THE DRESSAGE TOOL BOX

Use these lessons on the training scale and on the biomechanics of horse and rider to improve your learning and teaching.

By Stella Otto

Last month's article on the Lingn.nl Dressage Tool Box Symposium in Petoskey, Michigan, discussed learning styles and the principles of teaching. This article reviews the training scale, the biomechanics of the horse and rider and how to use them in your teaching and training.

The Training Scale

Large banners of the U.S. Dressage Federation's (USDF) version of the Pyramid of Training hung on the wall to be referred to often (see p. 32 or go to usdf.org). In her "Textbook Tool Box" lessons, organizer Karin Offield stressed that riders keep in mind the foundations of rhythm and relaxation. The horses in the symposium were schooling Second Level or above. The basics of rhythm and relaxation were to be firmly in place so the next step—connection—could become possible.

Offield addressed connection by asking, "The connection is not a process that comes eventually. You either have a connection to your horse's mouth or not. The horse doesn't care if he has a connection with you. It is our job as the rider to give him a connection to our hands—to the circle of our aids. Eventually, you will find the horse looking for, wanting and offering that connection." To check the quality of the connection, she suggested visualizing a tiny person standing on your rein. If the rein is slack, the tiny person falls off.

Offield also emphasized the importance of straightness and riding in shoulder-fore. She showed us how shoulder-fore is not as pronounced as shoulder-in. When a horse wants to bring his haunches to the inside, straighten him by moving his shoulders ever so slightly to the inside. The rider just brings the shoulders slightly more in line with the hindquarters. "Do this adjustment with your hands," said Offield. "Don't move the hindquarters with your legs; they have other jobs to do. The hindquarters will follow naturally. Be diligent. Be a perfectionist. Make everything you do on your horse consistently simple and clear." She reminded everyone of the words along the sides of the USDF Pyramid of Training: "Physical development through progressive conditioning" and "Increasing throughness and obedience."

In "Collection: How to Create It and How to Maintain It," Glenda Warner urged us to try an unmounted exercise that would demonstrate the training scale's directive that suppleness precedes connection. Bend forward, arms hanging down. Allow gravity to bring your hands toward the ground; don't force them. Observe. How far do you reach? Now, with both hands, reach behind your ankle and hold a moment. Repeat with the other ankle. You should reach farther now without forcing the hands down. So it is with the horse too: soft, relaxed lateral bending results in a rounder topline. Through his rounded back and neck, the horse seeks the rider's waiting hands, thus connecting the horse's hindquarter energy to the rider. This longitudinal roundness of the horse's body is the connection described in the training scale.

Gary Miller

G. Randall Goss

TOP (from left): Instructors from the symposium included Tonya-Grant Barber, Karen Waite, Beth Baumert, Kim Aikens (seated), Karin Offield, Bonnie Dupue, Glenda Warner and Nancy Baker.
RIGHT: Karin Offield instructs Zoya Malitsky aboard A Wiccan Way.

Several of the training scale's elements—connection, impulsion and straightness—were put together in Dr. Kim Aikens' lesson on "Developing the Canter Pirouette." The riders started by riding 10-meter circles at each letter. "It is key that the horses maintain the same stride and energy all the way around the circle," Aikens emphasized. "If the horse does the 10-meter circle well, go down to eight meters. Keep the hind leg quick and active, but the horse should not go faster. It is important that the correct rhythm of the canter be maintained at all times as well as forward thinking energy and impulsion."

Participant Tracee Horn rode her Friesian sport mare, Isabella, for the lesson. Aikens encouraged her to straighten her horse using shoulder-

Photos by G. Randall Goss

TOP (from left): Miles Hayes, Tonya Grant-Barber, and Connie Hilgemaun during their mounted lesson.
LEFT: Karen Waite, symposium lecturer and Michigan State University professor, takes time around her own lessons to audit other sessions.

fore, because Isabella liked to move her haunches in a bit and try to collect a few steps. If they got bogged down, going out and straight in medium canter refreshed the tempo.

Miles Hayes riding Hanoverian, GT Experience, needed a different approach. He was fairly straight but needed more lateral suppleness. So they tried haunches-in toward the end of the circle along with an occasional tap of the whip to maintain more jump so the canter didn't get sluggish.

