Front End Conformation

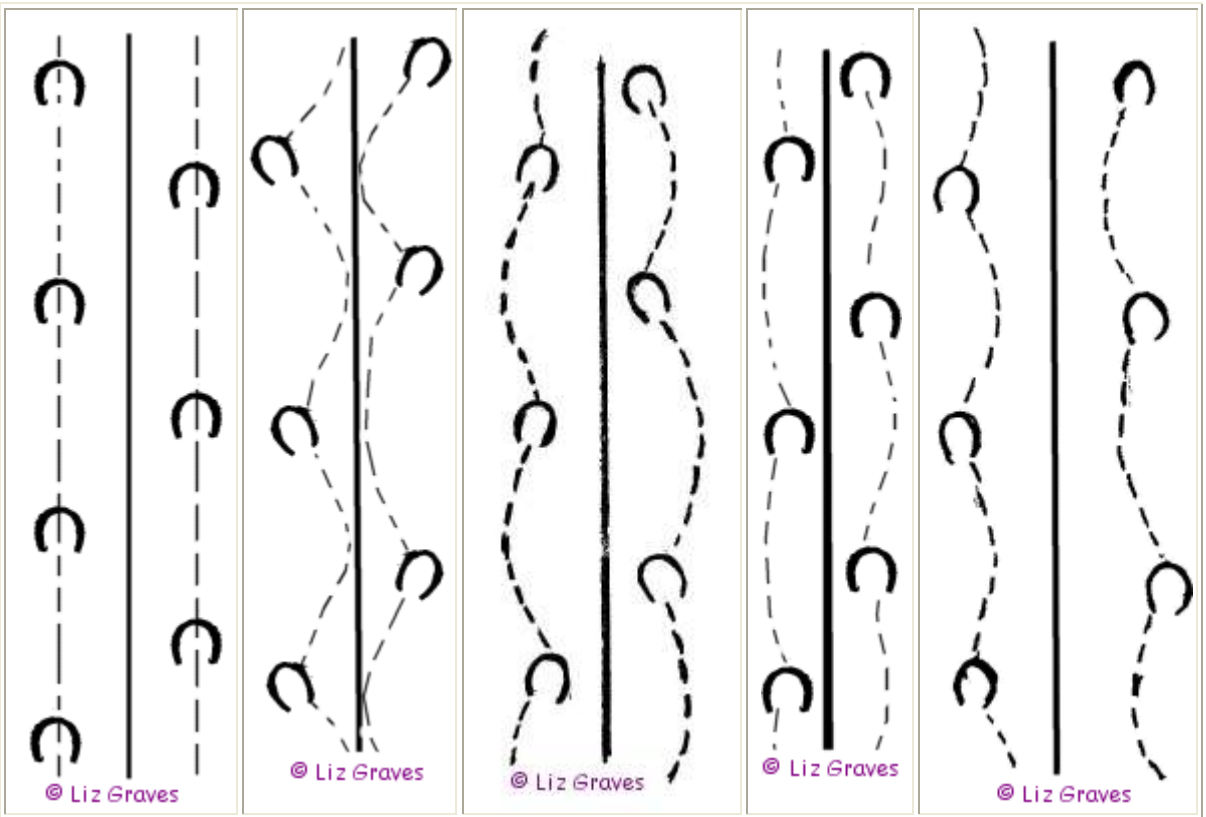
an Analysis by Liz Graves©2001

In this Evaluation I am going to cover a new area that is of utmost importance and I feel is over looked or taken too casually in all of the gaited breeds.
When I first glanced at these photos I thought I would not be able to use them due to the angle of the pictures. I felt it would be hard to do a good evaluation and put them aside. Very shortly, I was pulled back to them and saw what I am going to cover in this segment.

Before I continue I would like to point out that these photos may not represent the true conformation of each horse. I am not sure that these photos's represent the true way in which each horse naturally sets up. Many times this is not the true structure of a horse, but the way a handler has set the horse, however we will take advantage of this for the benefit of learning.

Regardless of breed, gaited or non-gaited any deviation from ideal in structure warrants our attention. It is important to know what the possible stress to each individual could be. Structure in the front legs can result in injury through lack of understanding, incorrect or over use. It is important to know any limitations an animal may have in use and through this an owner will be able to utilize a horse correctly and possibly keep a horse working longer and sounder.

Tracking



Ideal **(A)**	Toe Out or Splay Foot **(B)**	Toe-in or Pigeon Toed **(C)**	Base Narrow **(D)**	Base Wide **(E)**

In the diagram above we will look at the effects of how a horse can vary in tracking.

(A) The ideal is a straight line as shown. With the flight of the hoof making a straight line between hoof falls, it travels the shortest distance with the most efficient ground coverage. There is no lost ground in forward movement and no stress to soft or hard tissue due to miss-alignment of bones and joints.

