

HOW TO

SHOE YOUR HORSE PROPERLY

FOR
WINTER
CONDITIONS

An interview with G. Marvin Beeman , D.V.M.
Emeritus at Littleton Large Animal Clinic,
by Marc Patoile

¹ Dr. G. Marvin Beeman received his D.V.M. from Colorado State University in 1957. He has practiced equine veterinary medicine at the Littleton Large Animal Clinic, from 1957 to the present. His curriculum vitae reads like an archive of the national, state and local veterinary boards, research institutes, and societies, as he has served on many, if not most of them. He has published and presented scientific papers in the United States and several foreign countries. He is a joint master and huntsman for the Arapahoe Hunt.

In states such as Colorado, we frequently deal with rainy, snowy, and icy conditions while riding in the winter months. There are three common solutions—specialty nails, studs, or welded borium cleats. Many of the solutions involve the use of borium. Borium is a generic name for tungsten carbide crystals embedded in a carrier material, usually in the form of steel or brass tubing. Or borium can be a special coating added to the head of nails or studs. Borium should not be confused with the element boron, which is called borium in a number of languages.

Borium nails have a chiseled head that extends beyond the plane of the shoe, acting much like cleats on golf shoes. Used in place of regular nails, a farrier can pound one or more on each shoe for additional traction. They can be quite large in protruding from the shoe or quite small, depending on the particular nail. Small-tungsten tipped nails are relatively new to the market and are shaped much like a normal nail, extending only slightly beyond the shoe's plane, but they're topped by a drop of very hard tungsten or carbide steel. These specially treated heads provide a bit of traction. For the reasons discussed below, four very small tipped nails on each shoe may be an economical solution, but the jury is still out on the amount of traction it provides, and how safe it is for your horse.

Screw-in studs, like those that show jumpers and three-day event horses favor in wet weather, go into holes your farrier creates at the two heels of each hind shoe, or of all four shoes; you screw the studs in before each ride and remove them afterward. The problem is that many of the screw-in studs are too large and can cause serious injury to your horse's legs. Further, the threads require cleaning before insertion and can often come loose.

Drive-in studs are generally smaller than screw-ins and are designed to be left in place. They often have heads treated for extra traction, such as borium-tips. The farrier presses them permanently into specially created holes in the shoe. They are also effective on slippery surfaces, providing similar traction to borium cleats.

Borium cleats are the most versatile of the traction enhancing options but also the most expensive. Borium can be welded in varying amounts to give shoes added

traction in wet or icy conditions. The important thing about borium is for your farrier not to smear on too much when welding it from a borium rod. Less is better as it provides lots of extra purchase; too much (or placing it too far out on the edge of the toe) can inhibit the natural rotation of the foot that occurs during break over.

Q: In Colorado, we frequently deal with rainy, snowy, and icy conditions while hunting in the winter months. Therefore, the question is often raised: What is the best way to have my horse shod for hunting during these winter months?

A: Let's talk about the borium cleats first or what we typically just call "borium shoes." You want to have as small of spots of borium as possible on your horse's shoes—the smaller the spot—the better. Too often, farriers put big globs of borium on the shoes, which can create an uneven surface, potentially causing the foot to abnormally break over, resulting in major damage to the foot and legs. The spots of borium should be small; they only need to be 3-4 mm in diameter. There should always be four spots of borium so as to make an even surface. Bead two spots at the toe, on the inside branch, just a little bit ahead of the first nail. Make two more beads on the heel, at the very back of the heel. [See the diagram accompanying this article.]

Q: Any advice for the farriers on how to get the borium to stick, as I often have seen shoes where the borium has fallen off?

A: The borium rods are by far the best way to do it. Ask them not to use the beads which are melted on—they are too big. The borium should be spotted onto the shoe with a borium rod, which provides smaller spots. If a borium spot comes off, you must replace the shoe, as this uneven surface can torque the foot.

Q: When do you put the borium shoes on and when do you take them off?

A: In Colorado, for fox hunting, you want it so if there is snow in November; they are on your horse. Leave them on through the end of the season, then remove them.

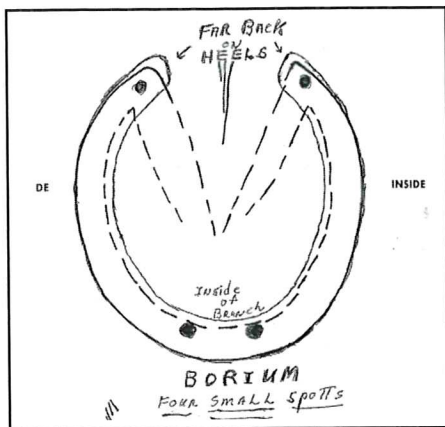
Q: My farrier always complains that borium beads are difficult to solder on; no one does them anymore, they use borium studs instead. Some claim that borium

nails work just as well, for little or no extra charge. What about borium nails or borium studs?

A: The dynamics of studs out on the branches of the shoe produces abnormal torque on the foot and will hurt the horse. The borium nails can cause the same problem if the heads are too big. I am opposed to large borium nails, as they torque the horse's foot. Small drive-in studs, properly placed, are fine. Screw in studs can be a lot of extra work. And, I don't recommend taking screw-in studs in and out, depending on each hunt. Horses get dependent on them during the season. We tried just using them when we thought we needed them one year, and some horses refused to go exercise as soon as they realized they didn't have the studs. The drive-in studs may be even better, as they are less likely to come loose, and generally seem to be available in the smaller sizes. The smallest studs your farrier can find are generally the best.

