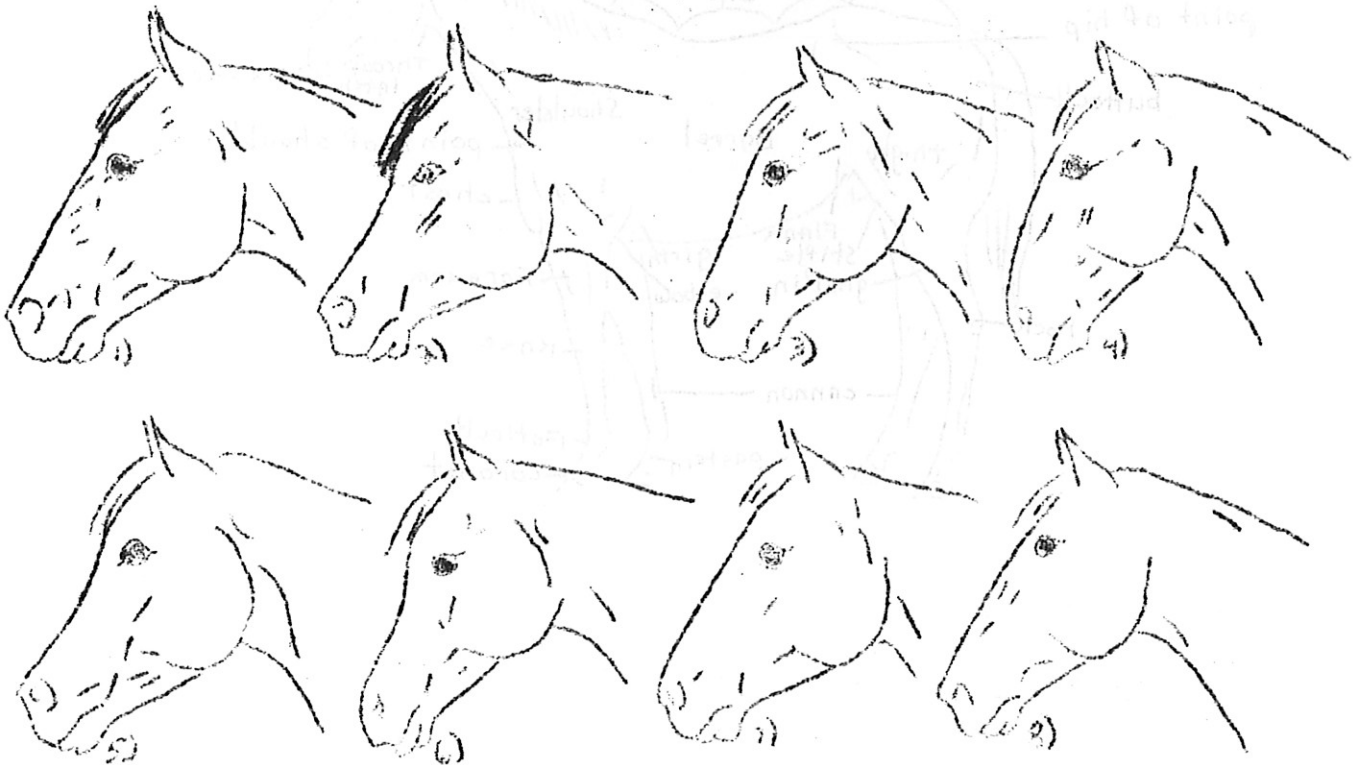


Width between the jowls is also important on any horse that has to do much running or other hard work (like cutting, jumping, barrel racing, etc) involving heavy breathing. This allows for a large development of respiratory apparatus.

Now we come to the eyes. There is some disagreement on the exact placement of the eye-some saying that too far on the side interferes with direct-ahead vision. But all agree on the desirability of a large eye. We all think a large, expressive eye (two of them!) shows intelligence and kindly disposition. On the other hand, the small eye, and the even smaller, sunken 'pig-eye' is disliked in all breeds.

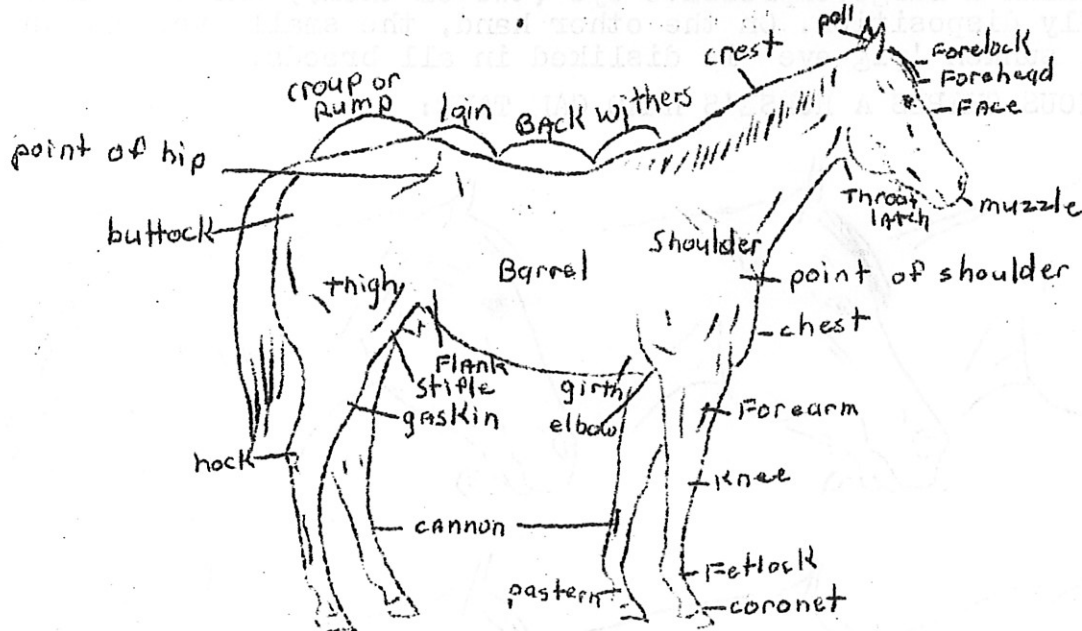
#### THE VARIOUS SHAPES A HORSE'S HEAD CAN TAKE:



1. good head, straight profile, Thoroughbred type.
  2. good head, Arab type, prominent forehead, but with dished profile below eyes, deep through jowl, small muzzle, eye typically low-set.
  3. plain head, prominent forehead, but with no dish and a 'receding' forehead.
  4. common head-Roman nosed-same type as (3) but with arched nasal bone.
  5. Pony type head-dished face (between eyes as well as whole profile)
  6. 'camel' head
  7. head as triangular as (2) but without the dish below the eyes, thus giving an asinine appearance.
  8. 'jug head'-head has almost the same width from jowl to muzzle, high set eye.
- Heads #1 & #2 are desirable, the others all have undesirable characteristics.

Before going any farther, let's take a look at the parts of the horse, so that you will understand where the parts are that will be discussed.

**PARTS OF THE HORSE:**



THE NECK

Like the horse that shouldn't travel on his head, we can't spend too much time on that subject either. So, let's go on to the neck. The first area encountered is the 'set on' head, as it is sometimes called for obvious reasons. This region is also called the 'mitbah' by the Bedouins. This region is where the head joins the neck. This area should have a clean-cut appearance and must have plenty of room when the horse's head is pulled up and the chin tucked in, otherwise the horse would choke down from compression of the windpipe.

Flexibility or suppleness of the neck is of prime importance in any breed of light horse, for not only are the 'mouth' and control involved, but also 'cleverness' (referring to agility and nimbleness) is involved. Even range of vision depends on head carriage, and this is usually influenced by the shape of the neck.

