FORM FOLLOWS FUNCTION

Sidegait

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In order to evaluate a dog in motion, one must develop a routine pattern of observation in order to take in all of the various parts of the dog that contribute to locomotion: the legs, the head, the topline (spinal column) and the body and often the tail, as well. You will not develop your eye for movement overnight. Therefore, you should avail yourself of every opportunity to study the dog in motion, be that at ringside or in the field or performance arena. Since we have been studying the "average" dog, you should try to study those breeds that fall within the 'average' parameters so that you can understand the basics of locomotion, even if your breed happens to be one with a unique gait. I have found that the more I study other breeds, the more I understand the important characteristics that make my own breed unique.

There are many factors at play when a dog is in motion. Where the feet land, what they do while in the air between leaving the ground and placing the foot back on the ground, the timing between the four feet, the position of the head, the movement of the spinal column and the movement of the body and the position and movement of the tail .

The reaction of each of these parts when the dog is in motion is in direct correlation with the other parts named and the overall structure and muscle condition of the dog in question. In order to understand motion as a whole, we must know how to evaluate the movement of each of these different parts and recognize the interaction of these parts with one another. We must concentrate on one part of the dog at the time until we can follow what is happening with the chosen part and how it interacts with the rest of the dog. How many times have we seen a dog on the down and back that is so busy looking up at the handler's hands, seeking the bait, that they nearly wrap their body around the handler - totally destroying any semblance of the way a well structured dog should move. If the judge cannot SEE the movement on the dog, then how do you expect them to JUDGE the movement of the dog?

Locomotion in the canid can occur at various speeds including the walk, pace, amble, trot and gallop. Since most standards describe the trot when speaking of gait, that is the speed upon which we will concentrate. In the trot, the diagonal pair of legs move simultaneously (right front and left rear/ left front and right rear). For a dog to take one full stride, each of the four legs must take one step where there is contact with the ground. The length of the stride is the distance covered by the dog's body between two consecutive touchdowns of the same leg.

When the dog is moving at a trot, the period of time one leg is on the ground equals the period of time the other leg is off the ground. (Example, front left on the ground = front right off of the ground). The primary function of the forequarter is to serve as a column of support over which the body is propelled by the hindquarter. The forequarter carries the majority of the weight of the dog (approximately 60%) due to the added weight of the head and neck. The mechanics of the hindquarter is simply to propel the dog forward over the pole vault action of the forequarters.

Before we get into the actual process of evaluation of movement, we must discuss movement itself. In the canine, there are two phases to movement: the striking phase, when the foot is on the ground and the swinging phase, when the foot is in the air. In order to get a complete picture of the dog in motion, we must look at the dog from the side (as the dog trots in a circle around the observer), from the front (coming toward the observer) and from the rear (going away from the observer).

Standing/Starting Position

In a well conformed dog, the swinging phase consists of the lift and acceleration of the foot as the leg is lifted up and thrust forward. (Figures 1 & 2) From a standing position the right foreleg is lifted a split second ahead of the left hind leg to begin the swinging phase. The right foreleg becomes the striking leg and is acting as a support for the body as the propulsion generated by the right striking hind leg which begins propelling the body forward.

As the right front leg arcs out in front of the body, it levels off somewhat as the speed of the leg decreases and the foot reaches out toward the ground. The right hind leg maintains its contact with the ground in its striking phase and pushes the body forward. (Figures 3 - 4) As this happens, the left rear leg is lifting right after the right foreleg and is beginning its swinging phase.