(B) Toe-out or the maximum being splay footed: as shown above in the extreme, the hooves arc in, creating longer strides but loss of efficiency in forward motion. This is true with any deviation from ideal when a hoof is arcing inward or outward. This flight pattern can be seen with only one hoof as well.

One or both hooves toeing out or deviating as far as splay footed, can cause interference with the opposite front leg. In some cases a horse can cause hard or soft tissue damage by hitting the opposite leg. This type of tracking or stance can often be seen in a narrower chested horse. It is also not uncommon to see foals stand and move like this simply because the body

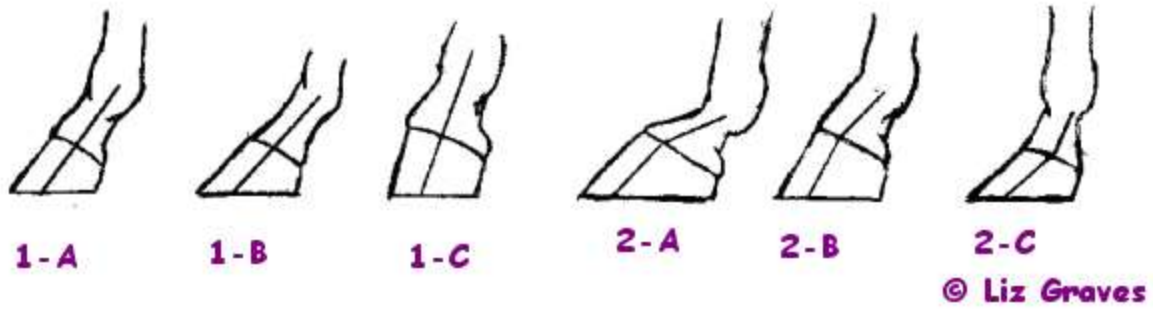
has not yet finished growing and widening out, hopefully the youngster will outgrow this and straighten out in the fronts. When toed out or splayed foot is present in the mature horse the joints do not move squarely, putting more pressure on the inside of the knee which can cause stress or strain to ligaments, tendons and joints. The toed out horse can develop splints both from striking the leg and from the extreme pressure to the inside, where the splint bone is located.

(C) Toe-in or maximum being pigeon toed can affect one hoof or both. A horse will arc out in this type of movement. This will cause a horse to make a paddling motion with the fronts, again with possible stress and strain to ligaments, tendons and joints. This type of tracking can pre-dispose a horse to development of side bone (calcification on the sides of the coffin bone).

(D) Base Narrow causes a horse to arc in as shown. This type of horse can also exhibit paddling in the movement of the front hooves. This type of tracking causes stress to be applied to the outside of the knees. The horse has to compensate for the loss of support squarely under his frame.

(E) Base Wide arcs in and can apply stress to the inside of the knees and again takes the support away from directly under the horse. Base wide and base narrow warrant watching for shoulder soreness with miss-use or over use.

Hoof Angles



Hoof angles on gaited horse are always a big topic of discussion. This is due to the practice of changing hoof angles to affect gait. One must be aware that any change of angles that deviates from the natural angle of the horse can cause added stress and strain, no matter how much one believes it may improve gait! ***It is just not worth it for the life and longevity of a horse.*** A horse will gait better being taught to carry itself in the gait it's structured for, rather than force a gait though unnatural angles. Unfortunately in some instances if you take away the unnatural angle, the gait is gone.

1-A shows an ideal. **1-A** through **1-C** show the correct angle for the structure of each horse. The hoof angle matches the pastern angle. Many times the natural pastern angle will also

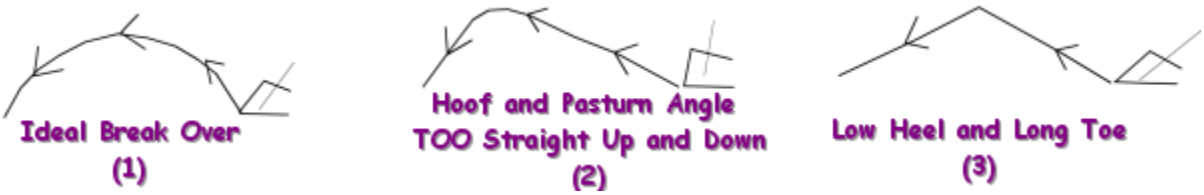
match the shoulder angle as well, but not always. One should desire a pastern angle that runs straight into the coffin bone, as to not stress and strain the
ligaments in these joints of the leg. **The pastern and fetlock are the shock absorbing system of the legs.**

1-B shows a pastern that is too sloping which can cause stress and strain to the suspensory ligaments, tendons and fetlock joint. **1-C** shows a closer too straight up pastern, the extreme of which could be seen on a clubbed hoof. This type of angle sends all weight of the fronts straight down into the hoof. This causes little to no shock absorption, depending on the degree. The heels of these horses tend to be longer to keep a straight line in the pastern to the hoof. Often these horses have a shorter pastern and tend to have a shorter, choppier gait. It is not uncommon to see a horse tend to have or easily get a contracted heel (also can be cause by improper trimming and shoeing) which in turn causes internal pressure to the soft and hard tissue inside the hoof.