A horse with a short, thick, stiff neck, with little or no 'mitbah' will be very difficult to control, as these faults prohibit suppleness

and give to the bit and also affect even lateral pull. Since the fault of a short, thick, stiff neck works against the ready turning and the easy regulation of the gaits of a horse, it should be regarded as a grave defect of conformation in the riding horse. Where agility is essential to a horse, he should have a flexible neck and be able to extend it with ease, so as to use his head and neck for a balancing pole for maintaining the balance of his body.

However, the neck should not be so flexible that it becomes 'rubber-necked' in one extreme (which is throwing the head upward) or 'overbent' in the other which is when the arch, if any, is overdone and the chin nearly touches the chest making the horse equally able to avoid control.

Not only the way that the head is set on the neck affects the shape of the neck itself. The way that the neck is set into the shoulders will affect the shape of the neck too. Ideally, the neck will emerge high, with a well-defined breast area below it, while the opposite is the typical zebra neck which seems to have its source between the front legs, with no visible breast at all. When the neck is also heavy, or the body light, the effect is sausage-like, with the neck being almost as thick as the body. The neck should also be arched-convex. The opposite of the arched neck is the ewe neck, which is termed as being 'concave'. The upside-down neck is also concave (caved-in), but there is a difference between the two similar types; the former (ewe-neck) is light and very much like a ewe's neck and the ordinary upside-down neck is a bit heavier in that it has a 'crest' all right-but it is UNDERNEATH the neck. This is not really a 'crest', but the arch that should be on top is all underneath, caused by malformation, coarseness and sometimes aided by fat.

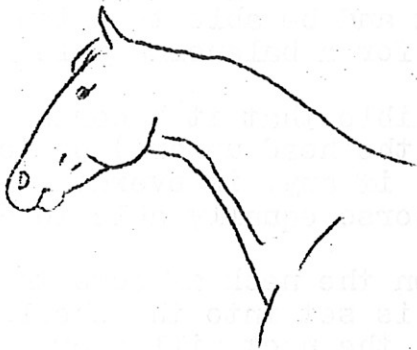
The ewe neck doesn't seem to detract from speed, but it does have drawbacks besides its ugliness. Any attempt at collection or even of control will often cause the horse to throw his head up to a horizontal (or higher) position, the ewe necked horse has to do this because he is physically unable to 'flex' at the poll and tuck in his chin! Thus the rider of the ewe necked horse may end up with the horse's poll in his teeth.

Between the two extremes of neck types (the arch and the inverted arch) there are a few more moderate types. These include the so-called 'straight' neck, of which there are two kinds. One is often seen on young horses where there is no crest at all, and although the lower line of the neck is arched upward, the topline is flat so the neck looks 'straight'. The other type is straight -top, bottom and middle.

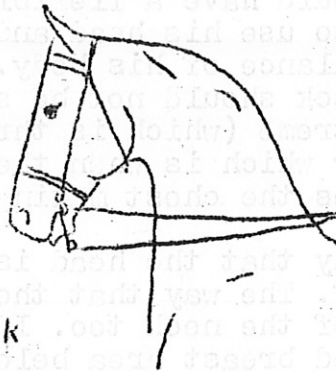
Besides the 'straight' necks, there is another, a cross between a 'ewe' neck and an arched neck. This type emerges somewhat low from the shoulders and for a short way follows the 'ewe' turn (pardon the pun) upward, only to rather abruptly change course and become arched about halfway up. This type of neck is shaped somewhat like a figure 'S' and is usually called a 'swan' neck. This type is equally as flexible and light as the more beautiful arched types, but it has an unsightly bulge on the underside of the neck and usually a sharp dip in front of the withers.

On the next page are some drawings of the different neck types, Remember- the arched neck is preferred; the 'swan' neck, and straight necks can be acceptable in a performance horse,; and the 'ewe' neck and the upside-down neck are not acceptable and are moderately severe faults.

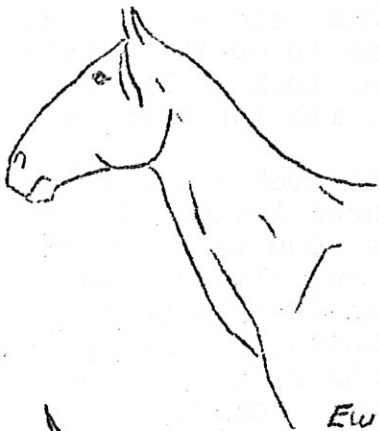
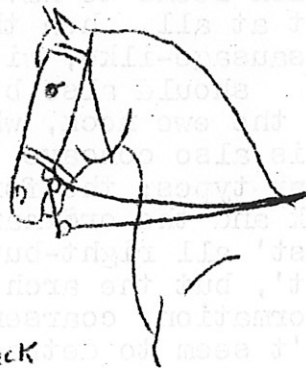
VARIOUS TYPES OF NECKS AND THEIR POSITION WHEN ATTEMPTS ARE MADE TO COLLECT THE HORSE



Arched neck



Swan neck



Ewe neck



'close-coupled' +  
Upside-down  
neck

Both the arched neck and the 'swan' neck can flex at the poll. But the ewe neck and the upside-down necked horses usually react to attempts at collection by throwing the head up as it is difficult to impossible for them to tuck their chins in properly.



## THE NECK AND THE WITHERS

Now it is time to 'connect the neck bone with the shoulder bone', since we have 'connected the head bone to the neck bone'. But first, the relationship between the neck and performance should be noted. Although some of the types of necks have been discussed, the customary kinds of carriage for different kinds of work haven't been covered. This is not just 'head carriage' but the position of the neck as well.

The carriage of the head is mainly determined by the form of the neck and the way it is connected with it. The most finished and pleasing appearance is given to the animal when the head is carried well up, with a gentle slope from above, downward and forward. Basically, the head should be carried at a 45 degree angle. In this position the field of vision is not restricted (the horse can see the ground in front of it with its head in this position). Also, this position allows the head an amount of freedom and mobility which is impossible when the head is carried at behind the vertical and the horizontal (over-bent and staring). Also this position allows more shoulder movement. When the head is carried in a low, depending position, it displaces the center of gravity forward which encumbers the forehand and robs the horse of elegance in movement.

The arched neck and the swan neck are desirable in a riding horse, in which grace, brilliance, and extent of movement are preferred. These types of necks offer the ability for the horse to carry his head and neck in the most desirable position for most any kind of work the horse may be required to do.

The neck should also be neither too long or too short as either will disturb the harmony of proportion and will also affect balance and the agility of the horse.

So, the neck is much more than just a means of connecting the head to the shoulders?

With all the publicity given to the shoulder, the withers are often overlooked. The withers are also important, especially to the performance of the horse.

The withers comprise the more or less elevated position of the spine placed between the back and the neck. They will vary in size and shape depending on the breed, age and sex of the animal.

When withers are high and thin from side to side they are called 'fine' or 'sharp'. When they are low and thick, they are called 'coarse'.

When the withers are high, there is increased freedom and energy of the head and neck, which is desirable. In addition to being high, the withers should also be ample in length from front to back and sloped so that they fall well into the back. Ample depth and slope of the shoulder are found when the withers are high and sloping. Under these conditions, the result is that the head is carried well, the forehand lightened, the play of the shoulder increased and greater liberty is given to the entire body. However, the withers should be usually thin, since this will cause difficulty in protecting them against injury from the saddle.

Coarse withers are thick and are usually low and lacking in length and backward slope. In such animals, the head is carried badly, the shoulders lack liberty and range of movement and the action of the front legs is restricted. The most common term for low and thick withers is the term 'mutton withered'.

## THE SHOULDER

The shoulder is considered to be of prime importance by all horsemen, even while remembering the 'no foot, no horse' and 'no hock, no hunter' maxims.

