

Since both conformation and action need to be included in light horse evaluation, the basic conformation features tending to affect action must be understood. The relationship of body parts to performance (form to function) will be here discussed with the body of the horse divided into four areas: 1. Head and Neck, 2. Fore Quarters, 3. Body or Trunk, 4. Rear Quarters.

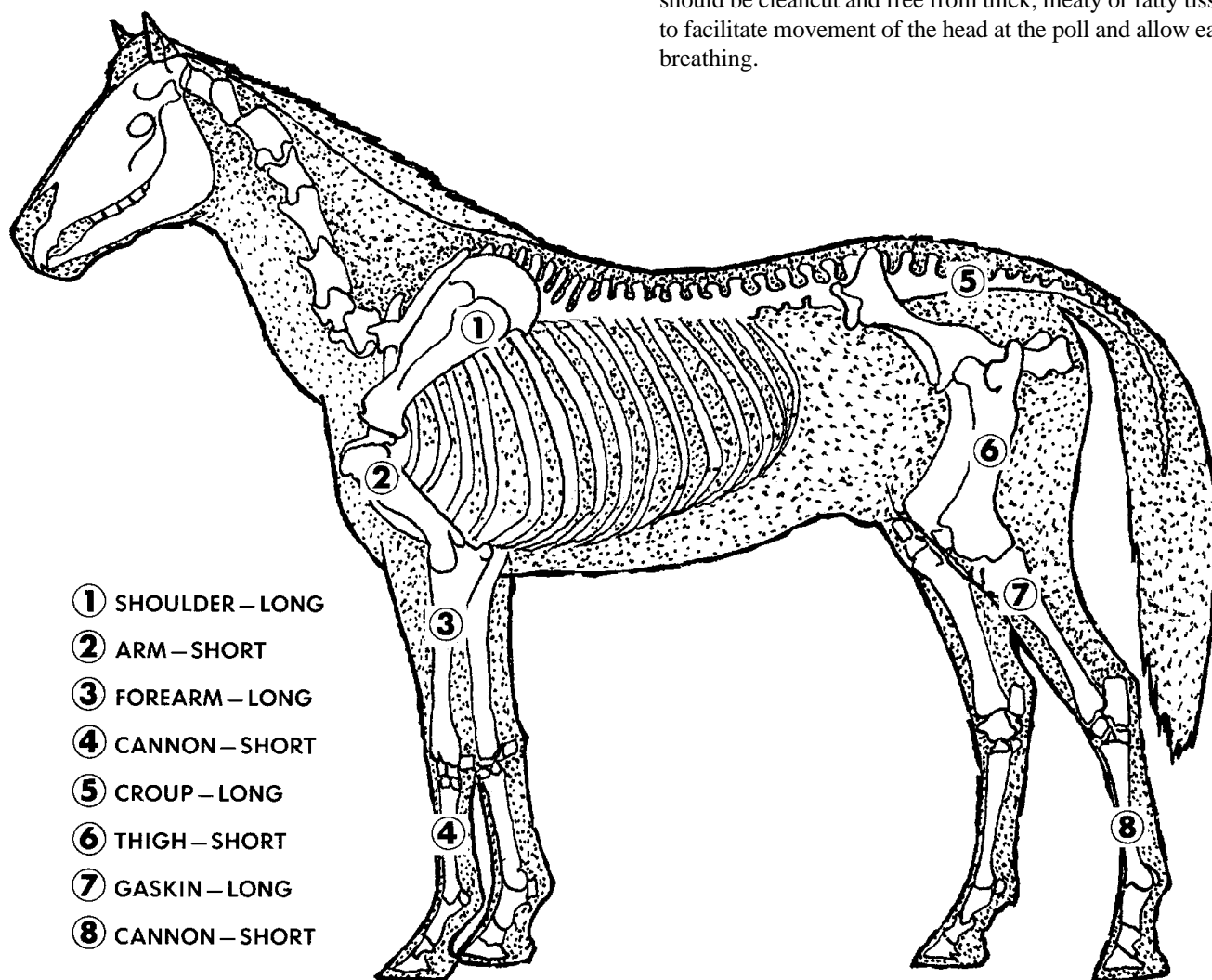
## HEAD AND NECK

The ideal head for each breed is described by the association publications. The descriptions all say the head should be broad in the forehead and between the eyes, short from the eyes to the nostrils and deep in the jaws. These words mean only that the head should be in proportion to the parts of the body of the horse. The proportion of the head tends to be an indication of body proportions. For example, a long narrow head indicates a long, shallow, narrow body.