The striking phase of the right front leg begins with the contact of the toenails with the ground, followed by the toe pads and then the larger or communal pad. As the foot is placed on the ground this obviously ends the swinging phase for this leg and begins its striking phase. (Figure 7) The leg begins to move over the foot, thus shifting the weight of the body forward. (Figures 8 - 10)

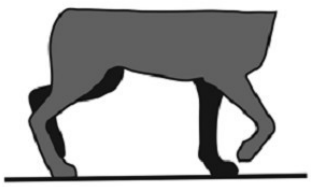


Figure 1

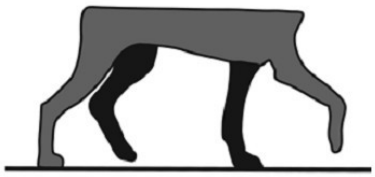


Figure 2

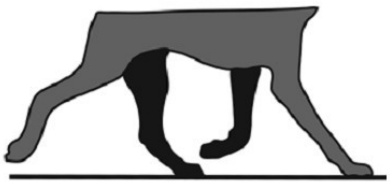


Figure 7

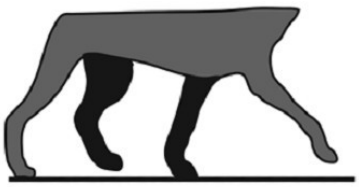
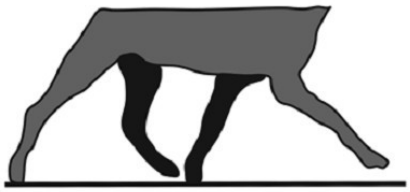


Figure 3



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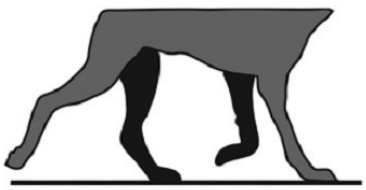


Figure 8

The period of suspension when all four feet of the dog are no longer in contact with the ground comes right before the dog places the leading foot back on the ground. As the foot drops toward the ground, the speed of the leg increases as it prepares to strike the ground completing the swinging phase of the right front leg. (Figure 5 and 6)

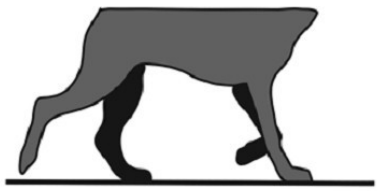


Figure 9

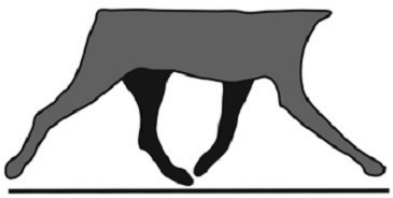


Figure 5

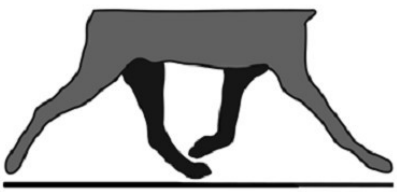


Figure 6

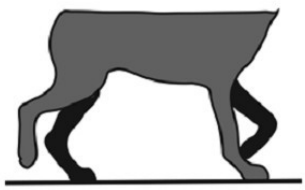


Figure 10

The final part of the striking phase of the right foreleg is the push off. As the front foot moves under the dog, it passes under the front assembly and extends underneath the body to grip the ground and start the cycle again. For the final thrust, the pads lift first, the toe pads and finally the nails dig in to the ground to give that final push, lifting the foot from the ground and into the swinging phase. (Figures 11 - 14)

Figure 11

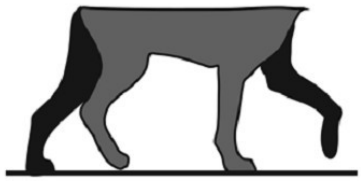


Figure 12

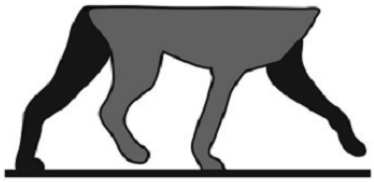


Figure 13

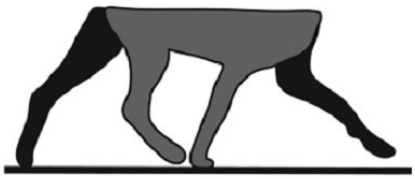


Figure 14

The swinging phase for the right front leg begins once the leg has lifted off of the ground. The shoulder blade rotates forward and the leg begins its forward swing. The leg should move forward with the foot low to the ground in a straight column of support. As speed increases, the legs tend to converge more and more to the center line. If a dog's feet eventually fall on the center line at a fast trot, this is termed single-tracking. (Figures 15-20)