It is essential that the shoulder have ample length, the long blade-bone provides accommodation and attachment for muscles of proportionate size. The greater the length of the muscles, the more they will be able to shorten during contraction, and the greater will be the range of movement possible. A long shoulder is much desired in any horse that does work requiring long strides, and indeed is desired in all riding horses. When a horse has straight shoulders, the action of the forelegs is short, cramped, and conducive to concussion and wear on the legs. While length of shoulder is necessary, it is only when the shoulder is also adequately sloped that the shoulder can fully profit from its length. The desirable slope for the shoulder is about 45 degrees. High sloping withers, and a deep chest are usually found with a long, well-sloped shoulder. With these conditions, the shoulder muscles are able to enhance greatly the forward movement of the armbone and to favor the elevation and extension of the entire limb. Sloping shoulders also give liberty and elasticity to the gait and save the limbs from the injurious effects of concussion and wear.

While being long, and well-sloped, the shoulder should also combine a well-developed and symmetrical set of muscles, in volume and strength adapted to the special use of the animal. A hunter or any horse used for a purpose that puts strain on the forehand may have heavier muscles in the shoulder than say, a trail horse. But thick, fleshy shoulders in any riding horse are not only an eye-sore, they greatly detract from the liberty and harmony of the gait by overburdening the forehand. The usual term for this condition is 'loaded shoulders', and they are usually accompanied by coarse withers and an overly heavy neck.

The long and well-sloped shoulder is usually accompanied by a fairly short and fairly upright upper arm, while the opposite is usually true of the straight shoulder. A horse with a too long and too horizontal upper arm (the upper arm is the humerus, which joins the shoulder blade at the point of the shoulder, and the radius and ulna to form the elbow joint) seems to be 'standing over himself', with the forelegs placed too far under the body—this is often the case with the straight shouldered horse. The horse with much too short and upright humerus has a 'terrier front', which though usually accompanies a long, well-sloped shoulder, it nonetheless results in stitly action. The horse with the too long humerus will have a 'full-chested' effect, while the horse with the too short and upright humerus will be quite flat in the 'chest'.

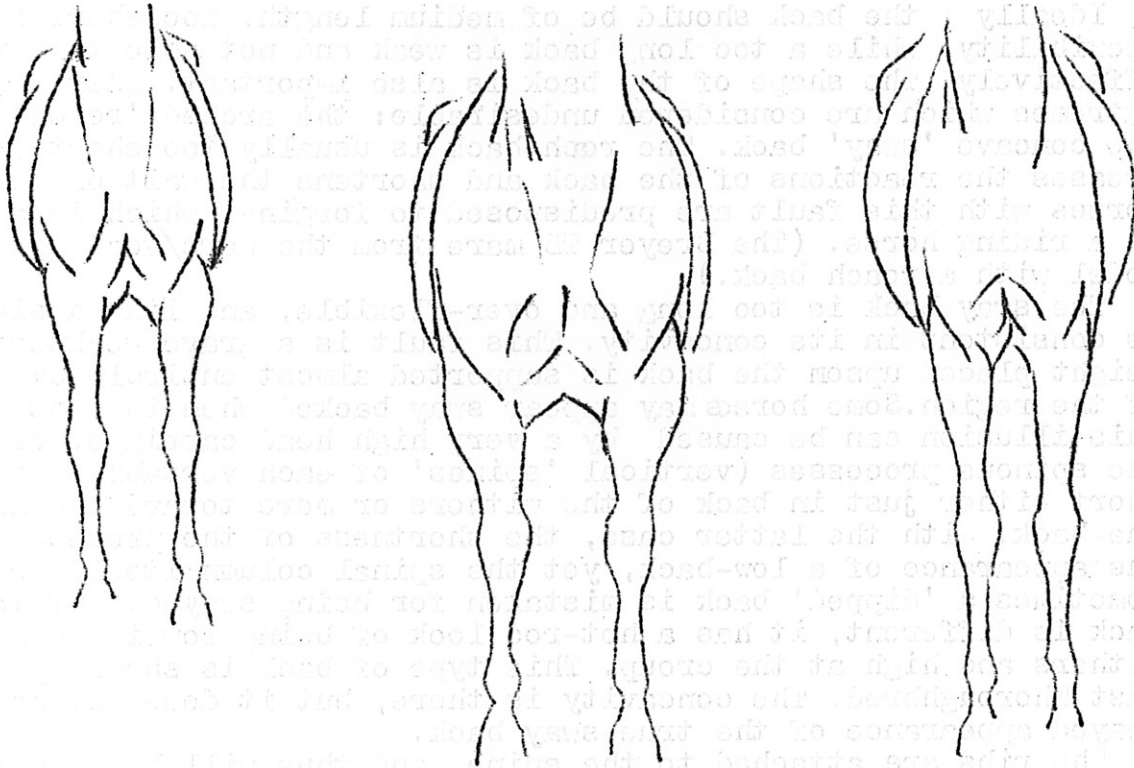
This brings us to the area below the neck, often called the 'chest', but the correct term is the breast. This area should be quite deep and well defined where the neck joins it. A 'wide' chest is actually only desirable in the draft breeds and to a certain degree in the working Quarter Horse. But, 'wide' instead of 'moderately wide' or 'moderately narrow' is undesirable in any other riding horse. The horse with the very wide chest will have a rolling motion to his gaits, which is not desirable. On the other side of the coin, the horse with the extremely narrow chest, where the front legs appear to 'come from the same hole', is also undesirable. This undesirability stems not so much from the idea that the narrow chested horse has less room for his heart and lungs. Rather, the extremely narrow chested horse, since his front legs are so close together, is far more likely to interfere with his front legs.

## FRONT VIEWS OF RIDING HORSES:

Left: 'moderately wide'  
(desirable)

Middle: too wide

Right: too narrow



## THE BACK

The back usually receives as much attention as the shoulder does, and, in fact, it depends on the slope of the shoulder and extent of the withers for part of its 'shortness'. The back extends from the withers to the loins, but often the loins are considered as part of the back itself. A horse with good slope and length of shoulder is naturally shorter backed than the horse with short straight shoulders. Also the height as well as how the withers blend into the back, affect the visual appearance of length of 'back'. The horse with low withers, very level back and equally level croup will also have the appearance of having a longer back than the one with more pronounced withers and a slight rise to the rump.

Some horsemen claim that the shorter the back is, the better. But, a too short back limits scope and flexibility. A short back and relatively short, powerfully muscled loin, is considered as being the desirable conformation for a good weight carrier, and all riding horses have to carry weight. A short loin also indicates a short coupling—the depression between the last rib and the hip bone—. The short-coupled horse has the added attraction of being an 'easy keeper'.

As long as we're discussing the back, let's dispell a popular myth. Many beleive that all Arabians (reknowned for its weight carrying ability) have 'one less vertabra' than do the other breeds of horses, usually it is said that they have one less lumbar vertabra. A study was done by Dr. Robert M. Stecher, with the results printed in "The Journal of Lammology". One of the many charts was a chart of the lumbar regions of the various



equidae. (The usual horse has 18 rib (Thoracic) vertebrae and 6 lumbar vertebrae). In this study, the skeletons of 10 Arabians were studied. Of the ten, only 3 had 5 lumbar vertebrae, the other 7, had 6 lumbar vertebrae. So it can easily be seen that not all Arabians have one less lumbar vertebra than the usual number. Thought that some might find that point interesting.

Ideally, the back should be of medium length. Too short a back limits flexibility, while a too long back is weak and not able to carry weight effectively. The shape of the back is also important. There are two main extremes which are considered undesirable: the arched 'roach' back and the concave 'sway' back. The roach back is usually too short and it increases the reactions of the back and shortens the gait of the animal. Horses with this fault are predisposed to forging, which is a detriment to a riding horse. (The Breyer TB mare from the Mare/Foal gift set is one model with a roach back.)

The sway back is too long and over-flexible, and like a slack rope is consistent in its concavity. This fault is a grave weakness and any weight placed upon the back is supported almost entirely by the ligaments of the region. Some horses may appear sway backed when in fact they are not. This illusion can be caused by a very high head carriage, or by when the spinous processes (vertical 'spines' of each vertebra) are abnormally short either just in back of the withers or more toward the middle of the back. With the latter case, the shortness of the processes would give the appearance of a low-back, yet the spinal column itself is normal. Sometimes a 'dipped' back is mistaken for being swayed. But the 'dipped' back is different, it has a hot-rod look of being low in back at the withers and high at the croup. This type of back is shown by an occasional fast Thoroughbred. The concavity is there, but it does not have the true swayed appearance of the true sway back.