Aikens said it is important to understand and apply the proper aids. The rider's weight should be on the inside seat bone. The inside leg at the girth keeps the activity of the canter and, along with the inside rein, helps maintain the horse's bend. It also keeps the shoulders from falling in. The outside leg lies just behind the girth and helps keep the hindquarters from falling out. The outside rein helps initiate and control the turn by controlling the outside shoulder. Remember also that the inside hind, which is the pivot leg, should be picked up in the correct rhythm of the gait. The horse turns around the inside hind leg. Aikens summed up the lesson saying she felt canter pirouette is one of the most difficult movements.

Biomechanics of the Horse

Dr. Hilary Clayton, BVMS, PhD, MRCVS, holds the McPhail Dressage Chair in Equine Sports Medicine at Michigan State University. She shared a presentation on "Feel & Timing: Biomechanics of the Gaits." She defined gaits as recognized by the sequence and timing of the footfalls. The walk, she noted, is characterized by always having one or more hooves on the ground with no moment of suspension. The four-beat walk has oscillating phases of three legs on the ground, two legs grounded, three legs, two legs.

"Leaping" gaits, the trot and canter, are characterized by a suspension phase. They are more difficult to sit as the rider is thrust upward in the suspension and is slightly out of phase with the horse's motion. A longer moment of suspension occurs when the horse pushes off with more vertical thrust. This offers more scope for lengthening.

Trot is a two-beat, diagonal gait. The legs act as springs with the body lowered in mid-stance and rising in the lift-off and suspension. To effectively lengthen the trot stride, the rider should apply the aid at the start of this upward phase.

The canter's rocking motion is created by the back-to-front sequence of

footfalls. The rocking is more exaggerated when the horse is on the forehand and less so as collection increases. Timing the half halt is especially important in canter. Applied early in the stance phase (no later than the second beat) it will produce more engagement and lightness. For visual learners, this coincides with the mane coming up. A late half halt after the second beat will put the horse on the forehand.

During Dr. Clayton's mounted session, "Transitions and Footfalls," riders Karin Offield on Marijke, a Dutch Warmblood mare owned by Nancy Williams; Tonya Grant-Barber on Pocket Change, a Canadian Warmblood; and Zoya Malitsky on Tzug, a Dutch Warmblood, focused on how to feel or observe their horses' footfalls and use that to improve performance. First they verbally counted the horses' steps as they touched ground in the walk.

Once this was confirmed, Dr. Clayton pointed out that the most effective timing of the aid to influence the leg in its swing phase is just before the horse's leg lifts off. "So," asked Dr. Clayton, "how do we know when the hind leg is coming off the ground? [When the rider's] hip starts to fall, [the] leg aid will be effective in walk."

Visual learners often glance down at the point of the shoulder and watch how it is moving to follow the footfalls. Dr. Clayton noted "the shoulder doesn't rotate from the very top but rather from a point about six inches or so below its top point. The motion is most visible at the bottom of the scapula." The point of the horse's shoulder rotates maximally forward when the front hoof contacts the ground. Then the horse's wither rises when the front leg becomes weight bearing. After a front leg hits the ground, the opposite hind leg will be next to hit.

Dr. Clayton said that the half halt is applied most effectively when the inside hind leg hits the ground. It was pointed out that you don't need to half halt every stride, just in rhythm every second, third, fourth stride or whenever the horse needs to rebalance. Offield noted that her very sensitive mare did best with only a very small, toned down half halt every fourth stride. This produced the most spring in the mare's stride. Malitsky felt her mare improve as her own timing improved. Dr. Clayton suggested using what she called a "feed forward" mechanism—time your aids according to how the horse will react.

Gary Miller

BALIMO™ instructor, Nancy Baker, assists Tracee Horn with mat exercises to help her riding position, as auditors look on.

Glenda Warner, USDF "L" Education Program graduate, commenced her instruction session on "Straightness and Balance" by pointing out two important points about the horse:

1. Horses are born with asymmetrical bodies. Roughly 90 percent of horses have one leg slightly shorter than the other. Typically the left front leg has a low hoof angle and the right front a high angle. Consequently, the horse puts more weight on the shoulder under the lower hoof angle. Asymmetries are further found in the jaw. The mandible with the low bite plane receives more "weight" and asymmetrical weight distribution through chewing forces.

2. How the horse stands, weighting the lower heel, will slightly effect the tilt of its head when the teeth slide back and forth over each other. Because the table of teeth may not be level, the horse may apply more forceful pressure on the lower side of the jaw surface and tip its head to one side. This may result in the horse pulling on one side of the bridle. Both the leg length disparity and the unlevel tooth arcade can hinder a horse's ability to travel straight due to loss of balance onto the lower side.

