

# EVOLUTION OF THE 'HOOF-LINE'

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My name is David Farmilo, I have been shoeing horses for 50 years this year, and in the 1990's I spent 8 years as Head Farrier for Lindsay Park Stud (then one of Australia's most successful racing stables). Nowadays I specialise in hoof reconstruction and shoeing for performance, and I travel Australia teaching trimming and shoeing to the ringers on outback cattle stations, as well as running courses for horse owners to learn to trim their own horses' hooves.

After 50 years of shoeing I tell people attending my hoof care courses that I am still learning – and I really do mean it.



*Checking the balance with HOOF-LINE.*

Why is it that so much has been written on farriery, over hundreds of years, yet none of them really answer the question 'How do we correctly balance a hoof.' While an enormous amount of literature has been published by highly qualified people on horse shoeing technique, horse shoeing beliefs, preferences and trends, and hoof and leg anatomy, a lot of this is too technical for the average horse owner, is open to misinterpretation by farriers and can be ambiguous to the uneducated reader.

Over centuries farriers have invented numerous convoluted and complex horseshoes, complex gadgets to assist in shoeing horses and complex tools for measuring the alignment and/or balance of the horse's hoof. One would have assumed that with the huge number of horses before the age of the motor car, horses in past centuries would have been perfectly trimmed or shod. However, paintings, drawings, models and statues of horses in

times gone by often show incorrect hoof/pastern angles, with artists presumably sculpting or painting what they saw. As there were no radiographs and video equipment, the old timers had to rely on anatomy, intuition and results. The method of achieving a parallel hoof/pastern angle has been the topic of great debate, argument and discourse involving anatomy, biomechanics, physics, physiology and radiography as the sciences have advanced.

Customers ask me if there are simple books to explain horseshoeing, and I have to say 'No.' There are veterinary books on shoeing, complex books and articles on anatomy and bio-mechanics, new methods and fads publicised that come and go, new and scientific methods on measuring are developed, but farriers differ vastly on the definitively correct method to balance a hoof. There are still lots of problems out there – I have a website and I hear from people in every country with the same old problems – lame horses, back pain, long toes and Seedy Toe. Nowadays, shoeing techniques and resolution of hoof problems vary widely between farriers, between veterinarians, and also between each other, often resulting in confusion for the horse owner. Published reference point measurements are only ever stated as 'about' or 'approximately'.

In the farriers working day, theoretical knowledge needs to be able to be easily transposed to working knowledge. In a world where 'time is money,' farriers need to be able to shoe a number of horses per day using a reliable method to produce a predictable and satisfactory outcome for both horse and owner. The number of times the hoof is picked up needs to be minimised, the accuracy of achieving a correct hoof/pastern angle needs to be increased and the ability to duplicate a time efficient method of achieving a correct hoof/pastern angle also needs to be increased. With existing systems, all the vast technical knowledge available is often not helping farriers in the field.

In 1954, I was taught to shoe on Angorichina Station by Joe Love who was 80 years old when I was 14; 'Old Joe' had been brought up in the days of bullock and horse teams. Even now it is very humbling to realise that he had probably forgotten more than I could ever learn. He taught me

all the principles of horseshoeing which I still use to this day, yet he told me none of the reasons as to why those principles were formulated.

It took me probably 35 years to realise that my method of shoeing a horse to achieve a parallel hoof pastern angle was based on a precise method which I found it very difficult to teach to others as most of what I did was instinctive. When you think about it, the farrier knows what is a desirable end result, but how does he achieve it? Good evaluation, good judgement, a good eye and the ability to estimate accurately how much hoof to remove are all part of the attributes of being a good farrier.

It took me another 10 years to ponder how I could work backwards from the perfectly balanced hoof to teach others how to correctly balance a hoof without them necessarily having all the attributes mentioned. I felt that there had to be an easy way to balance the hoof without necessarily having anatomical or biomechanical knowledge and also to be able to teach this to others. This meant searching for a method that relied on external guidelines rather than internal knowledge.

My principles of horseshoeing have always been that when the hoof is correctly balanced, the front of the hoof wall is parallel with the pastern angle, the hoof shape is a mirror image of the coronary band, there are no flares in the hoof wall, and the hoof is stress free. (This was Old Joe's mantra on Angorichina Station nearly 50 years ago, and this has always been my mantra). The horses of my regular customers didn't have gait problems, I never used any specialised horseshoes



*Photo 1: Long toes resulting in distortion of the coronary band.*

because it wasn't necessary, and the hooves of the horses that I dealt with regularly didn't suffer any problems. Why? I assumed that it was because I always correctly balanced the hoof.

