Buzz Words and Brainstorms to Decode Duckett's Dot

© Sue Bumbaugh

First published in slightly different form in Hoofcare & Lameness, Summer 1992

In his lectures, David Duckett FWCF provides a more detailed, accurate, and logical guide to horseshoeing evaluation than the traditional textbook guidelines because he identifies visible external reference points to use as locators of non-visible internal structures.

The internal structures of the horse's foot enable it to function and maintain balance. If the foot is not trimmed according to a plan that will coordinate the external reference points as defined by Duckett, the internal structures cannot function properly. When this happens, or when a shoe is placed improperly on the foot, the horse must compensate by compromising various anatomical structures, resulting in condition like underrun heels, sore suspensory ligaments, and injuries to the hindquarters or neck or other lameness problems.

Duckett opens a seminar by asking "What is a well-shod horse"? His answer to his own question was that we must understand the relationship of internal to external structures, and how shoe size, shape, and location on the hoof may be determined and the hoof trimmed. He carefully appraised a donated horse, videotaped it as presented, explained his procedure and terms, applied them to the horse and then re-videotaped the horse for a final evaluation with his students.

Duckett's "word association" terms for his system of external points on a horses' foot are the dot, the bridge, the dimples and the pillars.

"The Dot" - Duckett's Dot is a point located approximately 3/8" back from the apex of the horny frog on the average riding horse and is directly below the center of P-3. This measurement is proportionately greater or smaller as the horse's size varies, from a Shetland pony to a Shire. The Dot is a reference for determining the normal position of the wall at the toe, and gives an accurate indication of how long a "long toe" on a long-toed, low-heeled horse really is (See Figure 1 to the left).

In order to use the Dot to determine the natural position of the wall at the toe, Duckett's first pass at hoof trimming consisted of removing only the deadsole and trimming the wall level with the living sole.
Using dividers, Duckett placed one divider arm on the Dot and the other arm on the medial side of the wall using this distance from the surface Dot. He then scribed a mark across the toe (See Figure 2) and removed the dorsal surface of the wall down to the mark.

A vertical line through the Dot and perpendicular to the ground surface would exit the extensor process of P-3 and represent the center of P-3. (See Figure 3 to the right).

The vertical line would also intersect and be central to the following internal structures and functions:

1. Insertion points for flexor and extensor tendons;
2. Joint capsule nervous system functions related to motion and stability;
3. Terminal arch and circumflex artery.

"The Bridge"

The Bridge is also visible from the ground surface of the hoof and is located halfway between the toe and the bulbs of the heel. On the normal riding horse, it is approximately 3/4 to one inch back from the Dot. (See Figure 1).

- The Bridge is directly below the center of rotation of the distal end of P-2.
- The Bridge is directly below the junction of the navicular bone and P-3.
- The Bridge is the balance point between the anterior and posterior halves of the well-shod foot.
- Inside the foot, the Bridge bonds the bars to the frog and attaches to the "wings" of P-3, acting as a hammock or spring.
- After trimming, toe length was measured from the junction of the coronary band and hoof wall, to the ground surface. (See Figure 3).
- When the foot is balanced, the toe length will measure equally from the Bridge to the toe, and from the Bridge to the heel bulbs.
- Toe length, in turn, should measure half the length of the base. (See Figure 3 below).
"The Dimples" and "The Pillars"

The Dimples are located in the coronary band, inside the Pillars. The two Pillars run the entire height of the dorsal hoof wall and are points of weightbearing.

- On the ground surface, the Pillars determine optimum lateral and medial points of breakover. (See Figure 4 to the right, below).
- The Pillars may be seen as the optimum point of breakover, and used as a guideline for farriers to determine the amount needed for trimming a "rockered" toe.
- From a lateral view, the Pillars are in line with the doral face of P-3. (See figure 3).

**Practical application of theoretical terminology.**

- To illustrate how to use these external reference points, Duckett worked on a Thoroughbred gelding with underrun heels, sore suspensories, a sore neck, and sore hindquarters. (See Photo 1 at the end of this article). The gelding was uncomfortable and would not stand squarely, no matter how many attempts were made to stand him up. He was also reluctant to extend at the trot.
- Duckett's evaluation of the current shoeing made note of the application of traditional trimming and shoeing guidelines followed by most farriers. He then voiced his opinion that the horse lacked heel support, would benefit from improved breakover, and that anterior-posterior hoof balance according to Duckett's guidelines was needed.
- Since the previous trimming and shoeing had failed to provide the biomechanical support the horse's injury or lameness required, the horse had altered its natural posture as a compensation. The gelding's altered weightbearing and stance affected various parts of his anatomy, from his head to his tail, and made him uncomfortable.
- Duckett set out to return the feet to their normal function. He trimmed the front feet and, measuring from the medial side, placed the dividers on the dot, scribed a mark across the toe to determine the natural position of the wall at the toe. (See Figure 2).
- Duckett then pulled the foot forward and trimmed the toe down to the mark.
- Measuring the newly trimmed toe, Dave then transferred that distance to the bridge, so that the distance from the bridge to the toe was equal to the distance from the bridge to the bulbs of the heels (See photos 2 & 2A at the end of this article).
- According to Duckett's technique, the horse was not in anterior-posterior balance, and ready to be shod.
• **Reference Points and Shoeing**

  Duckett’s technique of shoeing provides plenty of heel support. He fits the heels of the shoe approximately 1/8” wider than the wall. (See Photo 3 at the end of this article). He also leaves plenty of heel length to support the foot and legs as?

  Duckett feels that fitting the heels of the shoe fully is a very important feature in any farrier’s attempt to support the foot’s weightbearing structures. The amount of heel support needed is determined by measuring the distance from the point of breakover to the bridge, which should in turn equal the shoe’s heel’s distance from the bridge. (See Figure 5 below).

  Duckett rockers the toes of the front shoes to maintain the natural point of breakover, but does not rocker the toes of the hind shoes, since the hind feet are not naturally rockered.

  Naturally, several shoeings and adjustments would be needed to help the gelding’s feet recover, but there were some immediate and profound changes. Once shod by Duckett’s method, the gelding was comfortable enough to stand squarely and was willing to move out at the trot. On videotape, the horse’s strides were compared before and after the shoeing, and found to be longer, freer, and more even.
Author's note: In my own shoeing work, I have consistently seen similar positive results when using these principles.

Author Sue Bumbaugh is an AFA Certified farrier from Cashtown, Pennsylvania.