Doberman On The Move©
By Robert L. Vandiver

The Doberman was originally bred for protection and accompaniment during Herr Doberman's rounds as tax collector. Through the history, the Doberman has been used for many tasks including delivering messages during war, patrolling military objectives, police work, search and rescue, guide dogs for disabled, and in ring sports including conformation, obedience, agility, tracking, and schutzhund. These varied tasks require that the Doberman use many gaits, depending on the task at hand.

Some breeds have natural gaits that are specific to them. Examples include the hackney gait of the Minpin, the flying trot of the German Shepherd, or the amble of the Old English Sheepdog. These gaits are characteristic of the breed.

The Doberman has been said to be a galloping breed, and it is most comfortable at that gait. However, upon observation of many Dobermans in a natural environment, you will find that the breed is comfortable in several gaits, including the walk, trot, canter, and double suspended gallop. The breed uses any and all of these gaits depending on the need.

For practical purposes, the Doberman is evaluated at the trot in the show ring (as are most other breeds). For this reason, this discussion will be limited to that gait.

Overview

The most efficient working dogs are those that can work the longest at their appointed duties with the least amount of effort. The efficiently moving dog travels in a straight line with the minimum amount of energy. It requires that there be no bouncing, rolling, or yaw (twisting on the vertical axis).

Length of stride of the dog is an important consideration. For a given dog, the fewer steps required to cover a given distance, the less energy is required.

In most dogs, the rear provides the major propulsive force for moving. The back and loin provide the rigidity to transmit the force from the rear to the front. The front carries about 60% of the weight and provides some additional propulsion.

The Doberman Standard describes the gait as "Free, balanced and vigorous with good reach in the forequarters and good driving power in the hindquarters. When trotting, there is strong rear action drive. Each rear leg moves in line with the foreleg on the same side. Rear and front legs are thrown neither in nor out. Back remains strong and firm. When moving at the fast trot, a properly built dog will single track."

Evaluating the side gait

Pictured below is a side view of the Doberman at a trot. The graphic was taken from The Doberman Pinscher Illustrated[1] issued in 2006 a booklet prepared by the Doberman Pinscher Club of America (DPCA).

We will begin the discussion with the first line of the movement description "Free, balanced and vigorous with good reach in the forequarters and good driving power in the hindquarters." Note the front reach and the rear extension in Figure 1 below

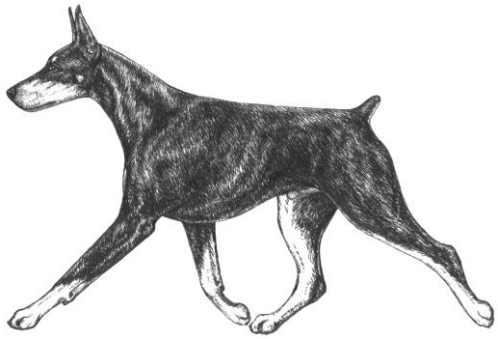

Figure 1

Using the same graphic we can draw a triangle over the dog as seen in Figure 2 below to visualize proper leg position.

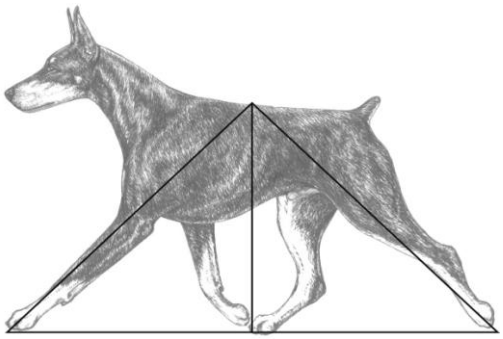

Figure 2

The front reach of the dog should result in a front extension approximately below the nose. The rear extension should balance the front with an equal kickback. As you can see, the triangle's apex is just above the point at which the front foot and rear foot exchange positions (about the center of the dog's topline). The angle that forms the front reach is about equal to the angle that forms the rear extension. This is balanced movement and illustrates correct Doberman side gait.

When evaluating gait, it is important to consider the elevation of the feet. If a dog lifts front or rear feet excessively above the ground, he is wasting energy. The closer the feet remain to the ground, the less energy is

required. There is an old dog term called "daisy cutting" that describes an efficiently moving dog as one whose feet are raised just enough to cover the rough ground, just cutting the tops of the daisies as he moves.

To study the side gait, follow the footsteps as the dog moves.

At the trot, the dog is continuously moving over the legs. The front foot strikes the ground slightly behind the nose and immediately moves rearward. As it moves it passes under the front assembly to the point at which it lifts from the ground to move forward again. The leg in the rear on the opposite side is simultaneously following the reverse path. It is leaving its extended position and moving forward under the rear assembly, and extending to about the midpoint of the dog's body.