The ribs are attached to the spine, and thus will be discussed here. The ribs should be well-sprung, well-separated, and should project backwards, they should also have good length. Ribs that are flat, short, little-inclined backward, spaced close together, characterize a horse that is short-winded and without power, regardless of his breed or intended use.

Ribs that project backward results in the well-ribbed-up conformation, and also usually results in a close coupling.

The flank area should have good depth, as this indicates that the horse has 'room for his groceries'. The well-conditioned horse may have a tucked-up look to the flank area, which is not to be confused with the fault 'herring-gutted' or 'single-gutted', also termed as being 'wasp-waisted'. Horses with this fault are obvious short in the back ribs and they're 'tuck-up' is like that of a Greyhound.

The loin shouldn't be overlooked. It should be wide, short, and well-muscled. A narrow, dipped, or 'slack' (usually too long) loin is a fault.

### THE CROUP

Beauty is in the eye of the beholder, and certainly the beauty, or lack of it, of a horse's croup depends on the opinion of the beholder and his attitude toward the virtue of 'level' vs. 'sloped'. However, whether sloped or level, the length of the croup is very important in any horse. The length is measured from the point of the hip to the point of the buttock. A long and fairly level croup gives more impulsion or 'drive', which is why length is so important.

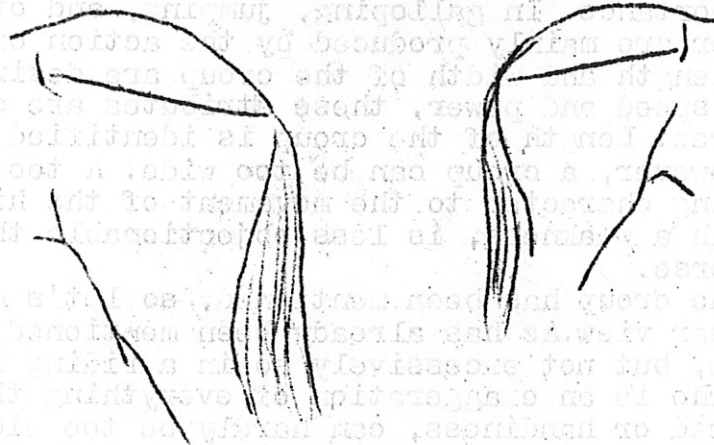
The slope of the croup will vary from horse to horse and from breed to breed. The Arabian ideally has a very level croup, the Quarter Horse a slightly sloped croup, etc. A very steep croup (extremely sloped-geese rump)



is considered to be a fault in a riding horse.

The slope of the croup depends on the placement of the pelvis and sacrum. Actually, a judge should take a look at the pelvis, rather than the shape of the croup. This can be done by drawing an imaginary line from the point of the hip to the point of the buttock. The truly goose-rumped horse will also have a steep slope to this line.

#### EXAMPLES OF 'LEVEL' PELVIS, BUT DIFFERENT SHAPE OF CROUP:

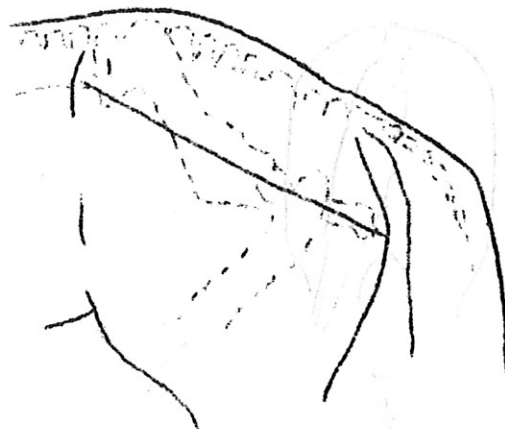


#### RELATIONSHIP BETWEEN SLOPE OF PELVIS AND THE SACRUM:



The so-called level croup desired in the Arabian. However, only the sacrum is level and the pelvis actually has slope. The following drawing shows a true goosierump.

The pelvis and the sacrum both slope downward, with a resultant very low set tail.

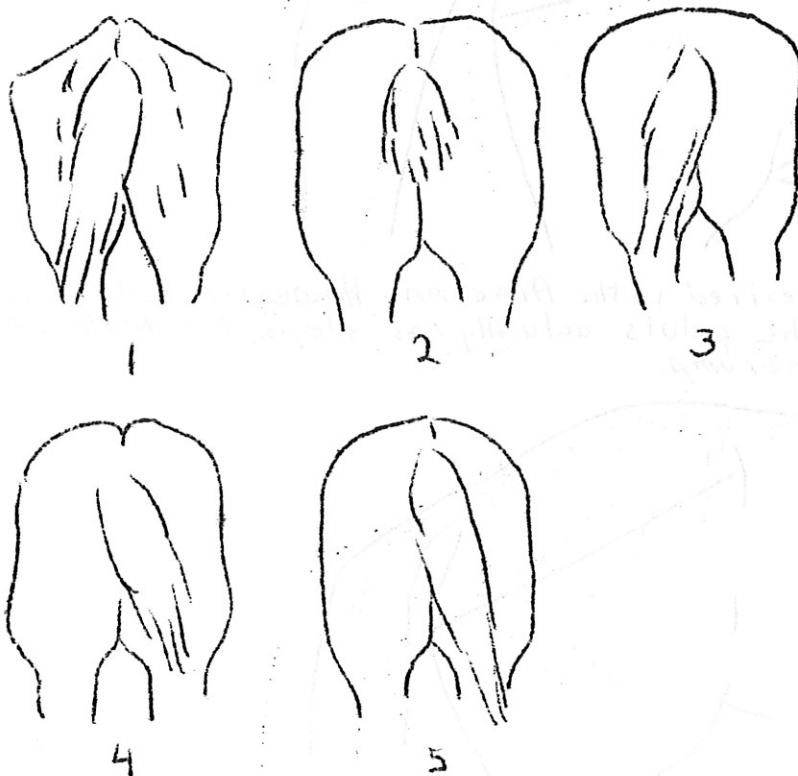


Since length of croup is important and desirable, it stands to reason that a short croup is undesirable. The so-called 'apple rump', in which the rump is rather short, quite round, with the tail low-set, resembling the stem of an apple is also undesirable.

Why is length, slope, shape, etc. of the croup and hindquarter in general so important? The answer is simple: The horse is essentially a living motor, thus the construction and development of this region is of extreme importance. In galloping, jumping, and other activities the speed and power are mainly produced by the action of the muscles of the croup. Since length and width of the croup are desirable and in fact necessary for speed and power, these attributes are desirable in most any riding horse. Length of the croup is identified with speed and width with power. However, a croup can be too wide. A too wide croup imparts a heavy, rolling character to the movement of the hindlegs. A narrow croup, although a weakness, is less objectionable than a too wide croup in a riding horse.

Width of the croup has been mentioned, so let's move from the side view to the rear view. As has already been mentioned, the hindquarters should be wide, but not excessively so in a riding horse. Naturally, a draft horse, who is an exaggeration of everything that stands for power instead of speed or handiness, can hardly be too wide in the hindquarters. The bulldog type Quarter Horse is also quite wide in the hindquarters, and even the Quarter Horse racer is broader in the quarters and has more heavily muscled gaskins than most other breeds. The 'pear-shaped' silhouette of the hindquarters (rear view) is considered ideal, while the opposite type, 'rafter-hipped', with the thigh very lightly muscled and narrow while the hips are quite wide is disliked in all light breeds. Another fault is the 'mule-hip', where the top contour of the croup (viewed from the back) is peaked.