Coarseness about the head indicates a coarse body, lacking quality. The ear should be medium size, attractively set and carried at a 45 degree angle to the axis of the head. Large, full, prominent eyes of a clear deep color are desired. Small blue eyes are considered weak. Small narrow, squinty eyes are often correlated with coarseness in quality and a lazy, sluggish, disposition.

Large nostrils allow for a maximum air intake and are of prime importance because the horse cannot force air into the lungs through the mouth as is possible in other species of animals. All breathing of air by the horse must be done through the nostrils.

All horses, both long and short necked ones, have seven cervical vertebrae. The shape of the neck is due largely to the amount and shape of the muscular tissues. The neck should be long, lean, and attached high up on shoulders with prominent withers. The lower part of the neck should be attached above the point of the shoulders. The throat latch should be cleancut and free from thick, meaty or fatty tissue to facilitate movement of the head at the poll and allow easy breathing.



- ① SHOULDER — LONG
- ② ARM — SHORT
- ③ FOREARM — LONG
- ④ CANNON — SHORT
- ⑤ CROUP — LONG
- ⑥ THIGH — SHORT
- ⑦ GASKIN — LONG
- ⑧ CANNON — SHORT

SKELETON OF HORSE SHOWING RELATIVE POSITION & SIZE OF BONY PARTS

Length of neck plays an important part in length of stride. Over the neck lie several layers of muscles, some of which control the movement of the scapula or shoulder blade, the arm, and indirectly the forearm. The muscles that control leg movements terminate at the knee. Cannon, pastern and foot action is controlled by ligaments and tendons. Larger neck muscles allow more muscle contraction extending the arm further and raising the forearm higher. This results in a longer stride. Another set of muscles extend from the front of the neck to the shoulder blade. Longer muscles here allow more shoulder blade movement and thus a longer stride.

A thick neck adds excess weight to the front end. This causes increased shock to the front legs because they ordinarily carry two-thirds of the body weight of the horse. A thick neck also decreases head movement giving slow, awkward turns.

## FORE QUARTERS

The withers should be prominent or high and well defined. They should extend rearward about one-quarter of the distance from the fore to the rear flanks. This is not possible unless the shoulder is long and has about a 45 degree slope. Such withers give the horse opportunity to have a long stride besides providing a good seat for the saddle.

The shoulder should be long, flat and smooth, with a 45 degree slope. This allows for increased shoulder movement which determines the arm movement and affects the stride. In a steep-shouldered horse the arm does not extend very far forward during movement. This decreases extension of the forearm and gives a short stride. Accordingly the slope of the shoulder increases length of the muscles and allows for more contraction and greater range of movement of the front leg.

The legs of the horse should be attached to the trunk to give the appearance of being on the four corners of the body. When viewed from the front, the cannons should descend from the center of the knees. Cannon bones should give the appearance of being flat when viewed from the side. This doesn't mean that the bones themselves are flat, but that splint bones and tendons and ligaments are set apart, well tied and give support at the posterior of the legs.

The front feet should be large, symmetrical and set at the same angle as the pastern. The foot should be especially wide at the heel and have considerable height at the heel as long as it is in keeping with the desired angle.

When viewed from the side the best combination of length for the various parts of the front quarter calls for a long shoulder, short arm, long forearm and short cannon. This gives a longer, more elastic stride and more speed.

A steep shoulder coupled with a long arm, short forearm and long cannon is the most undesirable shoulder and leg structure. This gives a severely shortened stride. Steep

shoulders are usually associated with short, steep pasterns giving a hard, jolting ride because of decreased shock absorption.

A long sloping shoulder also forms a more desirable base for neck attachment giving a better balanced, more attractive horse.

## TRUNK OR BODY

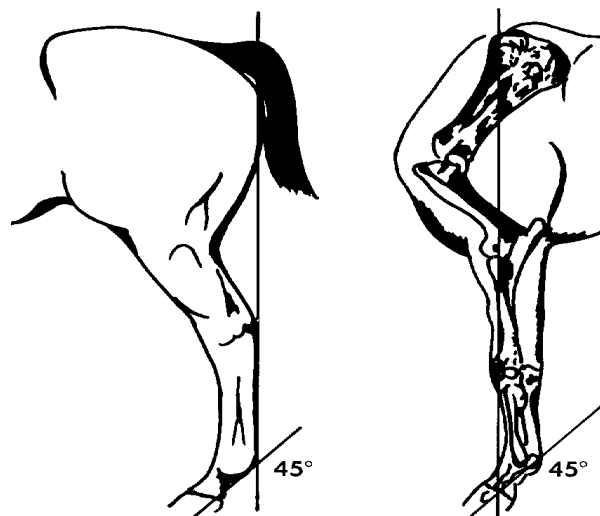
The trunk or body of the horse should be deep and broad. The back should be short and the loin wide and smooth. The back and loin together make up the top line which must be strong to protect internal organs, bear the weight of the rider and transmit to the front end the propulsion generated by the hind legs. The loin has no bone structure for support, making it the weakest part of the top line. The loin is a bridge between the rib cage and the hips. In order for the loin to perform its function of transmitting power from the rear to front end, it must be short and heavily muscled.

