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All English Tack

A discussion of the fit and function of the noseband in relation to the skull of the horse and the physiology.

Comfort and control, the effect of nosebands **on the horse and biting.**

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Whilst biting is the central essence of control, the noseband is the refinement of that control and so is an essential piece of equipment in the riders arsenal. To keep the theme of comfort for the horse whilst keeping control the noseband's influence on the bit must be understood and used effectively. Nosebands are a very influential part of both the comfort of a bit and the control that bit gives you.

The anatomy of the horses head is complex, it has very little padding or covering as it has no large scale muscle or fat deposits, the bone and nerves are just below the surface and directly against the bone of the skull creating a lighter structure but an easily damaged one. The horses head has very little clearance between the windpipe, the esophagus and the hyoid bone in the base of the jaw, the tongue is attached to the forward part of the hyoid bone by a muscle and the hyoid is attached to the sternum through serratus and pectoral links. This domino system gives us an idea of how restriction of one part of the horse can effect the complete going of the whole body. This link system goes through the serratus group and effects the rib cage and neck of the horse. On the head the nerves of the skull are near the surface emerging through foramen on the skull at strategic places on the head, the trigeminal nerve and the tempomandibular nerve follow the skull down to where they divide over the cheek and then follow the zygomatic ridge down to the nasal area, the mandible nerve extends down through the lower jaw and enters the bone just above the horses chin. The facial muscles of the nose and lips originate in the upper part of the skull and run down across the jaw and nasal passages giving mobility to the lips and face. The poll or external occipital protuberance lies above the atlanto-occipital joint which serves as the attachment site for the nuchal ligament and this area is crisscrossed by muscles that control the ear and head movement, the browband and headpiece join at the centre of the ear depressing muscle while the headpiece itself running at the back of the ear with the noseband attached either below it or above, lays over the abductor of the ear and also the raiser, with the capitis muscle behind it which nods the head, the innervations to this area is less exposed but still has little protection there.

A horse has three pairs of salivary glands which service the action of chewing and swallowing along with the tongue which is a muscular accumulation of tissue with nerves, blood vessels and salivary glands as well as the taste buds. The tongue is designed to move

food around in the mouth and to make a straw like tube for the horse to drink through; horses produce about 10 gallons of saliva per day so they need to constantly be clearing their mouths even when not chewing. Why is this of any interest to a person fitting a noseband? Well, nosebands fitted wrongly or with little thought can interfere with all these systems and also the function of the head. A horse must be able to swallow all the saliva produced to enable him to breathe effectively and keep his jaw relaxed, the act of swallowing allows a horse to accept the bit and chomp softly without opening the teeth and lips, this produces the relaxed and soften jaw that gives good contact through the reins to the hand thus we have a soft control.

“ Nosebands of any type must not be adjusted too tightly, without exception. The jaw must remain mobile and breathing unimpeded; otherwise tension will build that transfers to the entire body. Riding with hands that are too hard, and continuously influencing the horse with overly strong rein aids have a negative effect on the horse’s entire body.” (Tug of War, Gerd Heuschmann)

Varieties of noseband were designed to aid the control of the horse and to enhance the action of the bit, this is also true of any curb attachments such as chains or straps. This control is achieved by using a noseband that corrects deficiencies in the conformation of the head or learned responses from the horse, we call habits. Choosing the right noseband for the problem or habit that is being corrected is a subject that has had little discussion, so what noseband are you able to purchase to help with a problem of this sort and how do they work to aid control whilst not making the horse uncomfortable?

Firstly though, no noseband should be used until the horse’s teeth have been checked and the mouth balanced. This is extremely important as more damage may be done and pain caused by the noseband being tightened over bad dentition than with the bit. If a horse has sharp points on his teeth or ramps and waves he may bite his tongue causing sores or ulcers in the mouth. Another issue may be that the alignment of front and back teeth may need adjustment, poor alignment not only means the horse can’t chew his food properly but the teeth angle may alter the action or fit of the noseband making it uncomfortable or even painful.

The fit of any noseband should consider the individual horses measurements and not just go by the size on the packet as all manufacturers have a different size chart they work from, so measure your horse from lip corner to lip corner over the head and 1”below the bottom of the cheekbone around the circumference of the head to give you an idea of the horses head size, your headstraps in total should measure the same length, as this will give you a buckle position of half way up the strap. Drops, Grackles and Levers are done differently.

So, what nosebands are available to use?

Cavesson, Cavesson rope, Cavesson Worcester, Flash, Crank, Drop, Grackle (figure 8), Mexican grackle, Lever (crescent), and Kineton.

