

# Shoeing The Racehorse For Various Track Surfaces



by HEATHER SMITH THOMAS

The way a horse is shod, and the type of shoes he wears, can make a difference on how well—and how safely he can run—on different types of footing. Shoeing the racehorse has taken on a new set of challenges with the new all-weather tracks. The proper amount of traction is crucial, and the racehorse industry is looking at whether traction, per se, is detrimental or helpful in various situations.

“It’s a whole new ball game now, with the different track surfaces,” says Steve Norman, a Kentucky farrier who is on the toe grab committee that has been addressing safety issues. “The safety factor is foremost on many people’s minds, especially what happened with Eight Belles in the Kentucky Derby. We wonder whether we are hindering or helping horses, with traction devices. Are we doing the right thing or the wrong thing in the way we are shoeing these horses,” he asks.

“We’ve had slow motion videos for the past 30 years to help us look at how horses move, and these are now helping us look at how horses run on poly (synthetic) tracks and dirt tracks. It’s been interesting, looking at the difference in what happens during the slide phase of the stride, and this has us scratching our heads about what we are seeing. Should we ban toe grabs on certain surfaces? Do we have enough data to say we feel that horses don’t need them? I’ve been on this committee since it started and it’s been interesting to learn how the horse’s foot hits the ground. When we shoe them, it’s not just as simple as just putting on shoes and going on to the next horse,” says Norman.

“We have extensive videos and are still trying to figure out all the factors. The data so far is saying the poly track is definitely a home run for safety issues, but we don’t have enough statistical data to say it’s always best, versus dirt. Right now we can say we’ve had less horses injured on the poly track, but that’s only because we’ve run less races on those. We need more numbers of races to get a true comparison, and that may take five more years, or longer,” explains Norman.

“We’ve convinced people they don’t need toe grabs on the poly track. Here at Keeneland, and the affiliated track in Cincinnati, they’ve banned toe grabs that are two millimeters or higher. Two millimeters are very small; you can hardly call it a traction device. It’s more like a wear plate, to protect the toe and keep the aluminum from wearing away as fast,” he says.

Last fall, Keeneland banned hind toe grabs, after Todd Pletcher equaled the win record without using them. “Keeneland figured a horse doesn’t need to have toe grabs

on the hinds. And, in reality, we don’t need them. But this last January, they had eight horses break down that month in Cincinnati, and they have the poly track up there. So the state veterinarian and various people got together and said the cause of those injuries might be because they had no toe grabs on behind. So they changed the rule and said you could have toe grabs, and they haven’t had a breakdown since. We don’t know if the breakdowns were just coincidence, or a bad bunch of horses. So Keeneland is now saying we can use toe grabs on the hind feet,” says Norman.

A study at Cal Poly a few years ago, looked at front toe grabs and came up with statistics showing that toe grabs on the front feet could be detrimental. “We have that data on the front feet, but nothing on the hinds. We can’t really say we don’t need them behind, because we don’t have enough data,” says Norman.

Every racetrack makes its own rules but they are all trying to comply with the recommendations of the safety/welfare committee. “There are 15 of us on the committee, giving reasons why we feel the way we do on these issues. Almost every racetrack now bans toe grabs and stipulates that the horses have only two millimeters (or less) on the front feet, and that’s the way it’s been for 10 years. We made this a model rule in hopes the racetracks would comply, and most of them have. But the hind feet are a different issue,” explains Norman.

Mitch Taylor (Kentucky Horseshoeing School) is also on the committee. “We have to figure out how to manage for different track surfaces, including the synthetic surfaces. I talked with a racehorse plater recently in Des Moines, Iowa, and he said some people want him to shoe the hinds and leave the fronts barefoot. Others want him to shoe the fronts and leave the hinds barefoot. They are trying everything,” says Taylor.

When horses run on a synthetic surface, it changes the way they move. This has been learned by watching the high-speed films that have been done at tracks like Keeneland and Churchill Downs and several others. “The slide phase of the stride is somewhat minimized on some poly tracks, especially new ones. The tracks that have a few years’ use have loosened up a little and this lets the foot slide more normally,” says Taylor. Because of the differences in surfaces, this makes it more challenging to properly shoe the horse.

“A synthetic track has a high shear component. A dirt

**Continued on next page**



### *Horse Care Cont'd.*

track has low shear strength. The poly track, because it has so many fibers and rubber, wax, etc., has a different kind of give. It doesn't break away from the foot like dirt does. It's like the difference between putting your hand into sand with a little moisture in it (and it breaks away/shears away from your hand) compared to putting your hand on a trampoline. Both of them yield and give, but the latter is knitted together and does not break away. Instead, it rebounds back. This is similar to the give on a poly track," explains Taylor.