HINDQUARTERS, REAR VIEW:



- 1) Peaked appearance of hips of an emaciated horse
- 2) The broad 'double' hindquarters of a draft horse
- 3) 'Rafter-hipped' - too flat across the top.
- 4) The 'pear-shape' so desired in the Quarter Horse.
- 5) Normal hindquarters, the croup well rounded and thighs forming a square.

## THE FORELEGS

Having taken a look at the horse from head to tail, we shall now go on to the legs, which do far more than just hold the horse off the ground. Besides supporting the body, the legs propel the horse forward, or backwards as the case may be.

The start of the foreleg is with the elbow. The elbow must be neither 'out' (usually the accompaniment of a bow-legged, toed-in foreleg) nor 'tied-in' which restricts movement.

Good width of the forearm is very desirable. Both width and development of the muscles at the top of the forearm are accentuated in the Quarter Horse. All of the muscling of the foreleg is concentrated most heavily at the top, becoming more tendonous toward the knee and all bone, tendon, and ligament below the knee. The forearm should be muscular; as its muscles have to do all the work of the leg below the elbow.

The forearm should also be long, both in its absolute length and in its length as compared to that of the cannon bone. The absolute length should be as great as possible for the reason that the length of the arc that this part makes is proportionate to its length, and also because a long forearm provides a corresponding length of the muscles which cover it.

A short forearm will produce a short step, thus a horse with short forearms will have to take more steps than a horse with long forearms to cover the same distance, thus wasting time and causing more fatigue (in the horse with the short forearms!). And with the knee being higher off the ground, the whole leg will be raised rather than projected forward, and the horse is said to have high-knee action. Of course, in certain types of horses this would not be a disadvantage, such as the fine harness horse or pony, the park horse, etc. A long forearm is desired in the hunter, the racehorse, etc.

The following relationship exists between the shoulder and the foreleg: shoulder-blade, long; humerus (from point of shoulder to elbow joint), short; forearm, long; cannon-bone, short; pastern, long.

The tendons of the lower leg should be well-separated from the cannon bone, and not tied-in below the knee or bowed.

The foreleg should be straight. Backward inclination creates the 'calf-knee' or 'back at the knee' fault. Horses with the fault are inclined to stumble, plus the leg is more apt to have lameness problems. Forward inclination is 'over at the knees', which is also a weakness. When from a front view, the knees incline inward, the fault is known as 'knock-kneed', also a weakness which predisposes the horse toward front leg lamenesses.

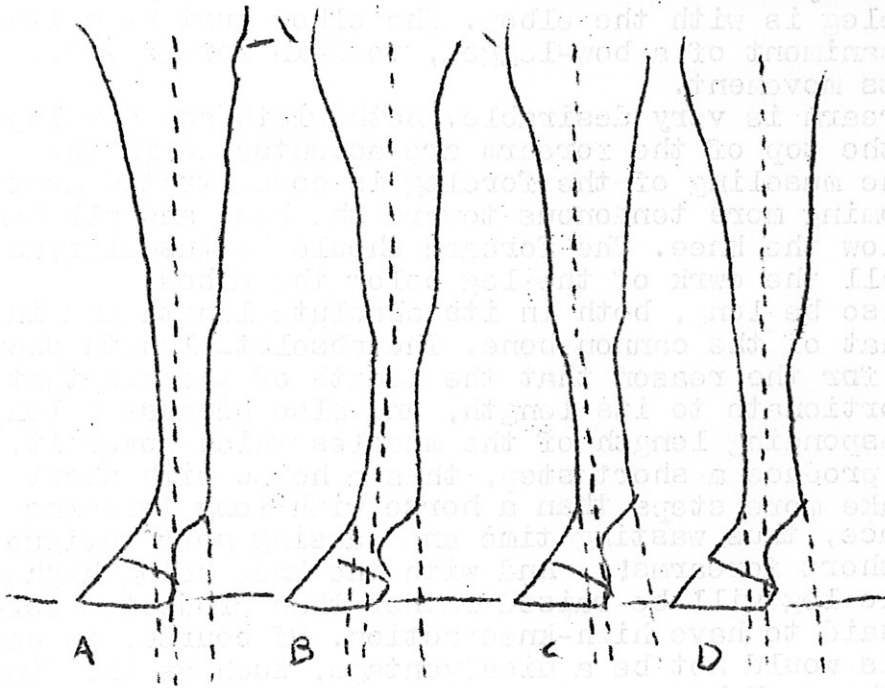
The knee is a very important joint and also can be easily disfigured. The knee is of much importance to conformation. It is a large and complex joint. From every point of view the knee should present ample space, its surface should be regular, and it should be clean and well defined. Roundness of the knee is objectionable, since it indicates a thick skin and an over-abundance of connective tissue beneath it.

From the side the knee should be wide from front to back. From the front the joint should present a broad, flattened surface for the accommodation of the extensor tendons which pass over it.

The calf-knee, over at the knee, faults have been mentioned. One more fault which is rarely mentioned is the 'offset knee'. In this fault, the leg is straight enough above the knee, but the cannon is set to the outside of the knee.



## GOOD AND BAD FORELEGS:



- A) Good, all lines plumb
- B) Calf Knees, backline is straight, but middle line slants slightly forward
- C) Back-kneed, All lines buckle forward
- D) Tied-in tendon, Cannon straight, but backline slants back.

## CROUP TO HOCK

The hind legs, while they do assist in supporting the body, are mainly organs of propulsion. The hind legs possess muscles that are larger and more powerful than those of the forelegs and are most effective in moving the body forward.

The buttock bounds the thigh in back, the flank bounds the thigh in front, and the stifle bounds the thigh below (in front) and the inward curve of the buttock in back. The thigh must be well muscled—both on the outside and inside of the leg. When the muscling on the inside is underdeveloped the horse is said to be 'split-up'. When the whole thigh is light, sharp at the buttock and the croup rather steep, the horse is said to be 'cat-hammed', this fault is indicative of weakness in the hind-quarters.

The stifle should be in a well-advanced position. A stifle too far back denotes a short thigh. The muscling should rise nicely over the stifle area. From the side the thigh should have a square appearance.

The gaskin or second thigh should be both long and broad, with an appreciable rise of muscle on the outside. Ordinarily the muscle on the inside of the gaskin is neither very evident, or much-mentioned, but it is quite well developed in the Quarter Horse.

The hock has the same function in the hind leg of the horse as the knee has on the foreleg. The hock is located somewhat higher on the hind leg than the knee is on the front leg. The hock is the most complex, as it is also the most important, joint concerned with forward movement. It is here that the strain in the efforts of propulsion mainly fall. It can be said that there is no joint in the body of the horse which presents



such a variety of natural conformation in different individuals as the hock, and none calls for such careful scrutiny and analysis of detail both as to conformation and soundness.

The first and most important requirement for the hock is size. The hock should be large, shapely and well directed. The bone forming its point should be long, so that the lever of which it forms an important part is increased in length and power, while width and strength are at the same time imparted to the gaskins. Viewed from the side, the hock should be wide from front to back and rest on correspondingly broad cannons. Any narrowing or 'tying in' at this point is a serious defect of conformation.

Viewed from the front, the bend of the hock should be full and clean, with ample width from side to side well maintained and proportioned from top to bottom.

Quality of the hock is important and will be marked by an absence of any roundness, a thin supple skin which shows the bones in sharp relief, imparting to the joint both leanness and neatness of outline. Full, round, 'meaty' hocks in which the outlines of the bones are obscured are considered to be a fault.

The direction of the hock is governed by the inclination of the gaskin above and the cannon below. When these bones approximate to a vertical position, the hock and the limb as a whole are rendered straight. It is this type of conformation (the straight hind leg) which is considered most desirable in most riding horses, for it does matter how strong the quarters may be, if the gaskin slopes backward too much or the cannon too much forward, the hock is no longer straight and the power of extending the hind leg is diminished. Thus speed in a racehorse, or power for jumping in a hunter, etc will be diminished. Also, the crooked hock is more likely to have soundness problems than the straight hock.