Let's start with the simplest and most common : The Cavesson, designed to stabilize the bridle and for cosmetic effect, it helps to balance the look of the bridle and gives an attachment for the standing martingale. Seen in both snaffle and double bridles. In general , eventing, showjumping and hunting nosebands should be of $\frac{3}{4}$ to 1" width leather as these may be functional as well as cosmetic and any thinner noseband will be too weak to be of use. The cavesson should be fitted about two fingers below the zygomatic ridge and fitted with two fingers between the band and the nose. The exception to this is if you have a padded cavesson that can then be fitted tighter, if this is used to close the jaw it must be fitted a little higher (one finger) and fastened tighter and be of the padded type and at least $\frac{3}{4}$ " wide to protect the nose and the underlying tissues and spread the pressure. If a cavesson is to be used with a standing martingale then the width should be of 1" this is because the pressure is then spread across the nosebone and not concentrated on one spot, preferably this would be padded as well. It is also a safety issue, as the strength in a smaller narrower noseband will not withstand the strain of a jumping or galloping horse and may fail. The smaller narrower $\frac{5}{8}$ " and $\frac{1}{2}$ " nosebands may be raised and stitched and these are used in the show ring to emphasize the head and to mask any conformational or cosmetic issues, they are not functional to any degree and so should not be pulled tight or used with a martingale. Safety for the rider of the popular draught crosses seen these days is also an issue, these horses should not be ridden in narrow bridles, not only do they look out of place on a large head as they were designed to emphasize the small pretty head, but they are definitely not strong enough to allow for a safe ride and may fail if put to the test as these horses are extremely strong. Tightening the cavesson as opposed to leaving it looser has the effect of shutting the jaw over the molar area and restricting the movement of the teeth and jaw from side to side and in opening. Horses need to swallow saliva and so need to be able to relax and then move the jaw slightly to develop the feel of gentle constant contact. Inability to dissipate saliva can manifest itself in over salivation and drooling or in a dry mouth, both as big a problem to the rider.

Rope Cavessons are seen in the Polo field, either in the raw state or as a covered rolled version, these are designed to concentrate the pressure in a small area of the nose to make raising the head and pulling painful and to discourage it. Pressure is exerted on the bridge of the nose when the rein is used or the horse raises its head as these are often seen in conjunction with both a standing and running Martingale.

The Worcester, this noseband is designed to hold the bit high in the horse's mouth. The two angled straps sit around the bit in a position that holds the bit pressure off the bars and keeps it only on the lips. This noseband is designed for horses that are fussy about bar pressure, due to a very thin membrane over the jaw bone, an injury or because they move

or rattle the bit in the mouth whilst being ridden. The Cavesson part is fitted as for a padded cavesson, a little higher than usual, 1 finger below the zygomatic ridge, the straps are then adjusted to allow the bit to lie in the mouth without any contact with the lower lip. The straps should fit snugly but not pull the bit up to the palate. The noseband then holds the weight of the bit and relieves the discomfort for the horse, without losing too much control.

The Flash Noseband is a form of Cavesson with an extra strap somewhat like a drop; it may be used with a standing Martingale. The noseband should be designed with some padding or at least a wide bearing surface of 1" and not the raised stitch design, this allows for closure of the top half of the flash comfortably tightly without undue nasal pressure or injury to the nerves near the surface. The lower band the diagonal part should fit a shade looser, not impeding the breathing or drawing the cavesson band down when closed, this will distort the action and limit the air intake of the horse. The flash is a compromise between the drop and the cavesson and as such does not quite do the job of either very effectively. It closes the mouth at the molar level and restricts the side to side action lower in the mouth at the interdental space (the bars) and incisors. Flashes should be used for horses that only open their mouths a little and need guidance in keeping a constant contact, they are designed to close the mouth not fix a tongue issue. They are easily stretched and often fitted badly, the higher cavesson should fit 1 to 2 fingers below the zygomatic ridge and have a snug not tight feel so it stays in place and follows straight across the nasal bone when the flash strap is buckled, offering good air flow through the nasal cavity and also good cooling for the horse, as a good percentage of the internal heat of the animal is dissipated through the lungs. Flash attachments sold separately to turn a cavesson into a flash fit too low and too poorly to be effective and are usually fitted on too narrower a noseband to maintain comfort for the horse.

The Crank noseband is a cavesson that has been designed to latch up on a cranking system drawing the back of the band tightly under the chin via a circular strap that passes through a metal ring on the off side of the horse enabling the bridle to apply as much pressure as desired, so fitting these correctly is of the utmost importance. This system allows a strong pressure over the nasal bone, the nerves on either side of the bone, the trigeminals, and pressure on the sharp bones of the jaw at the rear of the face. A Crank should be of a very padded variety with the padding on the nasal bone area soft and comfortable, it should always have a padded band that the strap slides through on the underside behind the jaw over the jaw bones which has enough coverage to stay in place and not be pulled to the side when tightened. Fit for this band is important because it can easily be done badly and can slip around off the jaw bones causing pain and pinching to the horse, this can also stretch easily as this area of the jaw is in the centre of the horse's head and the horse will apply

consistent leverage to this piece of equipment, so fit it a little on the shorter side when you buy one. A Crank closes the jaw at the molars and was designed to be used with a snaffle bridle or a double when a drop cannot be used, however it does not stop the side to side movement of the crossing jaw very effectively. Closing a Crank tightly will cause pressure over the nose and jaw bones through the teeth and lips and will pull down from the poll area when pressure is applied to the reins as this limits the action of the tongue via the hyoid bone and thus the flexibility of the head. Watch the Crank does not pinch flesh between the various parts of the noseband when you tighten it. Cranks should not have a flash attachment.