Q: It sounds like you really prefer the borium welded to the shoe over the studs or nails?

A: No, the tiny drive-in borium studs are fine. Most of the time, I see studs that are too big. The reason you put the borium on the back part of the branch of the toe is to enhance a good break over. If it is on the outside of the toe, it significantly interferes with a proper breakover, which is another reason why the big borium studs or nails are unsatisfactory. This season, we are experimenting on our staff horses with tiny tungsten-tipped nails in the first and last holes of the shoes (4 tungsten nails in each of the four shoes) which provides just a slight protrusion from the shoe. How well these nails grip on slippery surfaces, compared to borium, is unknown to us at this time. They are far more economical as farriers need an oxyacetylene torch to weld the borium onto the shoes and usually charge more for this extra process. The nails are a cheap alternative if they provide the necessary grip, and are located properly so as to cause as little risk of injury as possible. Therefore, we hesitate to recommend them at this time. The drilled and tapped studs, in the smallest size, depending on the farrier, may be the most economical and reliable alternative to the borium shoes.



Prescription on how to properly place the borium

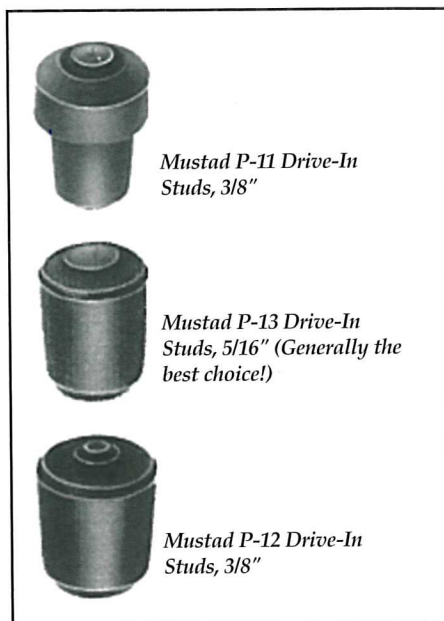


These borium spots are too big, uneven, and too far out on the edge of the toe



Small tungsten tipped nails, properly placed in last hole, but should also be placed in first hole as well

Mustad makes Duratrac E Head nails which are borium tipped. They also make City Head Duratrac nails which are borium tipped. European made shoes requires the E Head. American made shoes require the City Head. Both would protrude the same amount from the shoe. Capewell also makes similar nails, which would protrude the same amount. There may be other



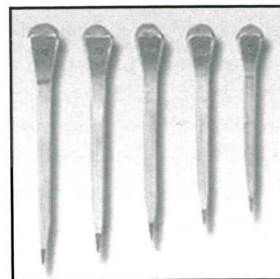
Mustad P-11 Drive-In Studs, 3/8"

Mustad P-13 Drive-In Studs, 5/16" (Generally the best choice!)

Mustad P-12 Drive-In Studs, 3/8"

manufacturers as well. Borium-tipped nails are a cheap solution, as a regular nail costs around \$.06 and the borium nails are around \$.32 cents, making them only about \$4 additional per horse. Of course, your farrier might charge more or less than that, depending upon the situation. These nails are tough on hammers. The drive-in studs themselves cost around \$10 per horse, not including the extra labor for drilling and driving them in.

According to Mustad, the smallest, yet still generally available, tapped-in studs are the Mustad P13. The P13 is smaller than the P12 or P11 (shows 1/4" above the shoe, 3/8" in diameter, with a carbide tip). The P12 is also fatter in diameter than the P11 or P13 and requires a different sized hole. Often times, farriers will recommend the P-11 in back and P-13 in front for excellent traction. However, the P-13 can be applied in all four holes on each shoe, which still provides good performance, balanced with good safety to the horse. On all of these Mustad studs, the tungsten carbide pin runs the length of the stud, providing excellent wear. As the P13 is tapered, it can protrude more or less (even nearly flush), depending on how hard you press them in, which allows some flexibility based upon individual preference. The Mustad P9, P10 and P11 studs are even bigger than the P-11 and probably too big for Colorado conditions, where the ground might also be frozen or hard. **H**



Borium tipped nails, which are too big

Notes on Borium from Bill Clymer, Farrier

The best borium is Stoody borium. It comes in a mild steel tube. Stoody is the easiest borium to control. The major competitor is Drill Tex flux core—which is not as easy to work with as it tends to run. As far as the nuggets of borium go, I have had a problem with the nuggets being too soft, and often they won't stay on. So, in my opinion, the Stoody borium is the way to go.

The next issue is the cost. It used to be that every farrier hand made their shoes and carried a set of torches. Now, the shoe manufacturers have made shoeing much easier with a wide range of shoes so, today, farriers don't often carry a set of torches. Even if they do, they don't use them as frequently as they used to, and don't keep in practice on using the torches well. The borium is about twice as time consuming as driving in studs (plus you have to add the high cost of the borium rods, the gas for the torch, etc.) and it is relatively expensive, and most customers aren't excited to pay the extra cost. If you are really handy with the torch, it adds 40 minutes to shoeing a horse, compared to about 20 minutes extra for drive-in studs. Back East, I worked a lot with Amish horses, where the Amish require the borium for traction on their carriage horses on the pavement. I went through buckets of borium back there. In Colorado, the weather is more forgiving and people often don't want to pay the higher price.