The University of Tennessee
Agricultural Extension Service
TNH-6001

EQUIFACTS

Evaluating Conformation of Horses

Doyle G. Meadows, Professor, Animal Science

Conformation is the physical appearance of an animal due to the arrangement of muscle, bone and other body tissue. Conformation is a combination of muscle, skeletal soundness and symmetry. It is the overall blending of body parts to form a graceful athlete. All horses have conformation. However, the quantity and quality of the blending of these body parts determine the acceptability or unacceptability of the horse's conformation. This fact sheet will outline criteria that can be used to evaluate conformation of horses.

Each breed organization has identified its ideal horse. Therefore, the breed ideal represents the breed's standard of excellence. Prior to comparing two or more horses, it is essential to have a mental picture of the ideal horse of that breed. The purpose of judging, either in competition or as a tool in selecting a horse, is to find within a group of horses the horse most typical of the ideal of that breed. Examples used in this fact sheet are for most light horse breeds, although some unique breed differences may exist on specific conformation points.

Unfortunately, the ideal horse may not possess the optimal conformation for all potential performance events. This problem should be recognized by both the competitive judging team members as well as the experienced horse show judge. It is essential to evaluate horses based upon their merit that day. Do not attempt to predict the potential riding qualities of a horse based on conformation. This tendency is called "crystal balling" and is often about as accurate as this method of prediction. After all, there are performance classes where an animal's ability to perform under saddle can be evaluated. However, there are also performance classes held at breed shows that include conformation as part of the evaluation criteria for that performance event. Therefore, conformation is important in all areas of horse evaluation.

It is important for a student of conformation to establish a systematic approach to evaluation. Once developed, this approach will allow the student to evaluate horses quickly and consistently. A system that works for many people includes first tracking (walk and trot) the horse for soundness, structural deviations and movement. Second, the evaluator views the horse from the side (profile), starting with the head, throat latch, neck, shoulder and front column of bones, topline, hindquarters and rear column of bones. This profile is done at a distance in order to visualize the entire horse (Figure l).

Next, the person approaches the horse to get a front view. Width of chest, muscling, and structure of the front leg and hoof combined with close observation of the horse's head and neck are appropriate (Figure 1) Moving to the rear, muscling of the entire hindquarter as well as hind limb structure are evaluated (Figure l). After a complete close inspection

of the horse, the person moves away from the horse and observes the horse from a distance to further evaluate balance, structural correctness and muscling. These evaluation criteria are discussed and defined throughout this fact sheet as well as an additional fact sheet, TNH-6000 **Evaluating Skeletal Structure of Horses**. Any evaluation system that allows for consistent, repetitious evaluation will work for a horse show judge or a novice who is simply comparing horses.

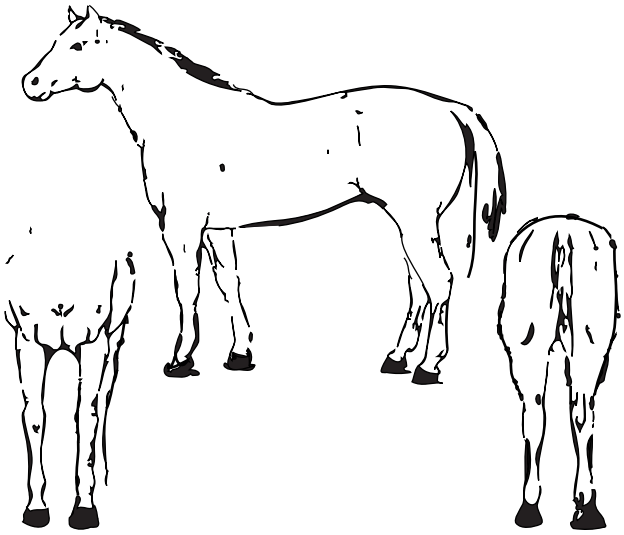


Figure 1.
A) Profile, B) Front and C) Rear view of the horse.
Sources: Stashak, Ted S. *Adams Lameness in Horses*. Fourth Edition, 1987. American Quarter Horse Association. *Competitive Horse Judging*, 1990.