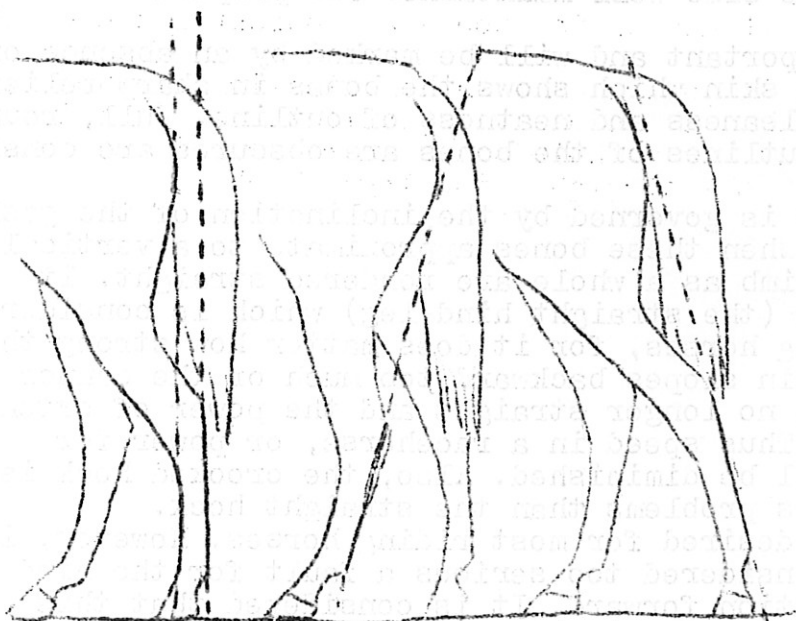
The straight hind leg is desired for most riding horses. However, in certain breeds, it is not considered too serious a fault for the hind leg to have a slight inclination forward. It is considered that this crookedness allows the horse to get his hind legs under him better. The breeds in which 'sickle hocks', as they are called, are not considered a fault (unless the hock is really crooked) are the Paso breeds and the Tennessee Walking Horse.

The most common way of deciding how straight or crooked a hind leg is, is to place the cannon so that it is in a vertical position. Then a 'plumb line' (imaginary on a real horse, on a photo it can be drawn in) is dropped from the point of the buttock. On a straight leg, the plumb line will touch the back of the cannon along the entire length of the cannon. A crooked hind leg will be in back of the plumb - this means that the back of the cannon is in back of the plumb line. A too straight hind leg will be in front of the plumb, with the back of the cannon well in front of the plumb line.

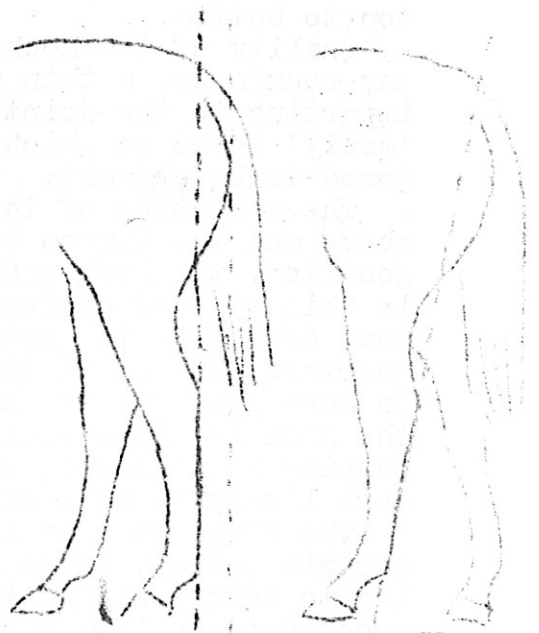
How does a person tell if a hind leg is straight or crooked when the cannon isn't in a vertical position? This is often the case with model horses that aren't positioned so they are standing squarely. The drawings on the following page show where a line drawn up along the back of the cannon and on up to the buttock will intersect the buttock when the leg is in various positions.

The opposite extreme of the crooked hind leg is the much too straight hind leg. This conformation results in a rather chicken-knuckle prominence to the front of the hock, and usually the pastern is either much too sloping, or it eventually breaks down and becomes so.

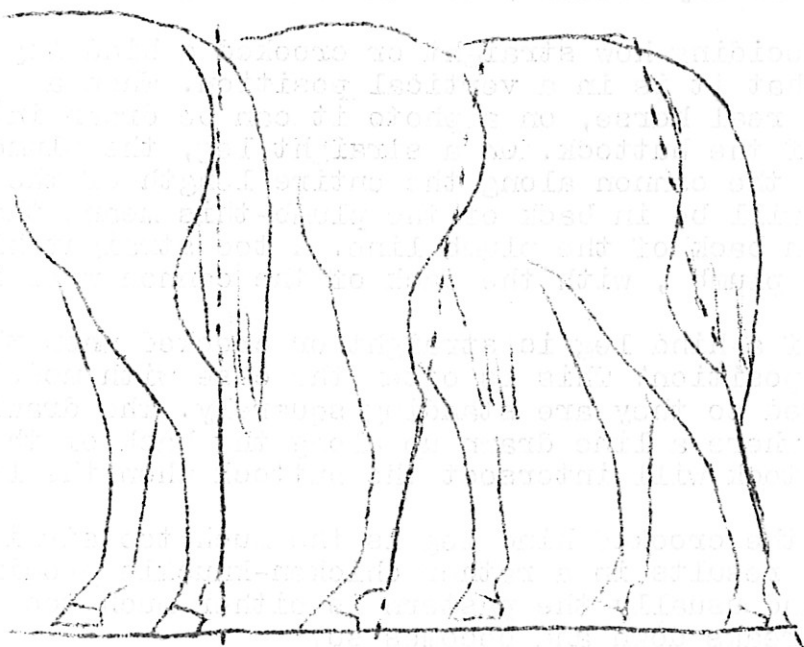
Another type of hind leg is 'crooked' yet not 'sickle' since the legs are not placed in what seems a perpetually-forward inclined position of the cannon. The hock is over-bent, but it is strong and the cannon wide in many of such cases. The term used to describe this kind of hock is 'having his hocks out in the country'. The difference between it and the sickle-hock is usually in the natural stance and the lightness of hock, or 'curbiness' that accompanies the sickle-hock. A curb is a lump in back of the lower part of the hock, caused by the sprain of a small ligament. Most any sickle-hocked horse that is asked to do work that causes strain on the hock (cutting horses, reining horse, jumpers, etc) will eventually pop a curb.



A) Crooked hind leg (in front of plumb)



C) (Hock is behind)  
Too straight hind leg  
(in front of plumb)



B) Straight hind leg (plumb)



## FROM THE HOCKS AND KNEES DOWN

No matter how beautiful the horse, or how well muscled he is, if the short expanse of bone and tendon below the knee or hock has gone bad, his future is hardly bright. Once a horse breaks down completely in this area he is of no use and is an instant candidate for Equicare. So, it is of extreme importance that there be no serious defects in this region.

The cannon of the foreleg is bounded on top by the knee and at the bottom by the fetlock joint. It consists of three metacarpal bones, with the central one being the largest and is the only one we can 'see'. This bone is commonly called the 'cannon bone'.

The cannon of the hind leg is bounded on top by the hock and at the bottom by the fetlock joint. In the hind leg the bones are called metatarsals.

The relative length of the forearm to the cannon has already been mentioned, but it doesn't hurt to emphasize. In relation to the forearm in front and the gaskin in back, the cannon should be short. When it is short the muscles experience less fatigue and contract to better advantage. A short cannon is lighter, moves more freely and does not need the same elevation of the limb to reach the limits of its movements.

Not only should the cannon be short, it should always be 'flat' from a side view. This side view takes in the tendon as well as the cannon. 'Round bone' is where the tendons are too close to the bone, thus giving a much rounder appearance to the cannon. The 'flat cannon' really does appear flat, with the back tendon paralleling the bone, but set well away from it, and with the tendons being well defined.