If you look at a dirt track microscopically, it's just a bunch of tiny round pieces that fall apart. There is nothing to hold them together. "This is why people put clay, loam and water into a dirt track to give it more consistency," he says.

Taylor feels that a properly maintained turf track is probably the ideal footing for horses. Good sod has a little more integrity than loose dirt, with the root structure under the grass to hold everything together. The grass on top gives some cushion to the footing. By contrast, a dirt track can be very hard, or it can be wet and sloppy.

On a dirt track at any training center, after the horses work and train for an hour or so in the morning, the footing is very deep and cuppy. "It becomes harder for the horses to labor through it. The foot sinks all the way into the depressions and

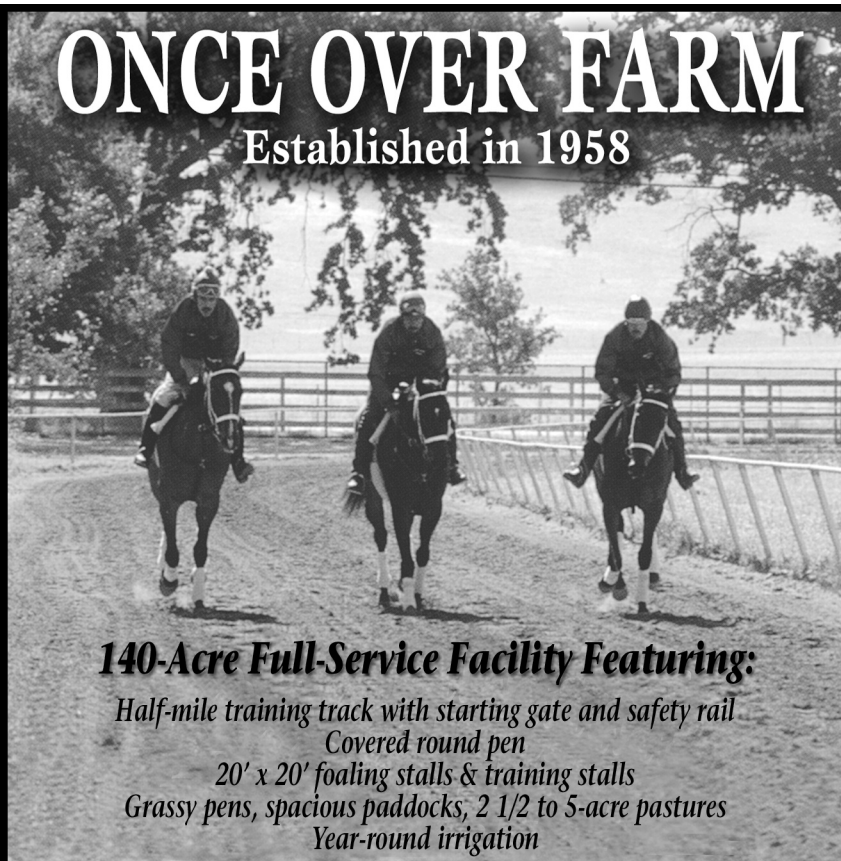
the fetlock drags on the ground as they are sliding. Then they run down—fetlock joints dropping too far as they are still sliding, rubbing all the hair and hide off the back of the fetlock—and bleed. If you look at photos of Big Brown after the Preakness, he was run down behind and bleeding when they were walking him back to the barn," says Taylor. This is why some horses need protection and are worked and raced with run-down bandages on, to keep this from happening. If they get sore, they won't do their best.

"With a poly track, the foot doesn't sink in so much. It keeps them up on the cushion a little more. That cushion takes a lot of the impact and gives a little back, which dirt doesn't do at all. There are no holes in the synthetic surface when horses are running ahead of you. With a dirt track, these holes can be several inches deep, and horse's feet may fall into them or partway on and off them, which is hard on the legs. A nicely maintained dirt track is great, but you are never going to control the weather conditions. And if you are the sixth or seventh horse back in the pack, you will be running through holes, no matter how good a shape the track was in to begin with," says Taylor.