As the horse moves, it uses its core in a left-right swinging motion. The barrel needs to be free, rolling rhythmically side-to-side, to move out of the way so the horse can place its hind foot under its center of gravity.

Warner equated the rotating barrel of the horse to a tanker truck of liquid turning a corner at high speed. As it turns, the liquid will slosh to the outside. If turned abruptly, this fluid dynamic can give the horse the sensation that it will lose its balance and fall. Of course, it doesn't want to fall. So instead, it will brace to stop the fall rather than freely swinging its barrel.

As riders we can stop the tense bracing by preparing for a smooth, supple bend throughout the horse's body well before riding through a corner or turn. By sitting with our core deeper in the saddle and placing our inside seat bone slightly more ahead, we can assist the horse's barrel in moving to the outside by using our inside leg to "smear" his barrel toward the outside of the arc.

Additionally, this weight distribution of horse and rider allows the horse to deeply engage his inside hind leg under the weight load that he is carrying. Supporting with our outside leg will prevent the horse's barrel and outside hind leg from swinging too far out. The outside hind stepping under the horse and rider's weight will provide stability and increased energy efficiency as it collects under the horse.

Biomechanics of the Rider

Narelle Stubbs, physiotherapist and co-author of *Activate Your Horse's Core*, began her lesson, "Biomechanics of the Horse and Rider Unit" by explaining that physical dysfunction issues and instability can create faulty movement in the horse. How the horse is able to activate its abdominal muscles will affect its back curvature. If these muscles are weak from foaling, colic surgery or lack of condition, it will be harder for the horse to round its back. A canter pirouette can be affected by poor pelvic control and lack of propulsion. The pelvis may collapse toward the front due to lack of strength in the stabilizer muscles.

Focusing on the human part of the horse-and-rider partnership, Stubbs noted, "No one is perfectly symmetrical. It is not uncommon to have a one to one-and-a-half-centimeter leg length disparity." Her goal was to give the riders tools to gain neutral symmetry. After observing Malitsky and Offield warm up, she applied dots of physiotape to their front hip protrusions and the dimples at the back of their pelvises. Their assignment: Ride with the aim of getting the two spots level, which would be neutral or balanced.

Next, with a level pelvis, they were asked to try to bring their legs back a little bit so their body was vertically aligned. "If you are right-handed, your left leg is usually more stable and has more hip extension," Stubbs noted. "Your right hip is typically tight and does not open as easily. You will notice that your buttock will come off the saddle on the side where it is hard to bring your leg back. Your seat bone on the

other side will drop down, which will give the wrong message to the horse."

Other ramifications of a rider's body tightness include a tendency to set the hip and move above it. The rider may compensate for a lack of hip movement with excess spinal curvature. If you are right-handed, there is more give-and-take with that hand. Your left hand does not give enough because of the twist in the body. Unmounted exercises can help to develop more hip flexibility.

BALIMO™ instructor, Nancy Baker, added several exercises to our toolbox. After observing riders Tracee Horn and Malitsky, Baker commented, "Tracee knows she wants her horse forward, but her body is chasing this very forward horse while her hands try to contain him. Tracee needs to get her lower leg under her more, but a tight hip flexor does not allow this." She then had the riders dismount and perform targeted exercises on a floor mat that would help them in the saddle. (Go to DressageToday.com for step-by-step instructions on these specific exercises.)

Once the riders remounted, numerous changes were evident. Horn seemed much freer in the shoulders with a more open chest and hip. Her elbows were more bent and hinged. She could feel she was following the horse better and indicated that her legs felt more even and wrapped around her horse.

By Sunday afternoon our tool boxes were overflowing. Happily, everybody had added much to their riding and teaching repertoire—awareness of learning and biomechanics, new ways to feel and see the movement, timing of the aids and so much more.

THE TOOL BOX VISION

My vision is that a series of Tool Box Symposiums can build synergy within regions across the country. The goal is to see this lead to a two-year pilot program of national training centers for amateur education and for young horses and riders.

To schedule a Tool Box Symposium in your region, contact me at info@offieldfarms.com and I will help you build your tool box, a two-day event that brings you closer to your sport and your equestrian goals.—*Karin Offield*