Other faults of the cannon include 'fine bone', 'heavy bone', and 'coarse bone'. When the bone is light and the tendons also too close to the bone, the result is a spindle legged appearance and the horse is described to be 'standing on air'. 'Heavy bone' is the opposite of fine bone and depending on how the expression is used, it means the bone is exactly right or too heavy. If the latter, it is coarse for the type of horse involved. When large-boned and coarse, the horse is said to have 'spongy bone'. When the tendon and the bone behind the knee are too small, but widens out at the fetlock, the horse is described being 'tied-in below the knee', and it does look as if a strap had pulled in the tendon below the knee. Being tied-in is not a deadly fault, since horses have gone through life having this defect without ever going lame, yet it is still considered a serious fault, perhaps because the tendons at the back of the knee are much smaller in such cases-in fact too small for the size of horse. Thus they are considered weaker than normal-sized tendons.

Calf-knees have already been mentioned (see drawing pg. 51), but since they effect the cannon as well, we'll go into more detail here.

The 'calf-knee' bends backward, with the line from fetlock joint to knee joint sloping back to the knee. It sometimes fools the eye if you look at the line along the back tendon rather than the cannon bone itself in front. This bone slants backward, but most of the time the tendon is straight up and down. Horses with this fault are more likely to have tendon trouble since the weight is more on the tendon than it is on both bone and tendon together. This defect is also called 'back at the knee'.

The 'buck-knee' is also known as 'over at the knees', knee-sprung, etc. There are two types of buck-knees, congenital and acquired. The former is not considered much a fault, but the latter is serious depending on the degree of severity. When the fault is congenital, there are compensating points, such as more sloped and longer pastern, while the acquired buck-knees, the pastern becomes upright and more conducive to concussion up the leg.



Getting back to the cannon; from a front view the cannon should be comparatively narrow (but always depending on the type and substance of the horse). The cannon should make great contrast with the ideal large, squarish, flat knees and good-sized fetlock joints. The whole cannon should be 'fine', characterized by the thinness of the skin and the sparseness of the connective tissue which shows the bone in clean detail, the suspensory ligament, the tendons and the blood vessels.

The cannon of the hind leg is similar in detail to the cannon of the front leg, but it is wider and stronger in appearance, and also is longer than the front cannon. As with the front leg, the tendon should parallel the bone throughout its length, being absolutely straight. Capped hocks, while they spoil the clean-cut straight line of the back tendon, they do not affect its use. The curb is far worse of a line-cutter, ruining the straight line with that bulge below the hock. The curb makes the hock appear as if it is coming apart at the seams. The average curb probably doesn't cause lameness or even limit performance, but a large and bad curb can.

There are some weak looking 'hooky' hind legs which seem to have an inward bow of the tendon, and whether this is due to over-development of the back of the hock and fetlock joint, or to a weak tendon, isn't sure. But, in either case, this too is an eyesore.

#### FETLOCKS AND PASTERNS

Now we get closer to earth, with the next point being the fetlock joint, also known as 'the fetlock' or as 'the ankle'.

The fetlock is the joint between the cannon and the coronet. This joint has an important function, other than just being 'there'. Elasticity. The tendons and ligaments around this joint by virtue of their tenacity and elasticity, transform this joint into practically an elastic spring which is admirably adapted for its function.

The function of the fetlock is an elastic mechanism or spring, which constitutes an apparatus of sustension and of dispersion. It relieves the muscles in charge of support of the body, and at the same time it prevents the effects of concussion against the ground by its elasticity.

The fetlock should be wide, well-directed, fine and free from blemishes such as wide-puffs, swellings, etc. It should not be too broad from front to back to the extent that it forces the back tendon out of line. The fetlock joint should be flat rather than round on the sides. It should be wide from side to side to allow good width of bearing surface of the bones.

The pastern is a much discussed part of the horse. And now wonder- you can see it work. The slightest shift in weight of a standing horse will elevate or depress the angle of the pastern. Thus the foreleg of a horse posed 'hunter style' will be back from the one on the side nearest the camera. The forward leg will show a bit more slope of pastern than the other. In fact if more weight is on the forward leg, the pastern of the far leg can be almost upright.

The ideal length of pastern is 'moderate' and the slope should also be moderate. Many writers state that the slope of the pastern should equal the slope of the hoof which is '45 degrees'. However, this figure can be disputed, as the pastern slope is usually closer to 60 degrees in front and 65 degrees for the hind pasterns. And the slope of the hoof is usually 50 degrees for the front and 60 for the hind hoof. Actually, a pastern with a slope of 45 degrees is on the flat or 'soft' side, and this is especially true for the hind pastern which is normally shorter and more upright than the front pastern. A pastern which is 'flat' or 'soft' is considered weak.

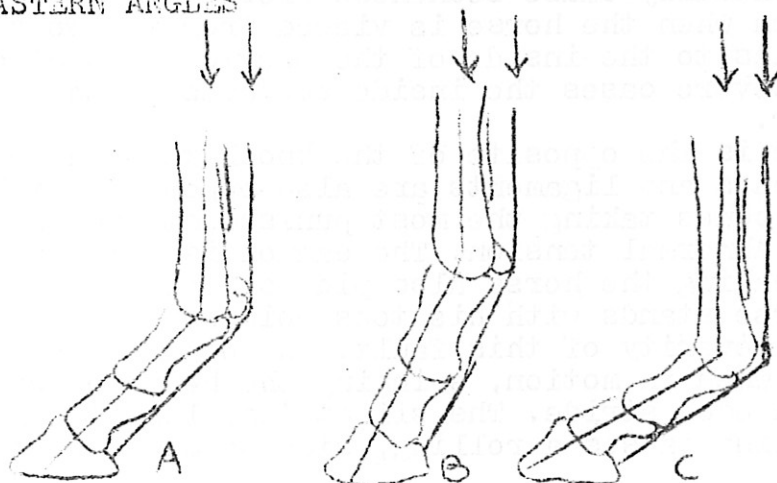


The pastern which is too-long and too-sloped is considered to be weak. The flatness of the angle puts undue stress on tendons and ligaments of the leg. The flat pastern, whether short, medium, or long, is known as 'soft' or 'easy', but usually the term used is 'coon-footed'. Eventually, this type of joint will break down, causing the horse to practically walk on his fetlock joints, thus this is a serious fault.

The short upright pastern is a real bone-cracker, both for horse and rider. Almost all the spring that the pastern is supposed to give is lost through the upright position of the pastern, and this is even worse when the pastern is also short. Since the short, upright pastern has very little spring or give to it, the effects of concussion are borne by the bony column of the leg. This places much more stress on the leg and horses with short, upright pasterns are more likely to have soundness problems than horses with the correct length and angle of pastern.

The back pastern is usually more upright and shorter than the pastern of the foreleg. Though sometimes they have almost equal slant and slope, which gives the hind leg a weak appearance.

#### PASTERN ANGLES



- A) Normal slope of pastern, giving equal distribution of weight to the bony column and the tendons.
- B) Upright pastern, giving too great a percentage of weight to the bony column.
- C) 'Coon foot' or too-sloped pastern which overloads the tendon.

#### THE HOOF

As far as models go, there isn't too much to cover on the hoof. One important point is that the hoof should be of sufficient size for the horse. There are several molds which appear to be large, muscular horses, yet they are perched on little, tiny feet.

While the too-small hoof may appear neat, it is defective since it reduces the width of support. This type of hoof is easily bruised and is always more or less sensitive. It is more defective than the over-large hoof as it is more disproportionate with the volume of body and the height of the horse.

The over-large foot, while less of a fault than the too-small foot, is still a fault, and not because it is unsightly. The over-large hoof causes the step to be heavy and awkward. The horse is likely to stumble and interfere.

