

# ASPECTS OF BALANCE

## Foundations of investigation

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Developing a common understanding is the basis of good communication, with good communications then being the key to progress.

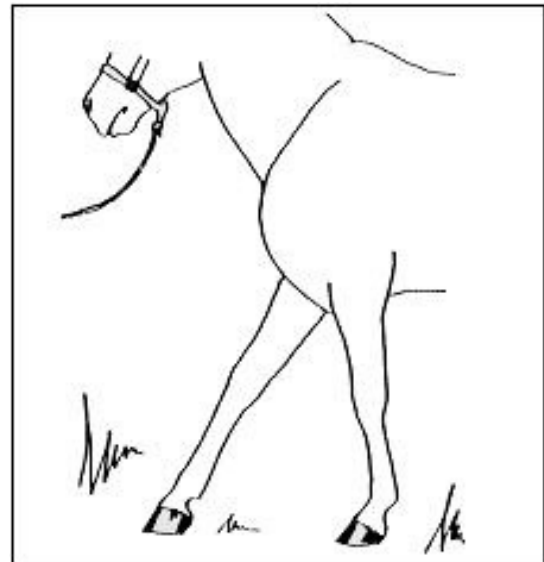
This being our aim some governing principals need to be agreed, so that we may start and talk the same language. The need for us not only to understand but also to be understood has never been so imperative, if our worth is to be fully recognised.

Establishing a universal guide to be used as a benchmark is surely the first step. Then by using that as a datum, we should be more easily able to recognise and understand how hoof shape is relative to the equine's individual make-up.

In previous issues I presented to the membership some theories and observations, hopefully drawing the readers attention to the concept and implications of the horse being right or left handed. Although common sense tells us these horses exist, the consequential effects have failed to be considered; yet I feel the evidence is there for those who look.

Symmetry in the horse may be desirable but is it normal? Handedness be it right or left is dictated by the dominance of one or the other side of the brain. Conceived in the subconscious, it is a state, which exerts control over the physical being of the animal. Apparently void of all reason, handedness can create natural and permanent characteristics. It is therefore essential we recognise this concept exists, as it forms such an integral aspect of hoof balance. Failure to recognise its existence would be to ignore the animals needs.

Asymmetry or handedness in the horse can manifest its self in a number of ways, like the adoption of a singular grazing stance, or having a preferred lead leg, or being able to bend more easily one way or another. This dominance of one side leads on to a greater asymmetry in the outline of the animal including hoof size and shape.



(Fig 1)

*The pointing stance associated with lameness*

*\* The pointing stance is where one hoof bears the weight of the horse, whilst the other hoof is placed forward but in a non supportive position.*

Injuries to a dominant limb can also change both body and hoof shape. Pointing, which for a long time now has been recognised as an indicator of lameness, is where the horse stands weight-bearing on one fore leg, whilst the other is rested. To the casual observer this may give the initial appearance of being the opposite of the grazing stance, in fact it produces a very similar effect. Whilst it is not clear that any individual horse through persistent pain or mechanical change will periodically alter its preferred lead, it is clear that a change in hoof shape, can occur after a long standing lameness. The weight bearing hoof becoming larger and flatter, whilst the other may become smaller and more upright. The right or left handed horse however, who habitually grazes in one particular manner will develop a mechanical imbalance, which may well act as a prelude to a pain related lameness, unless corrective maintenance is exercised, the variable scenarios being, unilateral contracted or club foot, pre-navicular or even laminitis.

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To understand these animals better, we need to be aware that the horse, which is predominantly one-sided, may very well move with ease during the asymmetric canter. The canter being sympathetic to the animal's one-sidedness, provided that is, it is allowed to lead with its chosen limb, which we can assume will be less physically demanding than its non-preferred lead.

However during the symmetrical trot, its own asymmetry may become more apparent, finding it less comfortable. It is then that the animal could be described as being mechanically lame or unlevel.

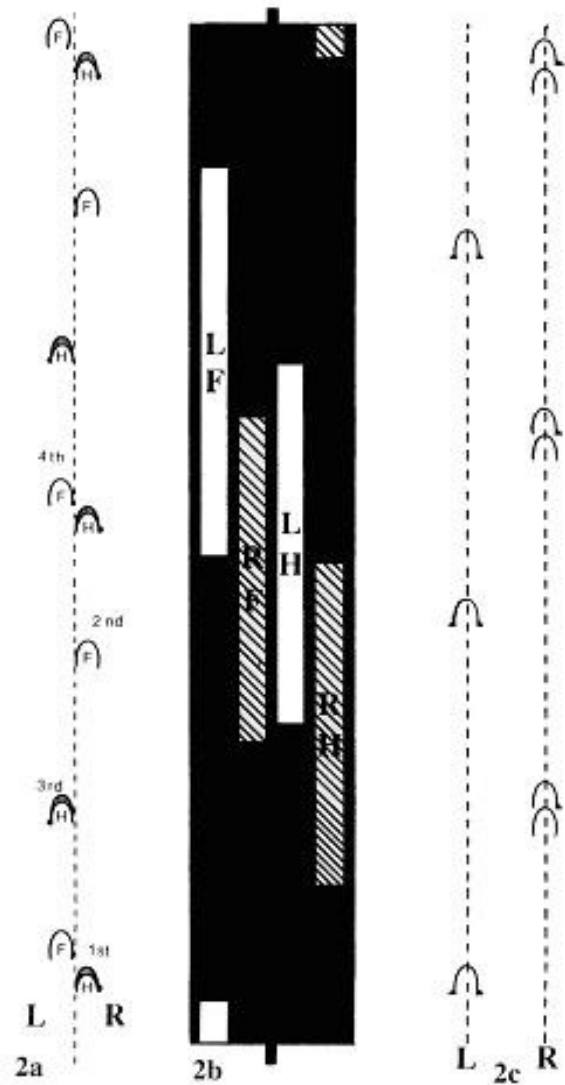
What has to be born in mind when dealing with these particular animals is that their preferences or habitual movements are subconscious acts. Therefore corrective trimming or shoeing, on a horse enjoying total freedom in a field, will be less effective, than on an animal whose problem has been recognised and appropriate work routines initiated. However it must also be remembered, that should both the efforts of schooling and farriery be discontinued, the condition would be retrogressive, reverting back to its inherent state.

The sequential phases of movement and the effects they have on hoof conformation almost defy comprehension, yet we as farriers are expected to understand and influence both. The problem is the hoofs form is constantly being modified, not only by growth and wear but also by the opposing forces, of the ground and the apportioned weight of the horse. This coupled with the additional influence of inherent behaviour patterns and the complexities of movement, created by the unique geometric and relative positions of each joint, make it almost impossible to perceive but let's try!

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**Information of special interest**

In 1845 an experiment was conducted by the French army, shoeing the near side cold, whilst shoeing the offside hot: the result being 1 per 58 shoes were lost on the left side, where as only 1 per 183 were lost on the right side! Were they mostly right handed?



**Fig 2a:** This diagram illustrating the pattern of footfalls during the canter, is drawn from photographic analysis (Muybridge 1887), off hind, off fore, near hind, near fore (left lead).

**Fig 2b:** Illustrates the time periods of each footfall (canter) as recorded by M. Marey 1878 (left lead): clearly show the leading hooves on the ground for longer periods, than the non-lead pair.

**Fig 2c:** Hoof-prints (canter) as recorded by Barrier and Lenoble du Teil, reproduced by M. H. Hayes 1893 and J. Wortley Axe 1905. Although it is not stated which is the lead leg, it does illustrate the asymmetry of this particular animal.