No Engagement of the Hindquarters in the Icelandic Horse's Tolt

by Lee Ziegler ©

True engagement of the hindquarters starts with a tightening of the abdominal muscles which work to tip the pelvis under, stretching and tightening the dorsal ligaments as this happens. The back rises, the hindquarters flex downward from the lumbo-sacral junction, and voila, a horse with engaged back/haunches under himself.

This is a "good thing" if you want to do fast starts and quick turns (the hind quarters work as a sort of coiled spring that compress, then shoot the horse forward) As the horse lowers those hindquarters this way, he also shifts his balance more onto his rear end, and less on his shoulders. This makes it a "good thing" for going down hills (or climbing them).

Fine and good -- an athletic way to carry the body. Something all "good horsemen" have striven to achieve for a very long time.

However, for gaited horses, when this position is achieved, there is a trade off. The tighter the dorsal ligaments become, and the more "engaged" the hindquarters become, the less elasticity there is in the back and the more a horse is likely to trot rather than do one of the easy gaits. The easy gaits require a looser use of the dorsal ligaments and more elastic use in the back muscles than the trot does. You can engage the hindquarters somewhat in a fox trot and still keep the gait, you can engage them very slightly less than the fox trot in a running walk and still keep the gait, but if you try to keep them consistently "tucked under" in a saddle rack or stepped rack, you will not be able to do that and keep the gait. (Not even mentioning the step pace here). For both the saddle and true rack, the horse's hind quarters need to flex up and down at the lumbo sacral junction, and when they flex "up" the engagement of the hindquarters is impossible. Also, to do these gaits, there needs to be a certain amount of slack in the dorsal ligament system to accommodate that up and down flex ... without it, no flex, and no gait. Simple as that.

So, to me, it doesn't make a lot of sense to "engage more" with the hindquarters on a horse that may be likely to be trotty -- on a pacey one, you indeed *need* to bring the back and hindquarters more into a less disengaged, more rounded position if you want to have an easy gait that is NOT a pace. You can balance a gaited horse, or help him find his balance, very well, and should! But you have to be careful how far you go in truly engaging his hindquarters and back ... Remember that the idea of engagement was invented for trotting horses by people who though gaited horses were defective. There was a reason for their thoughts! We know they are just "different" not defective trotting horses ... but if your end goal in riding was a horse that worked entirely and strongly from his hindquarters in total collection/engagement --- the gaited horse would indeed be defective, *IF* you were also trying to keep him in one of the easy gaits.

Of course, if you are doing a lot of hill work you do indeed want to bring them into some engagement -- and balance, so that they can go downhill without falling on their noses or spraining their shoulders. But, you do that at a walk, not in the easy gait ... or at least, you do if you want to survive the descent!

The hindquarters and back *define* whether the horse is collected or not. Without that raising/lowering going on, the horse is not in collection. And indeed, it *is* desirable, for more than a few seconds, in any horse, if he is expected to work off his hindquarters for balance. I want a horse to stay in that position going down a steep hill, for instance, because it prevents him from tipping forward on his nose and falling. And of course, if I am chasing a cow down a steep hill, I want that position sustained for two reasons -- to prevent the horse from falling, and to allow him to quickly change direction after the cow if the stupid bovine suddenly decides to dash off to one side. It is indeed sustainable for long periods -- but only if the horse is in condition

to do so. Obviously a horse fresh out of the pasture that has just learned to carry a rider without tripping over his own legs will not be able to do this for very long!

The back doesn't really undulate much at speeds over a slow walk (it can't, if it did the spiny processes would grind themselves to bits) What I meant is that the looser dorsal ligaments (which allow the back to sag downward somewhat) are complimented in the easy gaits by a certain tautness in the back muscles that help support the spine to keep it from grinding itself up, but that the two sides of the back work differently in the easy gaits than they do in a trot.

In the trot, one side stretches, the other contracts (very simplistic, it is a LOT more complicated than this) but in an easy gait, esp. the rack or step pace, this doesn't happen -- instead the back is relatively elastic on both sides. IN the rack (and fox trot) the reason the tail is a "shaky tail" has more to do with the action of the hind legs and the up and down "bounce" to the hindquarters caused by the action of the hocks than the extension of the motion of the spine. In an ordinary walk, where the spine does indeed undulate, the tail does not move this way, nor does it do so in a flat walk or running walk. Different use of the hind legs in those gaits.

In the rack (tolt) the hind end works up and down on the "hinge" of the lumbo sacral junction. It is not held in a sustained lowered position, and there is no stretch in the dorsal ligament system due to this. The swing of the back in the trot is not really connected to whether or not the dorsal ligament is stretched etc ... more like the belly getting out of the way of the advancing hind leg in practice. (Easier to move if that belly is alternately out of the way of the leg moving forward).

The spine is really NOT held rigidly in a horse with good schwung -- the dorsal ligament may be tighter, but the back muscles (l. dorsal) are actually MORE elastic than in a horse that is doing a rack or step pace. There are two systems working here -- ligaments and muscles. They complement one another. The up and down motion in the rack is not really due to being "tucked" under in the hindquarters in the same way a totally collected trotting horse would be.

There is no point in which the spine is flexed upward as it would be in a horse with truly engaged hindquarters. If you look at pictures of racking horses, you will NOT see a rounded/raised spine in the process.

The spine is held downward by those tighter back muscles that become more involved as the dorsal ligaments go more slack. There is no real big push forward; there is more of a jump forward over the front leg in support.

The lack of this really strong engagement is given away by the signature upward flip of the hind hoof in horses that are racking. If that energy was being put to use to thrust the horse forward, the hoof would not flip in the same way. Has to do with release of tension in the tendons in the hind leg, which also play a huge roll in engagement (or lack thereof).

The hind leg can come WAY forward without any engagement of the hindquarters, just look at the typical big lick TWH. So, no, it is not going to be the same thing as true engagement of the hindquarters no matter how far the hind leg is reaching forward .. If the back is not raised/rounded and the hindquarters are not at least slightly lowered from the lumbo sacral junction, there is not true engagement, either.

As an example, think of Groucho Marx walk (this image borrowed from Deb Bennett) He sort of squatted down, with his fanny in the air, and took enormous steps while flicking his cigar. Hollow back (human) still lots of reach in his legs for those steps. This is the ultimate image for me of how a BL horse moves, BTW.

I think it would be better to forget about how long or short the step is from the hind leg (or even how far it is under the body) and look at the entire horse as he moves (video, slow motion) to see

what is happening in the back. Failing that, ride them bareback and be honest about what you feel under your seat.