Another hoof fault sometimes seen on models is the club foot. A hoof is a clubfoot when the hoof walls show little or no slope and the walls of the hoof are nearly perpendicular. With this condition are usually

very straight pasterns, heels that are too high, and the fetlock is thrown forward. Needless to say, clubfeet are a serious fault!

## MOVEMENT

Thus far we have mostly discussed the conformation of the horse from a side view. So now, we will look at conformation from the front and the rear, as many variations from normal occur here too.

There is an infinite variety of bad movement that is caused by the structure of the legs. In the ideal, a plumb line dropped from the center of the point of the shoulder to the ground would travel through the center line of the forearm, knee, cannon, pastern, and hoof. Obviously, not all horses are 'ideal' in this respect.

The most common faults are knock knees, bowed knees, splayed feet and pidgeon toes. These defects don't always affect both legs, they can affect just one leg. Knock knees result in less-than-straight action, and even worse this defect tends to overload the outer half of the bones, while stretching the internal ligaments to its limits. Naturally, this kind of stress will eventually cause soundness problems. The knock knee is a fault which is seen when the horse is viewed from the front. With this fault, the knee lies to the inside of the previously mentioned plumb line. In really severe cases the inside surfaces of the knees may almost touch each other.

The bow-legged horse is the opposite of the knock-kneed horse, and the strain placed on the bones and ligaments are also opposite, with the inside surfaces of the bones taking the most punishment and the outside ligaments subjected to abnormal tension. The cannon is twisted and the pasterns turn inward, making the horse also pidgeon toed.

The pidgeon-toed horse stands with his toes pointing more or less inward, depending on the severity of this fault. The pidgeon-toed horse will 'paddle' or 'wing' when in motion, swinging the hoof, or even the entire leg outward with each stride. The slight 'paddling' can be forgiven, but severe paddling causes a rolling, side to side motion which is undesirable.

The splay-footed horse stands with his toes pointing more or less outward. This fault is the opposite of pidgeon toes. The splay footed horse will move with a 'dishing' motion, with the hoof or leg swinging to the inside with each stride. This can be very serious as the horse can easily strike the opposite leg as the leg swings inward.

Horses which are very narrow in front are usually also 'base-wide'. In this case the horse stands with his feet rather spread apart, seeming to brace himself from falling over. The opposite of this is the wide-fronted (usually) horse that stands with his feet closer together- the straight line of the foreleg inclining inward rather than straight down. This fault can occur on horses with normal width. Many knock-kneed horses stand base wide. While many bowlegged horses stand base-narrow.

The very narrow fronted horse is inclined to interfere, especially when tired. The very wide-fronted horse is inclined to also be pidgeon toed, with the whole leg twisting inward.

Off-set knees are another common fault, and can occur on any type of front-narrow, broad, or 'normal'. As has already been mentioned, in this conformation, the axis takes a jog outward at the knee, then continues downward, rather than going down the leg in one direct line. This places more wear on the outside of the knee than the middle or the whole, if indeed it has any effect at all. This type of deviation doesn't seem to cause much if any change in straightness of movement.

While a horse with knock-knees, or whatever is made to order for im-

perfect movement, this does not mean that perfectly formed horses will always have absolutely straight movement. Many such 'ideal' horses can be seen dishing, paddling, etc, yet to all outward appearances there seems to be no reason for such deviations from straight movement. In fact, many of the best performers do not have absolutely straight movement. This is especially true of the high-stepping show horses and ponies, where winging is common, not because such horses are more inclined to have this fault, but because the very high action shows it more.

The real cause for concern about crooked legs, or straight legs and crooked movement, is the damage that can be caused, the unsoundnesses that can result from the twists, the strains, the overloading of inner or outer ligaments, etc. etc. Also all the foot-flapping inward and outward can cut down a horse's performance over any one period of time

The hind legs have their share of faults too. The most common is probably 'cow-hocks'. With this fault the points of the hocks will point somewhat towards each other, and the feet will be carried in an outward arc, with the size of the arc depending on how cow-hocked the horse is. Slight cow-hocks are not too serious a fault, but hocks which are so 'cowed' as to be nearly touching will cause a spaddling type of gait which is undesirable.

The opposite of cow-hocks is 'open hocks', or in plain English 'bow-legged'. In this fault, the hocks are comparatively far apart, the cannons slant inward to the feet, which are fairly close together and often a bit pidgeon toed. Open hocked horses tend to 'swivel' their hocks and twist the hoof with every stride. This causes an inefficient movement which is also ugly, not to mention the various ailments that all that twisting can bring on. This fault is considered to be far worse than cow-hocks.

Another type of undesirable conformation is the too-close placement of the hind legs. In this fault, the legs are straight enough from hock down, but are too close together, being only a few inches apart. It is normal for a narrow-built horse to stand this way, or one that is 'split-up' (so lacking in muscle that the thighs do not touch). Even horses of normal width can stand close, but in this case the upper half of the leg must slant inward to the hock rather abruptly. In this case the whole mechanism will be kilter and the horse would not be able to move in a reasonable straight manner. No matter what his width, the horse that stands close is quite inclined to 'move close' and will tend to interfere.

#### FAULTS COMMON TO MODEL HORSES

While most all of the faults seen in real horses are also seen in model horses, the reverse is not always true. There are faults which are seen in model horses that you would probably never see in a real horse.

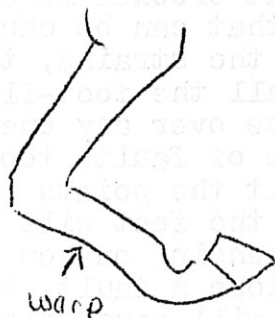
Most of these faults are seen in models that have been remade. The remade horse with some part of his body caved in is seen. This occurs when the remaker holds the model by its body while the body is still hot and thus soft. The pressure of the fingers causes a depression in the plastic of the body of the model. Needless to say, this is a serious fault in a model horse, sometimes the fault is so bad that the model appears to be a gross caricature of a real horse.

The opposite of the 'caved-in' model is the 'bloated' model. Again, seen in remade models. This fault occurs when the remaker forgets to allow some way for the heated air inside the model to escape (as the model is heated up for remaking, the air inside it also heats up and expands). Again, this is unrealistic and a serious fault in a model horse.



Probably the most common leg fault seen in remade models is the 'warped' leg. This occurs when the remaker tries to move a leg to a new position without making the necessary cuts in the leg. Simply heating the leg up and trying to pull it to a new position will often result in a leg with an ungainly 'dip' in it. This fault occurs most often in the cannon. Obviously when this happens, the leg is no longer straight. A fault of this type in a real horse would cause severe unsoundness, and thus should be severely faulted in a model horse. In fact, I usually won't even place a horse with this type of fault.

#### THE WARPED LEG:



There are also movement faults found in model horses, both in models fresh from the factory and in remade models. The two most common faults in motion are seen in trotting models and cantering models.

It is important to remember that the trot is a two-beat, diagonal gait. The left fore and right hind move together and the right fore and left hind move together. Each pair of legs will leave the ground and return to the ground at the same time. Often what is seen is a foreleg lifted off the ground with the tip of the hoof of the opposite hind leg still on the ground, when it too should be lifted off the ground. One model that has this fault is the Hartland 9" 3-Gaiter. With this type of fault, the model is not trotting correctly and should thus be knocked down in the judging.

The canter is a 3-beat lateral gait. However, in some remade models, the action that is supposed to be a canter more closely resembles the action of a pace. The pace, like the trot is a 2-beat gait. It differs from the trot in that where the trot is a diagonal gait, the pace is a lateral gait, with the legs on the same side moving in unison. A true pace is only appropriate in a Standardbred racehorse and is not appropriate in the majority of performance events. So, a model that is supposed to be in a cantering position should have a correct cantering position and if the position is instead that of the pace, then the action of the model is incorrect and should be penalized in the judging.

We have now covered conformation and breed type. In the upcoming sections we will take a look at how conformation and breed type are applied in judging halter classes and in the performance section at how conformation effects the judging of these classes.