When a horse needs shoes

Part 5 - Plastic fantastic?

by Andrew Bowe, BAppSc, Master Farrier

Photos courtesy Mayfield Barehoof Care Centre - www.barehoofcare.com

Until recent times, metal was the only practical option for horse shoes, but as this series has highlighted, the convenience comes at the expense of long-term soundness.

The development of new materials and designs are making plastic shoes a much more viable option, but as Andrew Bowe explains in this final part of the series, "sometimes the only way to find out the real value of something new is to try it for yourself".

First came steel, then aluminium and now there is even titanium as an option (the author can picture one set of titanium shoes lasting not just three re-fits, but three whole generations!). Metal is the obvious choice, easy to customize, yet hard wearing and holds its shape. It does the job.

Despite the practical suitability, however, metal horse shoes remove the frogs from ground contact and concentrate a horse's whole body weight onto the hoof walls alone. As a result, blood flow is impacted, as is the ability to absorb concussion, turning a short-term solution for protecting soft hooves into a long-term problem. A large percentage of chronic lameness can be traced back to this simple scenario.

For horses living and working only on soft ground, this is not a huge issue, but the subject is always topical in Australia because the dry season is never far away. For those in the southern end the dry summer has just finished but will be here again soon; for those in the north end, the dry winter season is looming.

Is plastic fantastic?

The development of shoes made from flexible 'plastic' has gone a long way to addressing the short comings of rigid metal shoes. In fact, plastic shoes allow full hoof function to continue whilst still providing excellent mechanical protection; something that metal shoes simply can't do.

The author was regularly shoeing with them about 15 years ago, before the concept of riding horses barefoot was widely adopted, and before hoof boots had become an effective alternative to shoeing. Back then, plastic shoes were used when the summer ground was too hard for horses and, from memory, the benefit of using soft shoes was immediately noticeable in the saddle.

So why didn't we keep shoeing with plastic? Indeed, if they are so good, why didn't they become mainstream back then?

Whilst they were great for hard arenas and for travelling down gravel roads, they were too slippery on the steep hills of the Victorian high country.

Hoof boots evolved quickly and took over the task of gravel road and arena riding, but a lot of horses are used beyond the capability of boots, whether that's security of attachment or grip, or simple legislation (competition rules simply don't allow boots to be used in dressage). Metal shoes remained the best option when boots weren't suitable.

Plastic shoes have undergone somewhat of a renaissance in recent years. It seems they have improved considerably, with better designs and better materials.

Plastic shoes are now better suited to bridge the gap between maintaining hoof function and the reality of horses working hard for a living.

The advantages of plastic

Plastic appears to dampen the sharp impact generated when a hoof strikes hard ground, possibly slowing the high frequency shockwave via internal dampening and helping to dissipate it across the whole hoof.

All manufacturers claim large reductions in concussion relative to metal shoes and this is (anecdotally) supported by riders' reports from the saddle.

Nevertheless, there is more to the concussion story. Energy that enters the hoof still needs to be transferred correctly into the blood stream and for this to occur, the hoof must be consistently landing heel first with the frog and heel platforms sharing the weight.

Plastic shoes that support the frog with a wide bar seem to perpetuate heel first landing. Metal shoes on the other hand usually lead to toe first landing because the frog is unsupported and the heel platforms which are carrying the weight of the horse and receiving all of the impact inevitably get crushed and bruised.

