

The following is a paper submitted by David Nicholls of the U.K. for his lecture of the same name given at the 2002 "Essential Hoof Care Forum"

Treating Laminitis: Going the Extra Mile

By David Nicholls, RSS, AWCF, RJF

Treating laminitis takes time, expertise and sufficient finance to maintain the equine until recovery is complete. The length of treatment is governed by:

- 1) The severity of the case.
- 2) Early treatment utilizing both correctly fitted Styrofoam hoof support (First Alert Kit) and veterinary treatment.
- 3) Environment.

"There are people who know the cost of everything but the value of nothing".

When treating Laminitis it is value for money that is important and with so many treatments on offer it is difficult to discern which treatment is not only the most successful but also represents good **value for money!**

The following field study was taken from a selection of nine similar cases of laminitis. All nine cases received uniform veterinary treatment from the onset of laminitis.

- 3 cases were treated using steel heart bar shoes. These horses were kept on stall confinement in deep bedding and had frog support pads taped on the feet prior to and following shoeing.

- 3 cases were treated using plastic adjustable heart bar shoes, ("Eustace shoes"). These horses were kept on stall confinement in deep bedding prior to and following shoeing.

- 3 cases were treated using First Alert (Styrofoam support kits) and when appropriate, shod using the Equine Digit Support System. These horses all had access to limited free movement prior to and following shoeing.

All nine horses recovered and returned to their pre-disease work programs but there was a clearly defined pattern of **value for money**, relevant to the treatments given.

The costs of each case included both the veterinarian's, farrier's fees and any long term veterinary care, medication or specialist farriery. At this point I came to a crossroads regarding treatment. To my surprise! Despite the initial start up cost, the Equine Digit Support System came out the cheapest option and the most successful treatment to return horses back to pre disease soundness and in some cases had actually elevated them to a higher level of soundness not previously experienced.

Financial considerations: The start up costs for steel heart bar shoes were the lowest, followed by plastic adjustable heart bars and EDSS was the highest start up cost.

The shoeing periods for both types of heart bars was three - four weeks. The shoeing period for EDSS is six - eight weeks. Each time the horse was presented for shoeing "x rays" were taken to assist in shoe placement and monitor progress.

The horses wearing steel heart bars wore these for their lifetime.

The horses shod in plastic adjustable heart bars, wore these until they could tolerate nailing steel heart bars. These horses wore steel heart bar shoes for life.

The horses wearing heart bar shoes were maintained under veterinary care for a minimum of one year.

The horses shod using EDSS were shod for an average of three times, then shod in Natural Balance shoes and returned to the owner's regular farrier. These horses were maintained in Natural Balance shoes at regular shoeing fees.

Conclusions: Treating horses with bar shoes creates dependant pathology, thus making these horses dependant on their continued use, to remain sound.

Both types of heart bar shoes required long term veterinary and farriery input.

The plastic adjustable heart bars have a high start up cost thus making their use the most expensive overall.

Although steel heart bars were a relatively inexpensive start up when veterinary fees and the additional cost of lifetime maintenance of bar shoes, makes this an expensive option.

Equine Digit Support System followed by continued shoeing in Natural Balance shoes yielded the best results at the lowest costs. Despite the high start up cost, veterinary and long term maintenance fees were low in comparison to the heart bar options and offered the **best value for money.**

Designing a high yield, financially viable treatment regime.

Stall rest: Stall rest can be destructive to the recovery process. To confine a horse to stall rest is like confining a human to bed rest in solitary confinement. Horses are social animals and when confined in this manner, often suffer depression without the contact with other horses. This depression can lead to horses giving up the will to survive and recovery is often slower. I

have many cases that have failed to improve in a stall but when moved from stall confinement into a small coral, have started to improve daily and have returned to pre disease soundness. I now see stall confinement as a retrograde step in a treatment program.

Stability: Styrofoam (First Alert), offers a cheap, reliable and efficient treatment for acute laminitis. Providing the horses feet have been supported using a correctly fitted Styrofoam support system (First Alert), it is usual for the horse to have

become more ambulatory. This movement and support has been shown vital to the repair process. During this time it is usually possible to reduce the drug input yet, still maintain the stability of the disease process.

Why the Equine Digit Support System?

In my experience, heart bar shoes were a good shoe of their time. Some of the problems associated with heart bar shoes are; they rely on the frog alone as a support mechanism. The very regular shoeing not only increases the cost but also retards recovery when compared with EDSS. Armed with new, up-to-date and scientifically proven information we must move on and utilize a system that addresses the biomechanical needs of the foot for weight-bearing, circulation, physiology and pain response.

Addresses natural weight-bearing:

The digit is supported by using only the rear two thirds of the foot through correct hoof preparation and shoe placement. Uniform support throughout the bars, rear sole and frog is achieved by the impression material, which is similar to the way earth packs into the foot of the unshod horse.

"I thank all the horses I have failed, they have taught me so much and enabled me to assist others."

Improves circulation and physiology:

De-rotation of P3 behind the tip of the frog reduces pressure on the solar circulation. The design of the pad/shoe unit decreases the direct pressure on the solar circulation. Impression material moulds to all areas of the rear of the foot. I feel this uniform loading and unloading improves circulation, by allowing the (digital cushion/lateral cartilage) system to function as nature intended it to. This is accomplished without local ischemia and pressure necrosis, which often plagues systems which rely on frog support alone. Adjustable heel heights and frog inserts support only during weight-bearing and release when the foot is unloaded. This mimics the frog contact with the ground during the weight-bearing phase of the normal foot.