The back which must also be short and heavily muscled gets additional support from the rib cage. Often weak backs result from weak loins.

A short back and loin coupled with desirable shoulder and withers results in a long underline. However, a long underline does not insure a large body capacity unless it is combined with long, deep, well sprung ribs. This combination of short back and loin, long underline and long, deep, well sprung ribs insures ample capacity for breathing and consuming feed.

Length of underline also affects freedom of leg movement. A short underline can cause a horse to forge. This is striking the undersurface of the front foot with the toe of the rear foot.

## REAR QUARTERS



Ideal position and setting of rear leg in relation to croup and rear pastern

Ideal position and slope of shoulder in relation to setting of front leg and slope of pastern

The croup or rump should be long, wide and level. This is the area from the loin to the tail head. Although the slope of the croup differs with light horse breeds, a level croup has longer muscles that enable a horse to take long strides and maintain speed for great distance. A more sloping croup sets the rear legs further under the horse so he may make a quicker start with the more powerful stride. Regardless of breed or slope to the croup, it should be long so the croup muscles can make maximum contraction. All muscles in the croup and thigh must be strong to supply the power from the rear quarters to propel the horse.

Adequate gaskin muscling is desired. The outer gaskin muscles help to pull the leg forward and enable propulsion, giving the horse a long, powerful stride.

The powerful gaskin muscling also gives strength to the legs in turning and pivoting.

The rear quarter is comparable to the forequarter in that a long croup, short thigh, long gaskin and short cannon gives the best stride.

### Action

A long, straight, free elastic stride and coordinated, collected action is desirable. Excess lateral movement of the feet and legs reduces efficiency. Action is affected by the set of the feet and legs as well as by the anatomical characteristics already mentioned.

Fairly close hock action with the hind legs working beneath the body is essential.

## EXAMPLES OF ANATOMICAL FEATURES RELATING FORM TO ACTION

1) A thick neck and filled throat latch gives a lack of flexion of the head and slow, awkward turns.

2) Horses with low, rounding withers or thick withers often hang low-headed in the bridle and handle front legs clumsily. They often forge.

3) Length and slope of shoulders tends to correspond to length and slope of pasterns. Properly sloped shoulders and pasterns (45 degrees) are related to a springy stride. Length of shoulders and pasterns is related to the length of stride.

4) Long forearms and gaskins are related to length of stride.

5) Horses standing straight on front feet are more apt to show straight stride and true action.

6) Short, straight shoulders give a short, straight stride with concussion.

7) If the front legs are set far out on the corners of the body, a rolling, laboring action in front will result. This condition often goes with thick withers and straight shoulders.

8) When points of the hocks turn slightly inward with points of the toes slightly outward and the rear cannons parallel, such a position of the rear legs is related to collected, rather than spraddled, action behind.

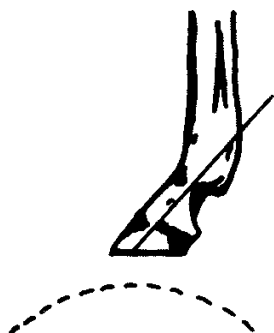
9) When points of the hocks turn outward, often a defect in action called limber hocks or rotating hocks occurs.

10) A calf-kneed position of the front legs gives a pounding gait and hard concussion of feet at completion of the stride.

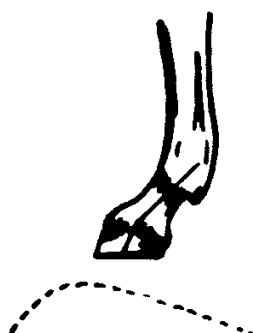
11) A pigeon toed horse will paddle or wing out when he travels.

12) A splay-footed or toe-wide horse will dish or wing in when he moves.

13) A straight stilty angle of pasterns will give a stilty action and may give cocked ankles or other unsoundnesses such as sidebones.



Normal foot forms even arc in flight



Too stubby - high heel and short toe causes lengthening of first half of stride, long heel touches ground earlier which shortens last half of stride.



Long toe - short heel causes shortening of first half of stride and lengthening last half of stride.

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