Horse breeders continue to breed for horses with acceptable conformation. Well-conformed horses should be more athletic and superior performers. To evaluate conformation, it is essential to know the parts of the horse (Figure 2). A competent judge must have a thorough understanding of all parts of the horse, the function of each and an evaluation system that allows for consistent, repititious evaluation of horse conformation.

Head

There are differences in perception as to the ideal head for each of the various breeds. However, attractive, well-conformed heads for most breeds all have common characteristics. These characteristics include short, well-set ears; large, bold eyes; short length from eye to muzzle; large nostril; refined muzzle with a shallow mouth; as well as sex and breed characteristics of the head. There is no physiological benefit to the horse having an attractive head. Horses with different head shapes are able to breathe, see, hear and ingest food.

What makes a head pretty or attractive? Certainly the set of the ears, shape of the eye, size of the nostril, depth of the mouth and overall proportions of the head are important to a concept of beauty. The ears will be proportional to the horse's head. In fact, the various parts of the horse should always be proportional. However, the placement of the ears will not always

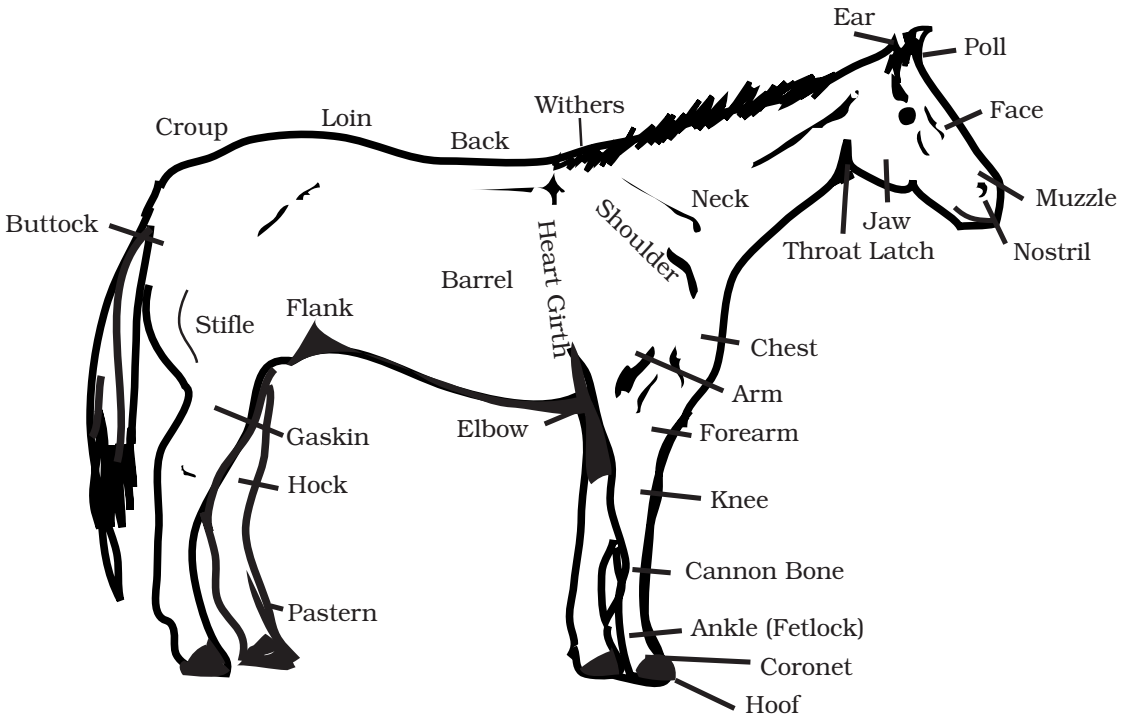


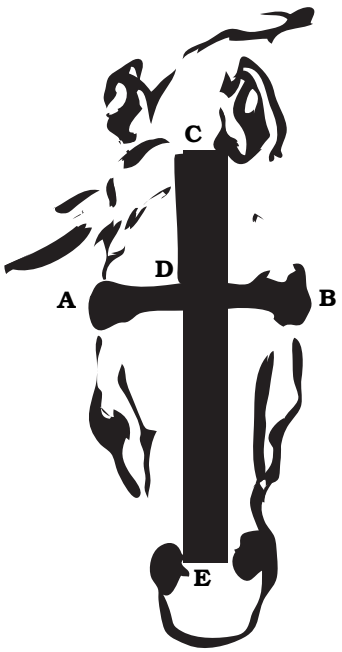
Figure 2. Parts of the horse
Source: Heird, J.C. A *Guide for Successful Competitive Horse Judging*. Colorado State University, Animal Reproduction and Biotechnology Laboratory. Bulletin No. 07, 1992.

be the same. It is important that the ears sit squarely on top of the head, point forward and have an attractive, alert appearance. Some horse's ears turn outward, some turn inward and some are positioned on the side of the head. Any deviation in placement or carriage detracts from the beauty of the head, thus from the total beauty of the horse.

When a horse's head is measured from the poll to a horizontal line drawn between the eyes, this distance will approximate one-half the distance from the horizontal line to the midpoint of the nostril. Thus, the eyes should be positioned one-third of the distance from the horse's poll to the muzzle. When the width of the horse's head across the orbit of the skull is measured, that distance should be almost identical to the distance from the poll to the horizontal line drawn between the eyes (Figure 3). Horses' heads should always be proportional.

