

Horse Rider's Mechanic

Workbook 2:

Your Balance



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The gaits

Even if you are an experienced rider please do not be tempted to skip this section about the gaits as you may miss a 'light bulb moment'.

Firstly it may be helpful for you to understand a couple of terms from the science of 'gait analysis', which is the study of human and animal movement.

A 'stride' is a complete cycle of a limb's function. It starts as a foot touches down and ends when the foot is about to touch down again. A stride is separated into two phases, the 'swing phase' and the 'stance phase'.

The swing phase is when the limb is swinging forward through the air, the stance phase is when the limb is in contact with the ground and the body is moving forwards over the top of that limb.

The right hind and the left fore are in the 'swing phase' because they are moving through the air... and the left hind and the right fore are in the 'stance phase' because they are in contact with the ground.



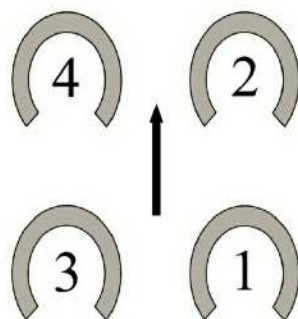
Walk

The walk is a **four beat gait**. While riding a walking horse you can hear the hoof beats *one, two, three, four, one, two, three, four...* This is because in the walk the four hooves of the horse touch down at separate, evenly spaced times. Starting with a hind hoof, then the fore on the same side, then the other hind followed by the fore on that side.

There is no **period of suspension** in the walk as there is in the trot and canter (suspension means when all four hooves are off the ground). This makes the walk the easiest gait to ride in terms of position and balance for the rider.

The footfalls of walk

In walk a hind hoof lands first, closely followed by the fore hoof on the same side. Then the hind hoof on the other side, closely followed by the fore hoof on that side. There is no period of suspension in the walk.



The rider feels first one side of their horse's back dip, then lift, as simultaneously the other side dips, then lifts. As the hind leg swings under the horse's body (as part of the swing phase for that particular leg), the back on the same side dips and the rider's hip lowers on that side. When the hoof touches the ground and pushes the horse forward (as part of the stance phase for that particular leg) the back lifts and the rider's hip on that side lifts simultaneously. This is covered in detail in the section **Riding the walk**.

It is a *symmetrical* gait (like trot, but unlike canter) because the horse carries out symmetrical actions with both sides of their body.

In this picture the left hind has swung forward and is in contact with the ground (it is starting the stance phase) the left fore is about to touch down (so it is at the very end of the swing phase and about to also start the stance phase). The right hind has finished the stance phase and is starting the swing phase and the right fore is still in the stance phase.



In this picture the left hind is starting the swing phase, the left fore is ending the stance phase, the right hind has started the stance phase and the right fore is starting the stance phase.



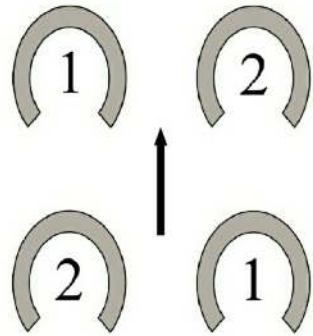
Trot

The trot is a **two beat gait**. While riding a trotting horse you can hear the hoof beats *one, two, one, two...* This is because in trot the four hooves land in diagonal pairs i.e. the front fore and diagonally opposite hind hoof land together, then the other front fore and diagonally opposite hind hoof land together.

There is a **period of suspension** (where no hooves are touching the ground) each time the horse 'jumps' from one diagonal pair to the other.

The footfalls of trot

The four hooves land two at a time in trot, one diagonally opposite pair, then a period of suspension, then the other diagonally opposite pair, then a period of suspension...



Riding the trot is more difficult than the walk (and some people believe more difficult than the canter) because a horse's back 'bumps' the rider almost directly upwards during each period of suspension, and as you know, what goes up must come down! Also a horse's back dips alternately on each side as the hind leg on each side swings forward under the body (during the swing phase for that particular leg). The rider has to learn how to 'absorb' all of the movement that is happening underneath them otherwise the trot can be very uncomfortable for both the rider and their horse. This is covered in detail in the section ***Riding the trot.***

Like the walk, the trot is a *symmetrical* gait because the horse carries out the same actions with both sides of their body.

Picture right - you can see the horse's hip dipping on the right hand side as the right hind leg swings forward under the body.



Picture below - you can clearly see the period of suspension as the horse 'jumps' from one diagonal pair of legs to the other diagonal pair of legs. This is what propels you upwards in the trot.



