

Front End Conformation

an Analysis by [Liz Graves](#) ©2001



Understanding front-end conformation should be an important consideration in evaluating any horse before asking it to start working. The front end is important because as horse stands the front end can bear 60-65% of the horses' total body weight. While the horse is in motion, it is important that we try to help a horse distribute its weight more evenly to all 4 four quarters of the body. We do this by engaging the hind quarters and asking the horse to carry its self in as close to level a frame as its structure allows. A horses' skeletal structure and muscular structure is inherited. We, as horseman, need to be aware of our horses' strong points and their weak points and how it will affect their movement. Knowing what we can do to maintain the good points and strengthen those that may be weak and knowing an individual's limitation comes from conformation analysis. Hopefully giving us many years of good sound service from our horses.

Understanding the angles of the shoulder is extremely important, as that angle will determine the movement of the arm bone. We use 45 degrees as the ideal for basic shoulder structure. But when it comes to desiring a specific movement, a 45 degree angle may not get us the moment in the forequarters that we desire in a specific breed or gait.

As a general rule we will see an upright shoulder angle give more knee action; that

may be desirable in a racking horse, but certainly not in a Fox Trotter. A steeper angle can also give a rougher ride in that it is not as good a shock absorber to the front limbs. This can also make a horse raise and lift the front legs more times in the same distance than a horse with a lower angle shoulder that tends to reach out and forward more with the forelegs. A Tennessee Walking horse that does a true head shaking running walk will have a lower longer shoulder angle, while the Fox Trotter in general will more often have closer to the 45 degrees (if it is doing a true natural Fox Trot). Most often when a horse has been trimmed correctly the pastern angle will be the same or very close to the shoulder angle.

Also in observing the shoulder, look at muscles. Lack of muscle or development lends the shoulder to not having the support it needs to build and maintain strength in movement. But on the flip side; a shoulder with an over abundance of muscle can also hinder the freedom of movement to the scapula as well.

The importance of the arm bone (Humerus) is that it also has side to side movement not only foreword and back. This bone can determine how the elbow, knee and fetlock raise and lower and fold. The shorter the humerus the choppier the gait, the longer the humerus tends to a smoother gait being more reaching with the front legs. The lower the angle of the humerus, less the tendencies of high action of the front limbs, the steeper the angle the higher the horse can raise its knees.

When desiring a longer humerus we are looking for it to be at least 50% the length of the shoulder blade. When looking at the bones of the legs: are they set on straight? An example being a cannon bone not set straight and looking as though it has been set in the leg more towards sideways. Are the front legs set to far forward or back? Are the pasterns of the horse to long or to short? A long pastern tends to be more sloped and can stress the tendons and ligament running down the leg. A short pastern can put more stress on the front limbs tending to cause the horse to take more concussion in the front feet. Are the horse hoofs set straight or do they tend to toe in or toe out? Is the over at the knees or back at the knees? Does the horse has enough bone (circumference) to carry it's self or too heavy in bone so that it restricts a certain desired amount of action.

Any deviation from Ideal can affect a nice clean, straight lift and set down of the forelimbs. When this happens with over use, lack of correct conditioning or incorrect use this opens a horse up to developing an unsoundness that effects gait and performance.

Below are three pictures of front ends for evaluation. These are all side views so we will not be able to examine the width of base or how the legs bone are set on as we could from the front. Also being these are still picture we do not have the option of asking a horse to move forward, back or to stand square in front to be sure that this is truly how a horse naturally stands. So when utilizing still pictures always do so in the manner that what you see is what it is. Even though it may not be the true stance of an individual.

Front End One



The shoulder angle on this horse looks to be a few degrees steeper than a 45 giving a tendency toward a bit more lift in the front legs. Also notice that the pastern angle is almost the same as the shoulder angle. The humerus is a bit longer than the 50 % so at the same time we should see some reach or added length in this horse's stride.

The front legs of this horse are set on well not being too far forward or back. This horse's neck is set on well too. Not being too high or too low. The neck on this horse though does show some extra development in the upper half possibly saying that this horse has been held in a high more up-headed collection building up more muscles in this area. Being held in this position can reduce the amount of forward reach in the front legs. This also tells me this horse may very well be doing a ventroflexed gait such as a rack or stepped pace.

Front End Two



This horse has a bit lower shoulder than #1, about 46 degrees and the humerus is at about 50% of the shoulder length. This horse's neck comes out of the shoulder a bit lower and looks to be heavier-necked than horse #1. This horse's legs are not set back too far but the chest is more to being out on this horse possibly limiting reach in the front legs even though the horse has good shoulder angles and humerus length. This horse's neck is set on lower and is thicker at the root.

This can tend to force the horse into a ventroflexed gait if the head is pulled up and in. If it were to be collected from down and in we may see more building of the muscles on the upper half of the neck on these horses but it would also help this horse to be in a more level balanced frame.

The left front legs on this horse also look to be over at the knee and the hoof turned in. If this is truly the way this horse stands it will effect efficient movement from picking up and setting down forward and straight.

Front End Three



This horse has the steepest shoulder angle of all the pictures and looks to be more to 50 degrees. Also the humerus is a bit shorter than the 50%. This horse looks to have well aligned legs from a side view and set on well. The neck on this horse is set on higher but has a nice curve to the crest not showing under or over development.

This horse to me tend to be one that would go more to a ventroflexed gait naturally than the other 2. This shows that it could have the most lift and fold of the front limbs.

Overall these horse each look to have a nice balance of bone circumference for their size. They each show a good amount of heart girth as well lending to good take in and expulsion or air to the lungs. They also look individually to be rather well balanced in the front quarters as well.