There is a definite art to evaluating conformational traits of horses. Many of the concepts are based on years of observation rather than documented research. For example, the head has certain qualities that are important when evaluating other factors. The experienced judge may get an impression of an individual's potential disposition by the shape and position of the eyes. During evolution, the eye has moved from the front of the horse's head to the side, which provides a more rounded arc of vision (about 300 degrees.) Large, quiet, soft eyes usually indicate a quiet, docile disposition. A small "pigeye" is indicative of a horse that is usually somewhat sullen and difficult to train, perhaps due to limited vision. The horse with excessive white around the eye is very often nervous and flighty. However, this is characteristic of Appaloosa horses, and this anatomical characteristic is not the reason for these differences in disposition. This characteristic is merely associated with other genotypic and phenotypic characteristics of the breed. What is the perfect eye? Look for a bright, tranquil eye with a soft, kind expression.

Figure 3. The horse's head is proportional. The distance from A to B is equal to the distance from C to D and one-half the distance from D to E.



Source: Heird, J.D. *A Guide For Successful Competitive Horse Judging.* Colorado State University, Animal Reproduction and Biotechnology Laboratory. Bulletin No. 07. 1992.

Horses with bold, bright eyes set wide apart and well onto the side of the head (Figure 3, A to B) in combination with a slightly concave appearance from the eye to the muzzle (dish face) will have increased depth perception and lateral vision. These horses appear to be more trainable because they are not as easily frightened and are less apprehensive about their surroundings. Horses with small "pigeyes" and a convex appearance from eye to the muzzle (Roman-nose) have limited vision and are typically more difficult to train. Many outstanding horse breeders recognize breeding and quality of a horse by observing the head.

Even though many breed enthusiasts discuss the need for a large, flaring nostril to facilitate adequate intake of air, there appears to be no scientific data to support this statement. Many judges and breeders talk about the need for a large nostril so the horse may breathe properly. There probably has never been a horse with a nostril small enough to restrict intake of air. Most horses breathe satisfactorily regardless of size of nostril. However, nostril size has an effect on the horse's overall beauty.

For beauty's sake, the horse should have a well-defined jaw. Stallions will have a slightly larger, deeper jaw than mares, indicative of secondary male sexual characteristics. Typically, geldings will be intermediate between mares and stallions.