Allowance for pain response of the digit:

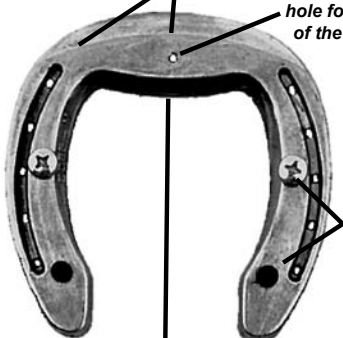
Shoe placement is such that Breakover of the digit is directly below the tip of P3, thus decreasing the lever arm at the point of break-over. Wedge rails elevate the heels to provide relief of static tension on the deep digital flexor tendon during weight-bearing and allows for easier lateral movement. Adjustments using different sizes of wedge rails and frog inserts (for heel height and frog support) can be done without removing the shoe. The design of the shoe/pad unit pulls the pad away from the anterior sole, eliminating contact with painful areas of the sole, especially under the tip of P3.

Acknowledgements:

- Gene Ovniczek RMF & All at EDSS Inc.
- All at Total Foot Protection Ltd
- Mark Spriggs RSS
- Mike Williams Dip WCF
- The Liphook Equine Hospital
- John Walmsley MRCVS
- Pauline Williams MRCVS
- The Equine Veterinary Hospital Arundel

The EDSS Shoe

Patented Breakover Design for optimal placement on the foot relative to the tip of PIII.



Pre-drilled and tapped hole for attachment of the EDSS Pad.

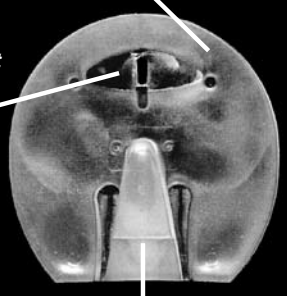
Rails mount to the inside of the nail holes to allow for easier medial/lateral breaker.

The foot side of the shoe is seated-out in the toe and toe-quarter regions to eliminate the chance of any sole pressure and to allow the pad to be pulled away from the sole at the toe. (This is an extremely important feature when treating severe laminitis!)

*These horseshoes have been patented by Gene Ovniczek in U.S. Patent No. 5,727,633 and by David M. Duckett in U.S. Patent Nos. 5,165,481 and 5,368,104.

The EDSS Pad

The EDSS Pad is made of a semi-transparent Urethane for durability and for visual access to the bottom of the foot.

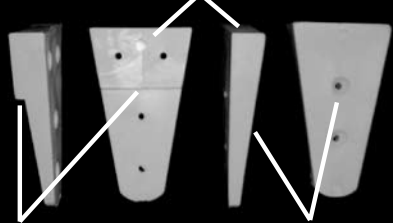


A stainless steel insert embedded within the toe portion of the pad makes for a firm attachment to the EDSS Shoe and pulls the foot surface of the pad into the seated-out area of the shoe, away from sole at the tip of PIII. (This is an extremely important feature when treating severe laminitis!)

A molded frog piece transfers support to the caudal part of the foot. It is also keyed for easily and firmly attaching the EDSS Frog Inserts.

EDSS Frog Inserts

The Frog Inserts are made of a slip-resistant Urethane for optimal durability.



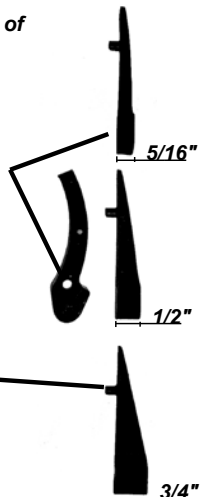
There are three (3) elevations of Base Inserts for a firm attachment to the EDSS Pad.

There are three (3) elevations of Cap Inserts with off-set screw holes for firm attachment to the Base Inserts when additional caudal support is needed.

Adjustments with the Frog Inserts can be made as often as necessary to meet the comfort needs of the horse.

EDSS Wedge Rails

There are three (3) Elevations of Wedge Rails that attach to the EDSS Shoe with a stainless-steel machine screw. The rails allow for easy adjustment of the tension on the DDF. The rails can be adjusted as often as necessary to meet the comfort needs of the horse.

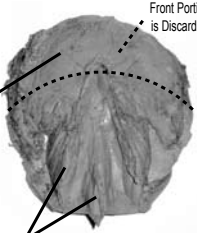


The Wedge Rail is held in place with the assistance of a tapered peg that is precisely fitted to the pre-drilled EDSS Shoe.

EDSS Sole Support Impression Material

EDSS Impression Material is a two (2) part material that when mixed together in equal parts will cure (set-up) to a durable, yet flexible rubber-like mold. Its purpose is to distribute support more evenly across the solar surface of the foot. It helps to increase blood flow, improve heel quality, and enhance the overall efficiency of the foot.

The EDSS Impression Material is a primary component when treating laminitis and founder with the Equine Digit Support System. The impression mold can be trimmed away from the most painful area of the sole to ensure a comfortable weight-bearing surface in the least painful part of the foot.




The Impression Material replicates the job of firm dirt compaction for support by filling the commissures and central sulcus of the frog.

Complete loading of the sole with Impression Material is important when treating Navicular Syndrome, contracted heels, and quarter cracks. The application differs slightly from the laminitis treatment by not trimming any impression material from the sole surface.

Instruction Materials

The EDSS Instruction Video is the most CRITICAL component of the EDSS treatment materials. This tape is an in-depth and comprehensive guide for hoof preparation, system application, parts adjustment and troubleshooting tips when using the Equine Digit Support System. It is intended for use by professional farriers and veterinarians. This essential instruction material will yield the most optimal results in the treatment process, and in many cases will help return the horse to a pre-disease condition.



There is an Instruction Booklet that accompanies the video for reference use in the field. Also included is a four page Work-Up form that aids in the diagnosis and record-keeping of each patient throughout the treatment process.