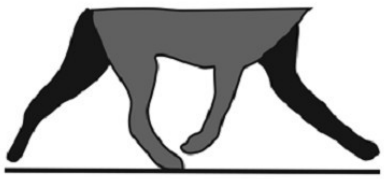


Figure 15

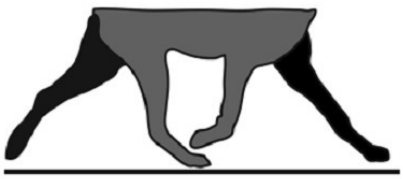


Figure 16

Figure 17

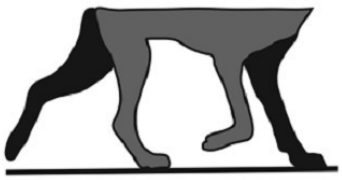
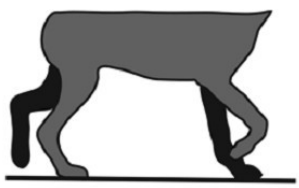
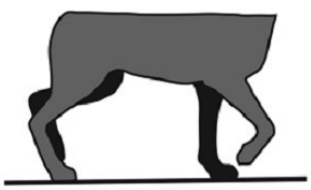


Figure 18





Now let's look at the action of the rear legs. (Figures 11 - 20) The rear leg first reaches under the body to strike the ground close to where the front foot is just leaving the ground. (Figures 11-15) During this phase, the thigh and hip muscles do the majority of the work. Next, the leg moves backward under the dog's pelvic assembly, using the hip and thigh muscles to generate most of its power. The leg then continues from under the hip toward the rear with a combination of the upper leg and the extension of the rear pastern providing the propelling force. (Figures 17-20) The rear pastern then completes the all-important follow through providing most of the final propulsion of the drive. The follow through of the dog's right rear leg can be seen in Figures 4 - 7.

This completes one full stride, where each leg has made contact with the ground. The speed at which the body is propelled forward by the legs remains constant. Now that you understand the sequence of the foot fall for one full stride you will better know what to look for when you are watching the dog from the side. Faults in movement most often occur when the dog is unbalanced in angulation fore and aft - usually with a more upright shoulder assembly (a scapula that is not very well laid back or a short scapula or a short upper arm, etc.) as compared to the angle formed by the articulation of the hip and the femur (upper thigh). Since 60% of the weight of the dog is concentrated on the front (due to the head and neck) the front assembly of the dog is of vital importance to the function of the dog as a whole. Most of this weight is flexibly carried by the forelimbs, using muscles and tendons and ligaments ONLY. The shoulder blade has NO JOINT CONNECTION with the upper chest and spine, but lies between and is fused to flat muscle (trapezius muscle) attached at the 3rd – 9th vertebrae. This is why there is so much more range of motion in the front limbs than in the rear (flipping, padding, paddling, crossing over, etc.). There are many reasons why a dog takes evasive action with his feet and it is not always due to differences in angulation as other things can come into play.

When observing the dog in motion, start by concentrating on the motion of the foot. As your eye gets accustomed to following the foot, you will be able to discern irregularities of movement. Once you are comfortable interpreting the action of the foot, only then should you follow the leg up to the elbow and beyond to the shoulder to observe the action in the rest of the fore assembly. Follow the same procedure with the rear, first concentrating on the action of the foot and then following the leg up to the hock and on to the hip. When observing side gait, you will again first concentrate on the action of the feet. First watch the front feet for several steps looking to see how far forward they reach and how close to the ground they stay. Next, check underneath the center of the dog to see if the back feet interfere with the front feet while trotting. You also want to observe the motion of the topline. Then switch your attention to the rear feet to check for forward reach under the body and follow through behind. You will learn to take all of this in very quickly in order to assess the dog in motion.