There are distinct differences among breeds and lines of horses with respect to

depth of the mouth. This is indicative of a horse that is light or soft in the mouth. The softness or lack of responsiveness during training may be referred to as being light, soft, tough or hard in the mouth. Generally, the more shallow the mouth, the softer and more responsive a horse is to a bit and vice versa. Some breeders believe a deeper mouth is indicative of "breeding." Obviously, trainers of reining and cutting horses prefer a shallow mouth because of the immediate response to touch. When examining the mouth, the evaluator should ensure that the horse is not "parrot-mouthed" (overshot muzzle) or "monkey-mouthed" (undershot-muzzle). The shape of the muzzle contributes to the beauty of the horse.

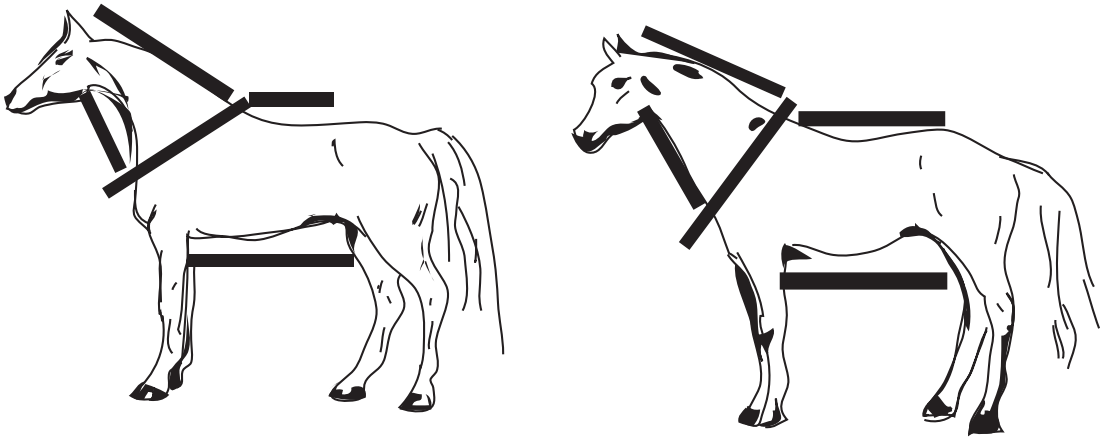


Figure 4: Slope of shoulder determines top to bottom line ratios of the neck and body.
Source: Heird, J.C. *A Guide For Successful Competitive Horse Judging.* Colorado State University, Animal Reproduction and Biotechnology Laboratory. Bulletin No. 07. 1992.

Neck

The neck is always an important conformational part to consider because the horse uses the neck as a balance arm. The throat latch, which is from ear to ear, should be trim and refined regardless of breed. The depth of the throat latch is usually equal to one-half the length of the head. If a horse is thick and coarse in the throat latch, air and blood flow may be restricted when asked to flex or bend at the poll, The trim, refined throat latch will allow the horse to bend at the poll and perform while breathing correctly.

Most judges give preference to horses with a long, thin neck. By doing so, they are selecting horses with the appropriate top-to-bottom line neck ratio. The topline is the distance from the poll to the withers, and the bottom line is the distance from the throat latch to the neck-shoulder junction at the chest (Figure 4). The ideal would be approximately a 2-to-l ratio of the top to bottom line of the horse's neck. This process of selection would prevent judges from making incorrect assumptions when comparing tall and light muscled horses to short and heavier-muscled horses. Invariably, a horse that is short with bulging muscles will have a shorter, thicker neck than a taller horse with less muscle. The neck is proportional to the horse's overall length and height. Certainly, shorter horses will always have shorter necks than taller horses.

The determining factor in the ratio of the top to bottom line of the neck is the slope of the horse's shoulder. As the shoulder becomes more sloping, the topline becomes longer in relation to the bottom line. Conversely, as the shoulder becomes straighter, the ratio of the top-to-bottom line becomes small (Figure 4). As the ratio deviates toward l to 1, the horse appears to have a short, square, boxy neck. When two horses of the same frame size are compared, one with a normal neck and one with a short-appearing neck, both horses will have the same length in the bottom line of their necks. Obviously, the withers of a straighter-shouldered horse are more forward; and thus, the topline of the neck is shortened. Straightening the shoulder has little, if any, effect on the length of the bottom line of the neck.