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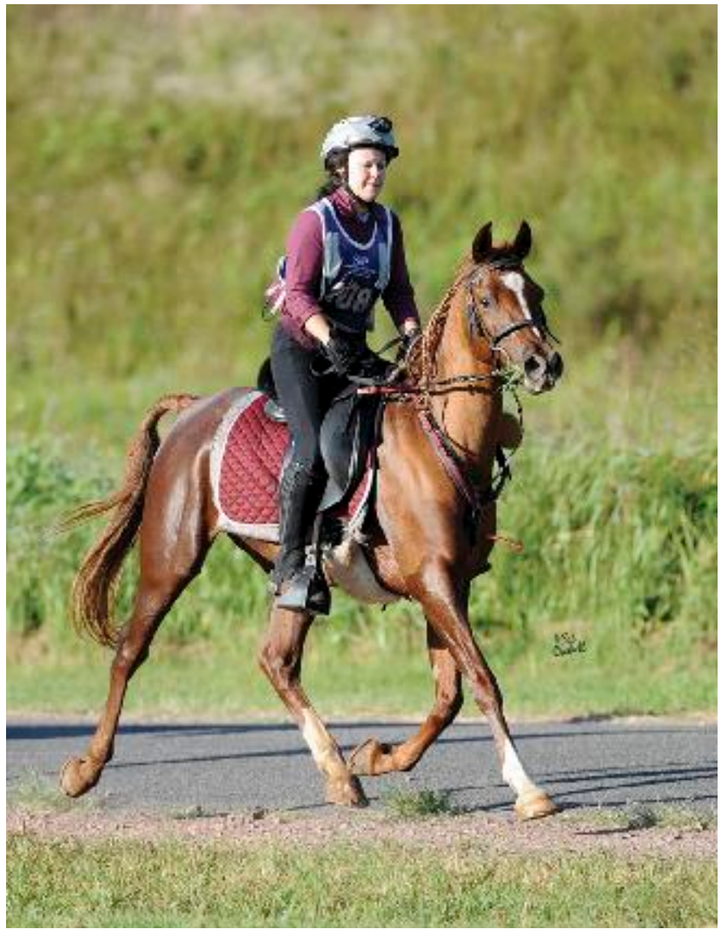
Above: a hoof well shod with a CERA™ polyurethane shoe (Photo courtesy of Claire Fleming.

Below: Clearly a heel first landing. Claire Fleming riding Picnic Park Desert Dancer with CERA™ shoes at the 2012 Faraway endurance ride in Queensland (Photo by Sue Crockett).



Plastic is a solution for horses suffering from existing heel soreness problems, everything from simple bruised heel platforms to chronic lameness such as navicular; even contracted hooves seem to de-contract and become more functional after being supported through the frog and being able to flex when loading. This benefit also extends well above the hoof and horses suffering from joint issues are likely to be more comfortable in soft plastic shoes.

Plastic is about one third the weight of steel which makes a huge difference to high mileage horses.

Nowadays plastic shoes are used extensively for endurance riding where concussion and fatigue have long been serious issues.

Another advantage of plastic is that it can be modified with just a grinder to create rolls, rockers and shortened breakovers. There is no need for difficult forging work for horses requiring 'corrective' shoeing.

Whilst plastic shoes can't match the therapeutic qualities of softly padded hoof boots, they are more secure and reliable (and obviously safer) than strap on boots for horses working at speed or in rough terrain. Nails are still the firmest way to attach anything to a hoof. Speaking of which…..

Above: A CERA™ shoe being nailed on (photo courtesy of Claire Fleming).

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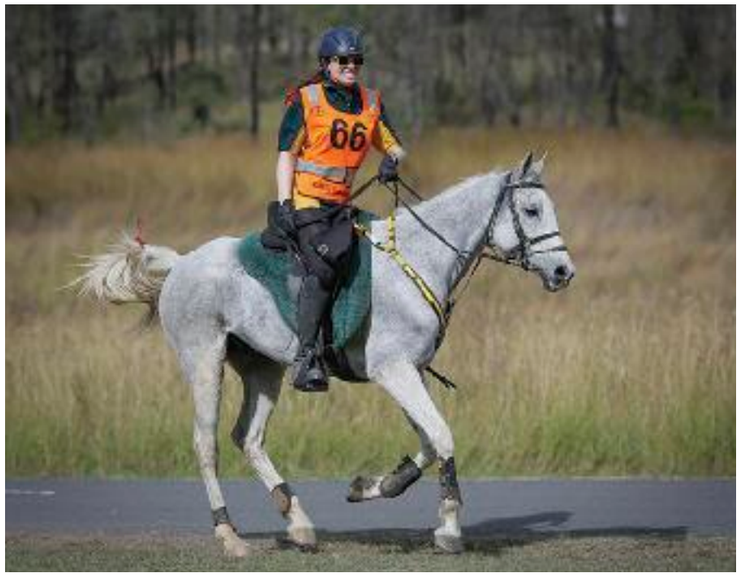

Above: One of many horses that wore TERRAFLEX™ shoes at the 2013 Tom Quilty which is held annually and is the pinnacle of endurance competition in Australia. (Photo courtesy of Blue Pegasos Pty Ltd).

Nail or glue?

Plastic shoes have the added option of being glued onto hooves. Whereas nailing concentrates the points of pressure into a very small section of the hoof wall, glue has the advantage of spreading the load over a much larger area, thus bypassing the problem of walls that become too weak to hold nails.