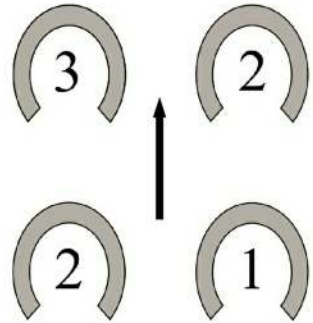
Canter

The canter is a three beat gait. While riding a cantering horse you can hear the hoof beats one, two, three, one, two, three... This is because in canter two of the four hooves land separately and the other two land as a pair i.e. first a hind hoof lands, followed by the other hind hoof at the same time as the diagonally opposite fore, followed by the other fore.

Then there is a **period of suspension** (when all four legs are 'gathered' together under the horse's body) before a single hind hoof lands again and so on.

The footfalls of canter

The stride starts as one hind hoof lands, followed by the other hind and diagonally opposite fore hoof which land at the same time as each other, finally the last fore hoof lands (which is called the 'leading leg'). Then there is a period of suspension and the stride begins again as one hind hoof lands.



If a horse is cantering on a circle they should be 'leading' with the *inside* (the one closest to the inside of the circle) foreleg. Think about how you 'skipped' when you were young where you had one leg landing in front of the other. When a horse canters they 'roll over' the last foreleg down (the 'leading' leg) and they use this leg as a pivot point as they begin the period of suspension. If you watch a horse cantering free (without a rider) they will usually choose to lead with their inside leg on turns.

This horse is demonstrating the period of suspension in canter.



In order for a horse to achieve the correct lead on a right hand circle for example they would need to start the cycle with the *left* hind hoof touching down, followed by the *right* hind and *left* fore together, followed by the *right* fore (followed by the period of suspension). So the 'leading leg' is the *last* one to land in canter.

Again while canter is more difficult to ride than walk, many people prefer it to trotting. The canter does not have the same direct 'up' 'down' motion as the trot and therefore a rider does not 'rise to the canter'.

Instead the rider has to learn to absorb the more rounded dips and rises as the back of their horse goes through a more circular ('loop the loop') motion. This is further complicated because a horse is usually moving faster in canter (unless the horse is very well balanced) so unless a rider can move with their horse in canter they will feel very insecure indeed. If a horse is cantering on a circle the centrifugal force (the same thing that happens to your clothes in the washing machine on the spin

cycle) further adds to this feeling of insecurity. How to overcome this problem and others is covered in detail in the section ***Riding the canter***.

Canter is an *asymmetrical* gait because the two sides of the horse do different things to each other (depending on which leg is 'leading').

This horse is cantering to the left. Her left hind and right fore are a pair. Her left fore is the leading leg and is about to land. Her weight will 'roll over' that leading leg and then the period of suspension will begin.



Both of these horses are also cantering to the left. They are slightly earlier in the stride than the horse in the previous picture. Their left hind's and right fore's are just about to touch down together.



Riding the walk

The walk is generally thought to be the easiest gait to ride because it is the slowest gait and there is *no period of suspension*. But you still need to make sure that you are riding it well and most riders can vastly improve how they ride the walk. As always it is important to start with the foundations.

Problems with the walk occur when a horse has not been taught to maintain speed in 'self-carriage' (see the **Horse Rider's Mechanic website article *What is 'self-carriage'?***). In this case 'self-carriage' means that the horse should maintain the same speed without having to be continuously slowed down by the reins or pushed on by the rider's legs.

When a horse is not walking in 'self-carriage' the rider might get into the habit of continuously fiddling with, or pulling on, the reins (if their horse is 'too forward going') or shove with their seat and continuously 'push their horse on' with their legs (if their horse is 'not forward going enough').

Teaching a horse how to move in the various gaits in 'self-carriage' is very important both for your riding enjoyment and your horse's welfare.

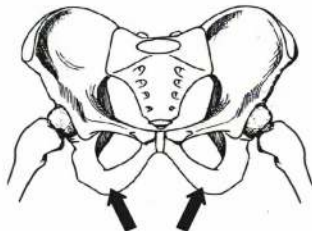


Improving how a rider rides the walk *initially involves learning to do less* for many riders. A rider needs to allow their pelvis to be moved *by their horse* so that in turn their horse can move their own back freely. This is simple to do once you know how.

What should happen...

- Your pelvis should move with the movement of your horse's back, in fact your horse's back should move your pelvis not vice versa.
- You should be able to feel your horse's back alternately dip on one side and then the other, this should be felt through your seat bones which are situated at the bottom end of your pelvis.

Your seat bones are located at the bottom of your pelvis. You must allow the movement of your horse's back to move them, rather than try to move your horse with your seat.