Balance

Balance is the single most important characteristic in equine selection because it forms the basics for movement, length of stride and, ultimately, performance. Balance is determined by the skeletal structure. When judging, it is important to attempt to visualize and evaluate the skeleton of the horse underneath

muscle and other tissues. Slope of shoulder is critical to balance. Slope of shoulder changes drastically when the angle of the shoulder is increased or decreased. Not only does the top-to-bottom line ratio of the neck change, but the ratio of length of back to length of underline also changes. It is ideal to have a short topline and a long underline. As the shoulder becomes straighter, the withers move forward, which results in a longer back from withers to coupling. Length of underline from elbow to stifle is not affected by a change in shoulder angle; thus, the straight-shouldered horse's body has the appearance of a tube. It is incorrect to compare 14.2-hand horses to 17-hand horses, because horses of different sizes should not have the same length of body or underlines. The long back coincides with the short neck of the straight-shouldered horse. When the shoulder is steep, the other angles of the horse's body will be steep. Thus, the horse will have a short, steep croup, a steep stifle and steep pasterns (Figure 4).

In general, the angle of the pastern will correspond to the angle of the shoulder (Figure 4). A horse that has too much slope to its pasterns is undesirable and is said to be "coon-footed." This condition can become so severe that the horse's fetlocks hit the ground as the horse moves. Additionally, a horse with a short, steep pastern will endure more concussion on the pastern and ankle. The ideal slope of the shoulder is approximately 45 to 50 degrees. However, shoulder angles will vary from the ideal. The person evaluating the horse should not be overly demanding for an exact degree of slope of shoulder but should concentrate on balance and a blending of structures.

Shoulder

In addition to overall balance, slope of shoulder influences length of stride — the steeper the shoulder, the shorter the stride. Angle of shoulder and angle of pastern serve to absorb shock when the horse moves. The steep or straight-shouldered horse will be shallow-hearted, as measured from the top of the withers to the chest floor. Unlike the balanced horse, with legs that are approximately the same length as depth of heart, the straight-shouldered horse's legs will be longer than the depth of heart (Figure 3). A steep-shouldered horse will always be a rough-riding horse. Horses with long sloping shoulders will be better able to dispense the damaging effects of concussion, and their strides will have more freedom of movement and style of action.

Topline

The topline of the horse includes the withers, back, loin or coupling, and croup. As viewed from the side, a properly balanced horse will be higher at the withers than at the croup. When the withers are higher than the croup, the hindquarters are positioned more under the body, which enhances the athletic ability of the horse. Strength of topline, which includes prominent withers, short, strong back and well-muscled loin, has a positive influence on soundness and athletic ability.

The ideal withers should be sharp, prominent and well defined. The well-defined withers are important from the standpoint of holding a saddle on the horse without excessive tightening of the front cinch. Horses with rounded or flat withers require more cinch pressure and subsequently are less comfortable for the performing athlete.

Horses should have short, strong backs relative to a long underline. The topline to underline ratio (Figure 4) plays an important role in balance, length and type of stride. Length of back is directly related to length and slope of shoulder and top to bottomline neck ratio. Horses that have excessively long backs have weak and undesirable toplines as well as being unbalanced.

The loin (coupling) should be well muscled and strong as opposed to being long, weak and poorly muscled. The loin is the pivot point of the horse's back and is the area between the last rib and the croup. Short, muscular loins are needed to carry power from the hind legs forward.

The croup should be long and gently sloping. This adds length to the stride as well as dimension and muscling to the hindquarter. Stock horse breeds (Quarter Horses) are more sloping in their croup than pleasure breeds (Arabians, Morgan's).