There has been a move towards gluing plastic shoes on for marathon rides such as long distance endurance rides or long stock rides over rough ground and more recently as routine application.

Photo 4 – An Easyshoe™ that has been glued on (photo courtesy of Easycare Inc.).

Of course, gluing sounds easy if you say it fast enough!

The reality of gluing is the extra cost of time and materials (and not to mention the trial and error when a horse owner is learning how to get all the glue onto the target hoof, rather than the horse, themselves or even the stable walls). It can get messy.

When it comes to the choice between nails and glue, this old farrier comes down firmly on the side of pragmatism and would much prefer nails.

Maybe gluing is gaining in popularity because plastic shoes can be a bit more complex to nail-on than a steel shoe and it takes a bit of practice to get the clenches high enough.

Horse shoe nails are designed to curve as they travel through solid material. The thicker the material, the more they will curve, so thick shoes can mean that the nails will exit the hoof wall prematurely.

For those not skilled in the art of driving horse shoe nails, this problem can be overcome by pre-drilling nail holes through the plastic so the nail can be 'started' at the correct place on the hoof surface.

Making tight clenches can be a bit hard, because nail heads can tend to disappear into the body of the shoe, but most of the companies that make plastic shoes also supply specially adapted tools to circumvent this.

Removing nailed on plastic shoes can also be a challenge to the inexperienced at first, because being flexible means they can't simply be levered off (this is the reason why they rarely get pulled off or sprung like a metal shoe). It is best to use a pair of sharp nail pullers to remove the nails individually.

Limitations of plastic shoes

There are limitations to every type of hoof protection – the author learnt long ago that nothing works every time for every horse. If only.

The main problem with plastic shoes arises from their softness.

The whole purpose of using them is because they are much softer than metal, but when the hoof is at maximum load, the soft shoe squashes momentarily, just enough to loosen the nails which creates 'play' between the nails and hoof wall. Over time, the clenches don't stay as tight as they do with metal shoes and the constant movement tends to weaken and eventually split the hoof wall.

Plastic shoes are probably only suitable for three or four fittings in a row before the hooves will need time out to grow new healthy wall into place. Despite this, they can usually be employed for the duration of a hard summer or a competition season.

Lack of grip may be a concern in some situations, such as muddy areas, particularly clay which can ball up and some of the harder plastics can get slippery when they become worn smooth.

When horses need the 'bite' of a metallic edge on the hooves to maximize grip, plastic shoes may not be suitable.

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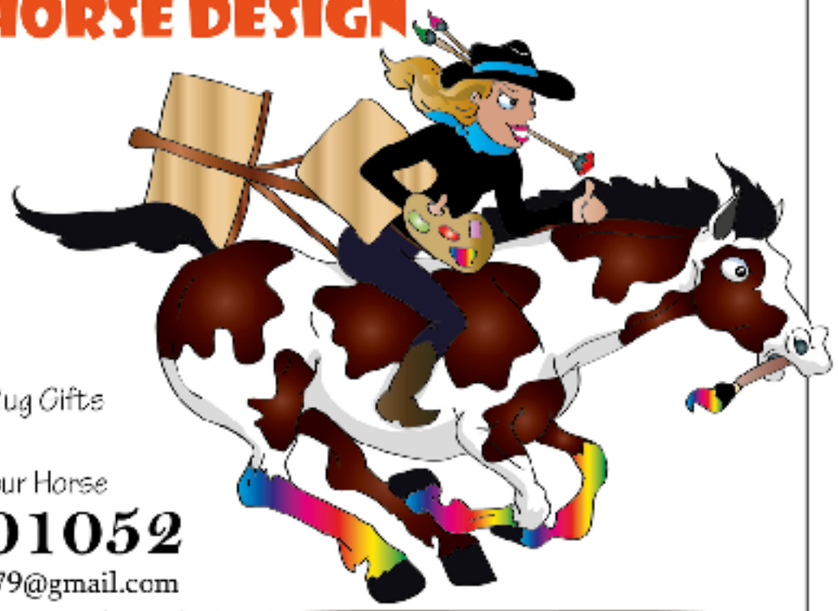
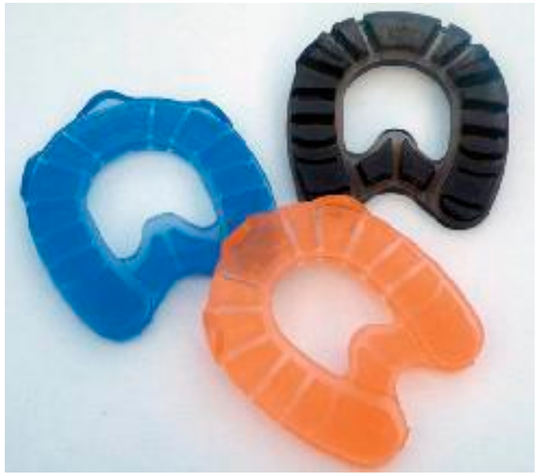
Above: An Easyshoe™ that has been glued on (Photo courtesy of Easycare Inc.)