Broken Axis as shown in **2-A** through **2-C** is when there is no straight line through the pastern continuing through the hoof. This can be downward as shown in **2-A** and **2-B** or upward as shown in **2-C**. The break in the angle being at the coronary band. This can be structural, but is also so very often seen in many of the gaited breeds due to specific trimming and shoeing to effect gait in an individual. Long toes with short heels being the most common trimming method used to break up an undesired timing of gait. In the case of a heel not growing, a wedge pad would be more desirable to correct angle to pastern. This is preferable over a turn back on a shoe which can create a hard concussion when the hoof hits the ground and can often cause sore heels.

In some gaited breeds it is very common to see **2-A** which is considered acceptable, to those breeds, as long as the pastern does not break below level at set down of the hoof. **In any other breed this is coon footed and should be considered as such in any gaited breed. It is a structural defect and does not support the pastern correctly.** The pasterns on these horses are many times too long. This can be a cause of broken sesamoids, stress and strain to the fetlock joint, flexor tendons, suspensory ligaments and to the joints between the cannon bone and P1, between P1 and P-2. In some cases owners are trying to correct this by trimming with a steeper angle hoof with a shorter toe and longer heel. These methods just create stress in a different way and it is common to see some horses knuckle over forward at the fetlock when the hoof starts foreword and set down (if it is a horse that does not have the long pastern but the pastern does stretch down to a broken angle at complete set down) creating again joint stress and change of gait that is not natural to an individual.

Break over

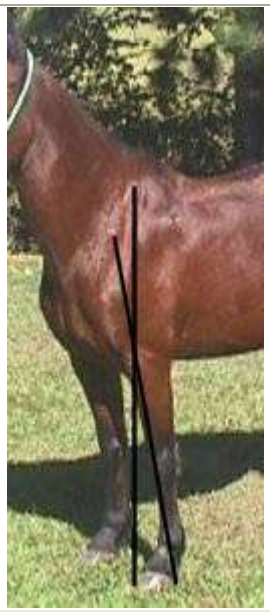


In the diagram above
#1 shows the ideal break over in which the horse makes a nice arc in the lift off and set down

of the hoof.
#2 shows the break over of a straighter up and down angle of the hoof where at the start of lift off it arcs and then drops down at the half way point sending the weight straight into the hoof causing greater concussion to the hoof and making for a short choppier stride.
#3 is the long toe and low heel. At the half way point the heel will start to drop because the toe has to lift off sharply and more too clear the ground at which point the heel will be over extended causing stress to the joints and soft tissue.

The photo of this gray horse shows the horse is standing wide based.

Notice the horizontal lines drawn at the bottom between the hoofs and at the top. This horse will arc in with motion of the hooves and can cause stress to the inside of the knees. The perpendicular line shows that this horse also looks to be over at the knee on the left front but not on the right front. This could be just the way the horse is set up. But this is how it would look on a horse that truly is as well, just all the time. It can also be seen that this horse is standing just slightly toed out.



In this bay horse notice the angled line of the left front.
This is to show that the horse is standing camped under. It does look as though this horse may have a long toe and low heel causing him to stand or move in this manner which in turn can cause a lot of soft tissue stress or injury over time.

	The palomino horse in this photo looks to be toed in on the left front and be almost pigeon toed. The right front looks to be straight. If this is the way the horse truly is in the left front that hoof could interfere and hit the right front due to winging in as the hoof arcs out in movement. The perpendicular line on the right front legs shows a nice straight well set front leg through to the hoof.

Some final notes to consider:

It is rare to see the ideal in any horse from front to back of the horse. This is what makes each an individual. The terms and standards for ideal gives us a starting point in evaluation. It is when a deviation extends to the point of detriment to a horse's well being if that individual's limitation are not recognized and utilized correctly that we must take care. It is then that we as the owners are short changing a horse of having the chance at a long useful life.

In some cases these deviations occur naturally from birth but often it occurs due to improper care throughout the growing years. Inconsistent or incorrect hoof care or lack of funds comes to mind first among other reasons.

I feel it is so important to get any corrective work done early in their youth but be realistic in what can be corrected. In some instances it can be due to a set in structure problem. Trying to correct some deviations can do more harm than good. Consult a veterinarian or farrier for help.

When trimming and shoeing do what is correct for the horse's natural angles, balance the hoof from side to side and lastly remove excess toe. Long toes are not necessary to achieve a natural gait when it is developed through strengthening and teaching a horse to carry its self in the correct frame for its structure, while carrying the weight
of tack and a rider.