Hindquarters

Regardless of breed, the hindquarters should appear square when viewed from the side (Figure 5). However, as previously stated, the extent to which upper corners of the

square are filled in will depend upon breed. The flatter and more level the croup, the more likely that horse will move with a vertical action behind and less of a horizontal action. The horse with a steep croup will move with the legs more collected under the body. The angle of the croup will have a great influence on the position of the hock. Moreover, these two factors together will dictate a collected, balanced horizontal movement. The ideal horse has a quarter that is as full and as long from across the horizontal plane of the stifle as it is from point of hip to point of buttocks. When a horse has a V-shaped quarter, it is due to limited muscling and/or a straight stifle.

Barrel

The judge should evaluate spring of rib and depth of heart girth since these are indicative of capacity for reproductive and athletic performance. Spring of rib indicates width, while depth of heart girth indicates depth of the horse's chest. Both width and depth of chest indicate total volume in the thoracic cavity. Again, these measurements will be proportional. However, some horses will be pinched in the heart girth and have less of a rounded, convex look to their rib cages. Depth of heart and spring of rib indicate more strength and constitution.

Muscle

Muscling is an important criterion in judging many conformation classes, especially stock horse classes, such as Appaloosa, Quarter Horse and Paint Horse. It is important to realize that muscling is proportional; as one muscle in the body increases, total muscle mass increases. The correct horse is a balanced athlete muscled uniformly throughout. Horses visually appraised as heavily muscled have greater circumference of forearm and gaskin and are wider from stifle to stifle than lightly muscled horses. When muscling is visually appraised at the forearm, gaskin and rear quarters, it will reflect the same relative degree of muscling at other anatomical points.

Today the horse industry accepts muscling that is long and well defined. A powerfully muscled horse that has bulge, ripple and definition to its muscle structure is still very much desired today in the stock horse breeds. It is important to note that breeds such as the Arabian will not have the quantity of muscle that will be seen in the stock horse breeds such as the Quarter Horse. However, long, clean, well-defined muscling is preferred in all breeds.

Breed and Sex Characteristics

Breed characteristics are those traits that are unique and characteristic of a particular breed. These would be traits such as body type and color pattern, as well as gaits and way of going.

Sex characteristics are an important aspect of horse judging. It is necessary to recognize and distinguish between the sexes of horses. Masculinity refers to male traits such as prominence of jaw and heavy muscling. In

Figure 5: Structure of the hind quarter (stock-type) as viewed fromt the side: A - ideal, B - Steep croup, C - Level croup

Source: Heird, J.C. *A Guide For Successful Competitive Horse Judging.* Colorado State University, Animal Reproduction and Biotechnology Laboratory. Bulletin No. 07. 1992. (adapted)

mares, the evaluator should look for feminine characteristics and refinement. The attractive mare will be refined and adequately muscled. Mares will typically have cleaner necks and will be more refined than stallions. Geldings would fit somewhere between stallions and mares but are generally not as massive in muscle as stallions. Refinement is also desired in geldings.

Summary

Conformation is important to all breeds and types of horses because of its relationship to performance. The well-conformed horse will be a superior athlete. The competent horse judge or evaluator will recognize the differences between individuals and select the more desirably conformed horse. The information in this fact sheet will serve as a tool for a student of horse evaluation to improve his or her evaluation skills.

The single most important aspect of a beginning horse judge is the desire to learn. County Extension agents and 4-H adult leaders can provide learning opportunities for youth and adults who want to learn and are willing to work to improve their ability to evaluate horses. Horse publications, books and breed association literature are excellent reference material to begin to recognize differences in horses.

This can be followed by lectures and videotapes showing various breeds of horses and their ideal. After judges have improved their knowledge of breeds and breed standards, trips to horse farms would be appropriate. Horses can be judged or evaluated at larger horse farms or training stables. In addition, horse shows and horse sales provide excellent learning opportunities to judge and evaluate horses.

Acknowledgements

Heird, J.C. *A Guide for Successful Competitive Horse Judging.* Colorado State University, Animal Reproduction and Biotechnology Laboratory. Bulletin No. 07. 1992.

TNH-6001 3/03 E12-4415-00-027-03