"When a dirt track is wet and sloppy, and the foot hits the ground, it's like soup—like watching a rock go into a waterhole. The foot just pushes/splashes all the cushion out in all directions when it hits the base of the track. When a toe grab hits the base of the track, it creates a problem, with all the loading at an abnormal angle (with the toe up a half

## ONCE OVER FARM

Established in 1958



### **140-Acre Full-Service Facility Featuring:**

*Half-mile training track with starting gate and safety rail  
Covered round pen  
20' x 20' foaling stalls & training stalls  
Grassy pens, spacious paddocks, 2 1/2 to 5-acre pastures  
Year-round irrigation*

**Conveniently located  
within one hours drive  
to Golden Gate  
and most Fair Tracks.**

**LAY-UPS & BOARDING  
BREAKING & TRAINING  
SALES PREP**

### **ONCE OVER FARM**

**Efrain Guzman, Trainer/Manager**  
13905 Watsonville Road,  
Morgan Hill, CA 95037  
Tel: 408-779-3411 • Fax: 408-779-5772  
[www.onceoverfarm.com](http://www.onceoverfarm.com)

inch or quarter inch instead of the foot being level," he explains. This produces more strain and stress on the foot and its associated tendons and ligaments.

"I'm not saying that horses don't need traction on dirt tracks, but we have to be careful about it, especially in the front feet. We've found that on dirt tracks, the horse needs a little traction on the hind feet for good propulsion—keeping in mind that horses are rear-wheel-drive animals. A low toe (small traction device) is still appropriate on the hind feet, but definitely not in front. On poly track, I feel that no traction is needed, for most horses. A flat shoe like a Queens plate is plenty," says Taylor.

He feels that some people have the misconception that horses push off the ground when the toe breaks into the ground and they are pushing off at an angle, when in fact they are getting the majority of their propulsion when the fetlock is dropped down, taking the weight. When the fetlock is dropped and loaded and all the tension is on the suspensory apparatus, this gives the leg some thrust and spring.

"As the leg pushes up from that position, the orientation of the foot to the ground does not change. Whatever orientation it has at that point, it is pushing down into the ground. The forces of propulsion are going down into the ground and transmitted in a forward force because of the articulation and position of the bones within the joint. As the horse pushes down and the suspensory apparatus brings the fetlock up, they are pushing down into the ground, not at an angle like we used to think," explains Taylor.

"Therefore, traction is best accomplished by an even rim of steel or aluminum as it cuts into the ground, pushing in a downward force. Toe grabs at that stage and time don't make any difference; they are more for keeping the horse from sliding as he pushes off. But they stop the forward slide of the foot, sometimes too quickly, and cause all the force to dive the toe deeper into the track, because it has to go somewhere. So when the horse loads the foot, it is loaded at an angle rather than flat, which puts more strain on the whole suspensory apparatus (suspensory ligament, superficial flexor tendon and the proximal sesamoid bones, which are three of the most common sites of injury)," he says.

This is one reason toe grabs are detrimental. "They produce a snowplow effect, causing the toe to stop too quickly and be driven deeper into the ground than it normally would," explains Taylor.

"Horses definitely don't need much traction on a poly track. They can even run barefoot, and some people are running them barefoot behind, trying to reduce the incidence of high suspensory injuries and sacroiliac problems. Toe grabs behind, on a poly track, are definitely a no-no, whereas on dirt tracks they might be beneficial. About 95 percent of racehorses today have Queens plates in front and either Queens plates or a low toe (XT, the minimum height toe grab) behind. Some are shod with square toes—a bold toed shoe that gets the toe back a bit," says Taylor. Farriers and horsemen are still working on what type of shoe is best for various footing issues. ■

## LAST CALL FOR FALL

### 2009 ATBA FALL YEARLING & MIXED SALE

### THURSDAY, OCTOBER 15, 2009



## YEARLING SIREs

BENCHMARK	DEVON LANE	MOMENTUM
BERTRANDO	FOOL THE EXPERT	ROCKY BAR
BIRDSTONE	FREESPOOL	SIDEBURN
BUCK STRIDER	GOTHAM CITY	SALT LAKE
CHAMPALI	GOLDEN GEAR	SINGLETARY
CITY ZIP	HARLANS HOLIDAY	SLEW CITY SLEW
COLLEGE GRADUATE	HIDDEN CITY	TIZBUD
CROMWELL	HOLY BULL	TRIBAL RULE
CUVEE	IN EXCESS	TOP HIT
DESERT GOD	MARQUETRY	VRONSKY
DEPOSIT TICKET	MINISTERS WILD CAT	WESTERN FAME, etc.

Arizona Thoroughbred Breeders Association

P.O. Box 41774 • Phoenix, Az 85080

Phone (602) 942-1310 • Fax (602) 942-8225

Web site: [atba.net](http://atba.net) • e-mail: [atba@worldnet.att.net](mailto:atba@worldnet.att.net)