Instead of just working instinctively, as I had done for all those years, from then on I analysed and measured every horse and every hoof that I worked on to calculate what I was doing to end up with a correctly balanced hoof. As a result, I pinpointed what I now call 'David Farmilo's Centre of Balance' which is a reference point on the hoof behind the tip of the active frog and it is exactly the same whether it is on a thoroughbred, a Clydesdale or on a 6 week old foal. When a hoof is correctly prepared and perfectly balanced, the measurements are equal from 'David Farmilo's Centre of Balance' to the toe and from 'David Farmilo's Centre of Balance' to a line across the buttress of the heel.

I finally took the plunge and started teaching my method of trimming along with the measurement for 'David Farmilo's Centre of Balance' to my course participants and it was a revelation to see how easily they could follow it and achieve a balanced hoof. Time after time I got the same comment – "But it makes it so easy. Why hasn't someone thought of this before?" From there it was a relatively simple step to evolve a ruler marking 'David Farmilo's Centre of Balance' to first show how much hoof to be removed, and whether to remove it from the heel or from the toe, and then to double check that the hoof had been correctly balanced. I added a hoof pick to one end of the ruler, a stud spanner to the other, then trademarked my ruler David Farmilo's 'HOOF-LINE', and I also patented it; however, I do hope and firmly believe that it will indeed still grow from here. It is so heartening to hear from owners who tell me that they can never look at a horse now without checking to see if its hooves are balanced. This is the way it should be for anyone who has anything to do with a horse.

My teaching hoof model is a wonderful example of flares on the hoof and the resultant distortion of the coronary band (Photo1). The HOOF-LINE on the hoof shows the hoof is way out of balance because of these flares (Photo 2). Maybe this is why the horse ended up as a model?

Trimming methods vary considerably. Many farriers do not clean the sole or trim the frog when necessary. There is a huge amount of discourse on toe length. In all horses the natural hoof capsule is an even thickness all round. The natural hoof in its wild form is not square toed except in

drought conditions as a result of digging for water. The bulk of general horses are not wild horses, they are domestic horses in fenced and stabled areas.

My method of trimming the hoof is part of the 'HOOF-LINE' and is as follows:

Clean out all dirt and loose material from the under side of the hoof with the hoof pick then using a good sole paring knife remove only the dead flaky sole working from the frog out to the hoof wall. This will leave the sole concave. Now lightly trim the frog at the point to expose its active tip, place the 'HOOF-LINE' flat on the centre of the frog - the centimeter graduations will show the length to the tip of the toe capsule compared to the length at the heel in a straight line across the heel buttresses. In the finished prepared hoof these two halves must be equal distances from David Farmilo's Centre of Balance.

In most cases this first measurement will show that the front half is much longer than the back half, so in this case leave the heels untouched. Using the rasp or hoof nippers, trim the front half only to a level surface to suit either barefoot or shoe fitting preparation. A variation may be seen in the thickness of the hoof wall capsule at the toe, however this capsule should be an even thickness all round. This thickness is caused by flaring of the hoof in the toe area. If the hoof capsule is already the correct thickness at the toe, there will be no flares to remove, so leave it alone and go straight to the heels.

If the hoof capsule is not of an even thickness, place the foot forward on the knee or a hoof stand and by looking down over the pastern and coronary band to the hoof wall shape flare will be seen at the bottom of the hoof wall. Carefully rasp the flare away to copy the shape of coronary band at the front of the hoof only, and rasp up no higher than the nail clinch area. When this is completed, check underneath the hoof to maintain an even thickness of hoof wall capsule around the toe area. The 'HOOF-LINE' is then placed so that the indicator aligns with the point of the frog. When the hoof wall capsule is prepared correctly, the measurement in the front half will then be correct. From there, to achieve an equal measurement in the back half (to a straight line across the buttresses of the heel) the heels may be either left alone or lowered accordingly. If shoes are to be fitted they must finish at the heel buttress to maintain this correct hoof balance. When this balanced measurement is achieved in a hoof, the front of the hoof wall is parallel with the pastern angle, the hoof shape is a mirror image of the

coronary band, there are no flares in the hoof wall and the hoof is stress free.



Photo 2: Unbalanced due to long toes.

I estimate that in my career I have shod or trimmed well over 100,000 horses. Sadly, I find that 90% of lameness in horses is hoof related, and this is totally unnecessary. Most gait and back strain problems stem from incorrect trimming and incorrect shoeing that should have been corrected simply by correctly balancing the hoof. But if a horse isn't trimmed and balanced properly barefoot, then no one has any business putting shoes on it. I believe that every one who trims a horse's hoof has a duty of care to balance that hoof correctly.

I invite your feedback via my website [www.horsefarrier.com.au](http://www.horsefarrier.com.au) or email me directly at [david@horsefarrier.com.au](mailto:david@horsefarrier.com.au)