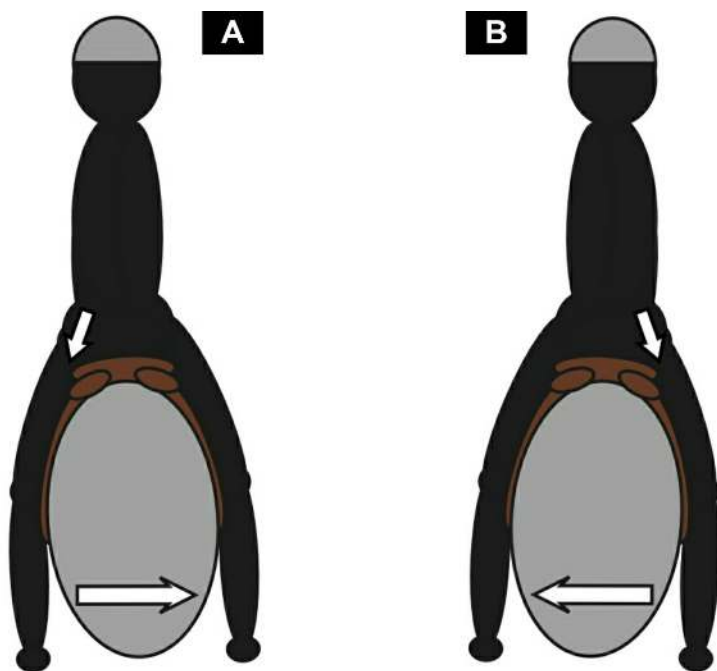
What should not happen...

- Pushing and shoving with your seat, this usually occurs if a horse is deemed 'not forward going enough'. Typically a rider tends to 'nag' with their seat and also their legs in this case.
- Bracing your pelvis against the movement of your horse, this usually occurs if a horse is 'too forward going'. Typically a rider tends to brace their seat and hang on to the reins in this case.

Walk lesson 1: Moving your seat with your horse in walk

This is a description of what you are aiming to feel, starting with the horse's *left* hind leg swinging forward:

- As the horse's *left* hind leg swings forward through the air (as part of the swing phase) the horse's back dips on that side.
- This is because as the *left* hind leg swings forward the belly swings from *left* to *right* (picture a).
- It may help you to remember this if you think of the hind leg 'kicking' the belly out of the way as it swings forward.
- As the *left* hind leg touches down and the horse's body moves forward over that leg (as part of the stance phase) the horse's back lifts on the left side as the belly swings back to the *left* (picture b).



- If your seat bones truly follow this movement you will feel each seat bone dip as your horse's hind leg swings forward under the body, the belly swings away and your horse's back lowers. Then you will feel it lift as the horse's hind leg touches down, the belly swings back and your horse's back lifts.
- It may help to think of your seat bones 'peddling backwards'.

If you have never felt this and you suspect that you have been moving incorrectly up to now it is time to do something about it.

Learning to move your seat with your horse in walk:

- As your horse is walking on a long rein completely relax your pelvis. If you have been pushing and shoving with your seat in the past your legs will probably have been joining in as well so try to stop them from moving and let them simply 'hang'.
- For now you are aiming to do the complete opposite of what you have been doing, you are aiming to stop any forced movement and you are aiming to 'listen' with your body to what your horse's body is doing. You can only do this if you stop trying to move your pelvis and legs and *let your horse move you*.
- If your horse stops moving forward as you become stiller it is because your horse is not trained to go forward properly in self-carriage and maintain that speed without constant 'nagging' reminders.
- If you are used to 'dictating' with your body you will at first find it difficult to 'let go'. Work on it because the rewards are immense, not just for you but for your horse.

- Once you have learned the correct feeling you can experiment with re-engaging some of the muscles in this area but for now you are aiming to do nothing while you learn to feel what your horse's back is doing.

For many riders this is the first time they have released their pelvis while riding and it can be a revelation for them and their horse.

Sensitive horses in particular start to relax more as they feel their rider start to move with them rather than against them.

As already mentioned, riders of horses that are deemed 'too forward going' tend to 'ride with the brakes on' by stiffening their pelvis. This simply makes their already tense horse even more so. These riders need to do the same as the above scenario, relax and let the horse's back move their pelvis. A horse that is tense also needs to be taught to walk in self-carriage but this time they need to learn to wait for the 'go faster' aid.

Learning to feel, through your pelvis, what your horse's back is doing can be a revelation for both you and your horse.



A great way to consolidate this lesson (but you will need an assistant) is to do the following:

- Call out left (or right) to your assistant each time you feel the left (or right) hind leg move under your horse and you feel your seat bone on the same side dip. Your assistant should see the correct hind leg swinging forward as you call 'left' (or 'right') and confirm that what you are feeling is correct.

Quick summary of this lesson: In walk, let any tension in your pelvis and your legs go. Feel your horse's back move your seat, you are aiming to feel each seat bone dip as your horse's hind leg on the same side swings forward through the air.

You are ready to move on to the next lesson when you can truly feel the movement of your horse's back through your seat bones/pelvis and if possible (because this depends on if you have assistant) correctly identify when each back leg of your horse swings forward under the body by feel alone.

An assistant can help by confirming what you feel. You can describe what you are experiencing and they can describe what they see. This process teaches you to be more aware of what you are feeling.



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