Above: All the pretty colors. Terraflex™ shoes come in three different grades of softness (Source: www.bluepegasos.com.au)

Which brand?

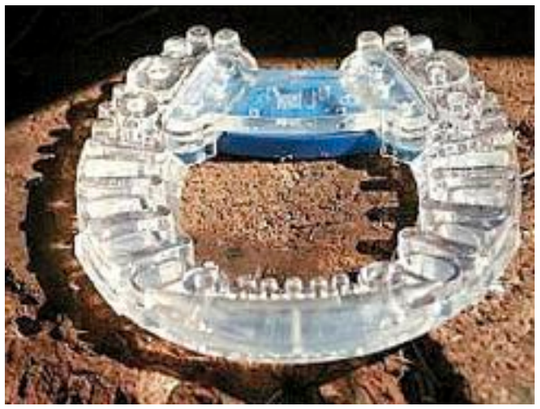
There are quite a few different brands of plastic shoes on the market (and there are more coming all the time), but some are quite hard and rigid which defeats their intended purpose, so be sure to choose a brand that is soft enough to flex with loading to dampen the impact and wide webbed with a wide frog support to spread the weight bearing as widely as possible over the hoof.

The following brands showcased here have been chosen because they fit these criteria, are readily available, inexpensive, are easy to use and also because the author has used them (please note this list is not exhaustive and any recommendation extends only to those shoes that have frog support).

CERA™

These were designed specifically for high level endurance riding and have been first across the line at top level events such as the Tom Quilty and the Queensland State Championships.

Farriers like these shoes because they come in front and hind patterns and they are quite easy to use.



Above: Close-up view of the ground surface of a CERA™ shoe (www.ceraenduranceshoesaustralia.yolasite.com).

Terraflex™

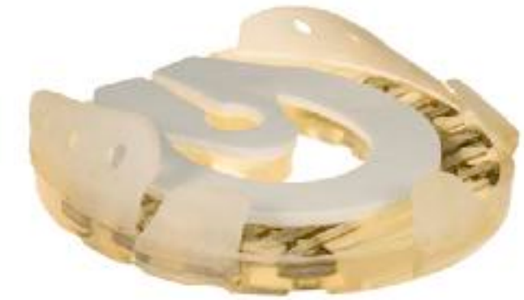
From high mileage horses to convalescing rehabs, these shoes suit a wide range of equine disciplines and are useful for rehabilitation work because they come in three different grades of softness.

What's more, these shoes are proudly made in Australia (that is something we don't get to say very often nowadays).

Easyshoe™

The new kid on the block is the Easyshoe™ (made by Easycare Inc. which is the world's biggest producer of hoof boots). That they are venturing beyond their previous comfort zone with hoof boots is testament to the industry wide growth in the use of plastic shoes.

Easyshoes™ were originally aiming for the racetrack market but the range has since expanded to include shoes suitable for performance and endurance horses.



Above: Close up of the hoof surface of the Easyshoe N/G™ (Photo source: www.easycareinc.com)

The verdict?

Nothing stays as firmly attached to a horse's hoof than a rigid metal shoe. If it wasn't for the existence of chronic lameness, this discussion wouldn't be taking place.

Like all forms of hoofcare that stray more than a stirrup from the narrow bridle track of tradition, there are sure to be critics aplenty riding in the grandstand. Like most things, time will be the ultimate judge. It is easy to get a horse going today but the real challenge is keeping a horse sound for years to come.

Sometimes the only way to find out the real value of something new is to try it for yourself. When the ground is hard, your horse might notice the difference. You might just notice it in the saddle as well.