compared to the "Hunter Fit" common in England, with the exception of the penciled heels.



**Figure 5: Proper heel fit on a front foot of a rodeo horse. The shiny portion of the shoe indicates the amount of boxing.**

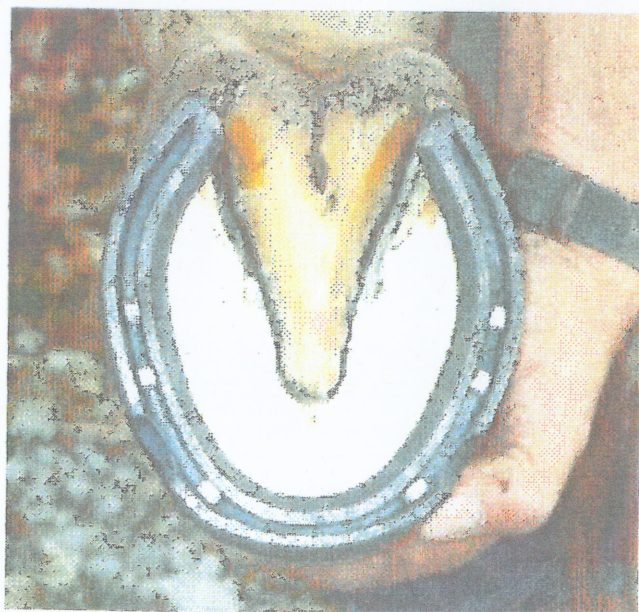
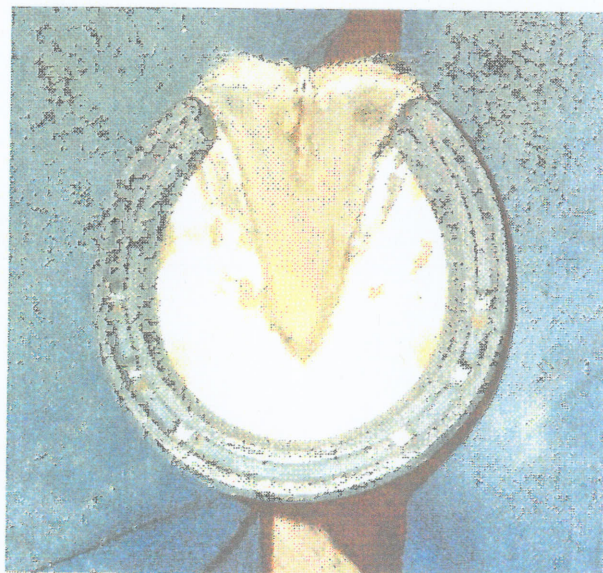
The hind feet on rodeo horses can be fit with more expansion and extension, and there are generally fewer lameness problems associated with the shoeing of the hind feet. My major concern when shoeing the hind feet has to do with traction. I have to ensure that the traction is appropriate to the events that the horse is used for.



**Figure 6: Showing a larger amount of expansion for the hind foot.**



For the barrel-racing horses and steer-wrestling horses, I usually use either rim shoes or concave stock since these horses do not have to stop hard. Concave shoes are preferred, because you can do a much better job of complementing the heel fit instead of just covering them with a round heel cut like a keg shoe.



**Figures 7,8 and 9:** These pictures show my preferred types of shoes and shoe fit for some rodeo horses. The difference between a keg shoe and a handmade concave shoe can be seen in the top 2 pictures.



Calf-roping and team-roping horses need traction in the front feet, however, too much traction on the hind feet is usually not recommended since these horses do have to stop hard on their hind end. The majority of horses in my care used for events requiring a sudden stop are shod with plain stamped handmade shoes on the hind feet. In some instances grip is desired to allow the horse to stop even harder, however this can be hard on the horse since the hind limb has to take the additional shock that greater traction will cause.



**Figure 10: A common style of hind shoe used to minimize the amount of stress on a horse that has to really stop hard.**



## DISCUSSION

The rodeo lifestyle in America is unique for both the cowboy and the horse. Some of these competitors will perform at over 60 rodeos a year, and easily pull their horses over 50,000 miles. It takes a certain breed of man and animal in order to survive, and only a small percentage of those who try will ever reach the top. I can say this from first hand experience.

The primary shoeing problems faced by the farrier who deals with rodeo horses is overreaching, and shoe loss as a result of overreaching. By overreaching, I am referring to interference between the toe of the hind foot hitting the front foot in the heel or bulb region before the front foot has left the ground. Since these horses are demanded such quick starts in a variety of ground conditions, it is quite common to have overreaching problems. Given the right conditions, any horse will be more susceptible to this problem. Mud is a good example.

To deal with this problem, we generally shoe these horses with a tight fit on the front feet, as described on the previous pages. In addition to this, we will set the shoes further back on the hind feet so that the stance will be opened up, and the horse will no longer hit. All that is needed is a fraction of an inch in order to keep a lot of these horses from having problems. Thus, setting the hind shoe back even one quarter of an inch may be all that is needed. Another advantage to setting the hind shoes back is that there will be more extension in the heel region of the shoe. This will cause the hoof to contact the ground just an instant earlier than it would without the length, which will in turn cause the hoof to land that instant sooner. I have heard people say that the way to fix overreaching is to speed up the fronts, and slow down the hinds. This is impossible. It is beyond the laws of physics to make the front feet travel at 10 miles per hour, and ask the hind feet to travel at 8 miles per hour. Since stride length is dictated by momentum and limb length, we can not slow down or speed up any of the limbs individually. All that we can do is change foot placement by applying traction, or by the placement of the shoe as in the above example.

Obviously there are several lameness problems that can be associated with this lifestyle. Since many of these horses can not be used for rodeo while they recuperate, we will not discuss them in this paper.



## CONCLUSION

Hoof balance is without a doubt the starting point when it comes to shoeing not just rodeo horses, but any horse. Athletic horses are less forgiving than horses which lead a more sedentary lifestyle. Trimming must be precise and correct in order to keep these horses sound and performing at their full potential.

The actual application of the shoe and the style of shoe are also important. What a horse is used for dictates the type of shoe used. Traction is an essential element that must be understood in order to shoe these horses properly. Without proper grip, many extremely competent horses are kept from the winners' circle.

While overreaching is just one of the many problems that can be faced by the person that shoes rodeo horses, it is perhaps the most common one I see in my practice, as well as while observing rodeo horses shod by my peers. Dealing with this problem is often just a straightforward and simple change in the placement of a shoe. As with many things in farriery; the simpler you make it, the more effective it becomes.

## ACKNOWLEDGMENTS

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