The Drop Noseband was designed to eliminate the ability of the horse to either open its mouth or cross its jaw thereby sliding the bit away from the control points and allowing the horse to evade the action of the bit. A drop alters the whole action of the snaffle bridle by keeping the bit higher in the mouth and causing some pressure on the nose when the rein is applied, it will help to lower the carriage and produce flexion in the lower jaw, thus it helps the control of the rider and offers better aid response from the horse, this noseband really has little poll effect. Fit of a Drop is extremely important as they are the least well made in the off the peg nosebands, firstly because the difference in the width of a horse head where the drop fits is much narrower and secondly because each manufacturer seems to have different patterns. Drops fit under the bit, as the name would imply, they sit over the nasal bone at the junction of the end of the complete bone but before the flaring in the nostril, the back strap then “drops” below the bit through the curb groove to stabilize it in the mouth and buckle up on the near side away from the lips, but should never push the bit up or interfere with the normal action of the snaffle, the lips can be pinched if the noseband is pulled too tight or the leather is allowed to stay dirty or crusty with saliva. The angle of the back strap as it leaves the ring on the side of the face should be about 120 degrees from the horizontal of the nose strap. The front noseband of the drop should be wide or padded to alleviate the pressure and make sure it is dispersed correctly, the band should not interfere at all with the nostrils and if it does it is fitted too low. The best design is the one with either one or two adjustments in the front nosepiece so the fit can be customized to the individual horse and the front nose strap should have a curved leather keeper from the noseband to the head strap following the circular ring on each side to stop the front from falling down on to the nasal cavity and impeding breathing. Drops are not to be used with a standing martingale only a running.

The Grackle, or figure eight was named after a Grand National winner that wore one, this noseband sits below the bit with the bottom strap and above with the top one, it comes in

two forms the Standard and the Mexican, and the difference in design makes for two different actions. Both nosebands are supposed to come with a keeper in the back to limit the distance that the top and bottom strap can be pulled apart by the fitter but this piece of the equipment seems to have been lost in the design these days. Designed to prevent the horse from opening the mouth and crossing the jaw it has a strong pressure point at the X of the noseband in the front of the face, this cross should be fitted high on the face and should in no way ever interfere with the nostril or the breathing, it is way too low if this is happening. The cross in the front should allow you to slide the straps through the circular pad thus adjusting the point of pressure higher on the nose, this noseband will not work if there is no slide here. The difference between the Standard Grackle and the Mexican is that the arms are divided and attached to a ring linking the head piece to the noseband in the Mexican, so you can only adjust these from the head piece forward making a good fit not so easy to achieve, the Standard grackle has the noseband straps going through a loop that slides with the head band on that loop so when you adjust the straps of the nose you can alter the entire fit on the face not just the front, making it much easier to control the fit and more comfortable for the horse. This noseband will have poll pressure if pulled too tight, it also has quite a considerable pressure over the jaw bones on the back of the face so be careful that it is fitted correctly and not over tight.

The Lever or Crescent, this noseband is made with a piece of soft metal inside the nose portion, so that it can be contoured to the face and hold its shape. Fitted with the front at the same level as a Cavesson, the nose part is then attached centrally to a crescent shaped half moon made of brass or stainless steel. The two back straps, one high on the back of the jaw attached to the top of the crescent and one low where a drop would sit fastened around the face and with the lower band sitting outside and lower than the bit. The straps are fitted snugly but not too tight and the noseband should not move when the bit is used because as the name implies the action of this noseband is to produce a lever action of pressure on the back of the upper jaw band, whilst also having pressure over the nose bone and pressure in the lower jaw when the bit is pulled backwards against the lower jaw bone. There is little or no poll pressure in this noseband as the top of it is lifted as it is used. A fairly severe control aid all about pressures so it should be used wisely.

The Kinton, name after a small Village in England where it was first used. This is a bit pressure noseband and has no back strap. The noseband is made of a front strap with buckles either side of a front plate again having a piece of soft metal imbedded in the padded front to stabilise and contour the shape, these leather straps are attached to a curved three quarter ring either side shaped to sit around the bit and then attach to the

head piece. The idea is for the noseband to be totally neutral until the horse pulls then a pressure from the bit aid is magnified by the noseband by pressure low on the nasal bone in the sensitive part where the bone finishes and pressure over the poll. The pressure is released as soon as the bit is released. Correct fitting of this noseband is essential, as too low and you can break the fragile nose bone, it will also impede breathing. Fitting is the same as a Drop.

To conclude, a noseband needs to be correctly fitted to the head of the horse and its conformation both bone structure and the mouth. Control comes from the correct application of pressure and comfort while the bit is in use.