Just under the center of the topline, the front foot lifts to move forward for the next step. The rear foot steps into nearly the same track that the front foot vacates. There is a very slight forward motion of the entire dog's body when both front and rear feet are off the ground simultaneously. This allows the rear foot to assume the same position as the vacating front foot. (Otherwise the rear foot would interfere with the front foot.) This slight forward motion is what Rachel Page Elliot[2] describes as the "spring" in the gait. It contributes to the look of "free and balanced" motion as described in the standard. Some characterize it as gliding or floating. This slight time "in flight" is not visible to the naked eye, but it has been demonstrated in Elliot's scientific studies[2] and it can be seen in the smoothness of the gait.

Since the rear provides for most of the propelling motion, it is important to note its action. The rear leg motion can be thought of as a 3-phase action. In the first phase the leg reaches under the dog to strike the ground at about the same point that the front foot is vacating. The upper leg and hip muscles are doing most of the work. In the second phase, the leg swings backward under the dog's hip assembly and uses mostly the upper leg assembly for its power. In the third phase, the rear leg continues from under the hip assembly rearward. A combination of the upper leg and the extension of the rear pastern provide the propelling force. Near the end of this phase, the rear pastern kicks back to provide most of the final propulsion.

The end of the last phase tells us why the rear pastern (a seemingly small part of the leg) is so important in the overall movement of the dog. Comparing a dog's anatomy to a human's is hardly exact, but the human's upper and lower thigh is analogous to the dog's upper and lower thigh. The ankle is analogous to the dog's hock, and the human foot is used similarly to the dog's rear pastern. Toward the end of the step, the human pushes off with the foot. The same is true for the dog with the rear pastern. You can imagine how you would move if your feet were confined by tape such that you could not flex your foot. You couldn't provide that final push for your forward propulsion. The same is true of the dog. This illustrates the importance of the rear pastern power at a trot … human or canine.

The standard states "Back remains strong and firm." This simply requires that the dog's back be reasonably rigid and strong, and not bounce due to looseness, length, or incorrect proportions or angulation.

The topline of the Doberman should remain level and straight.

A Doberman that bounces over the withers has a serious handicap. Let's try to quantify the affects of a bouncing front due to a combination of structural deviations.

If a male Doberman has a stride of 28 inches at the trot (2263 steps per mile), and the withers move up and down 1/2 inch with each step, then the dog's front will expend the energy equivalent of lifting it 94 feet while traveling that mile. Since the dog's front is about 60 % of the dog's total weight, then the dog would have expended 60 % of the energy to raise his entire body the 94 feet. In other words, after trotting for a mile, the dog will have also expended the energy equivalent to climbing a 6-story building (60% of the 94 feet). The extra work expended in an hour of trotting (typically at 5 miles per hour) would be the equivalent of climbing 30 stories. After a days work, this dog will be far more exhausted than one that moves without bounce over the withers.

Moving on with side gait, the head carriage should be extended somewhat above the horizontal as shown in figure 1. This is a natural head carriage for the Doberman at the trot. The Doberman should not move with its head extended straight ahead as if it were a draft animal or with the head up and back as is typical in a Poodle.

Evaluating the down-and-back gait

The down-and-back gait is described in the standard as "Each rear leg moves in line with the foreleg on the same side. Rear and front legs are thrown neither in nor out. … When moving at the fast trot, a properly built dog will single track."

Figure 3 below shows the correct movement down and back for a Doberman. Figure 4 has lines added to emphasize that the leg forms a straight-line column and moves in the same plane as the opposite leg on the same side and converge toward a centerline under the dog.

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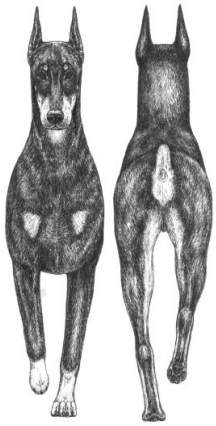

Figure 3

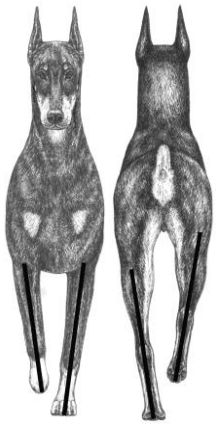

Figure 4

The legs should be straight throughout their travel, not just at the beginning and end of the step. The standard calls for the legs to " not be thrown in or out." This precludes certain deviations of structure that are discussed in the next section.

Notice in Figures 3 and 4 that the rear legs cannot be seen when the dog is approaching, because the front legs are moving in line with the rear and covering them. Similarly, when viewed from the rear, the rear legs cover the front legs.

The importance of moving with straight legs can be appreciated if we compare the dog's legs with human legs. It is truly a rare human endurance athlete that does not have very straight legs. Knock-knees or bowed legs do not allow the forces to travel directly though the joints. Rather, they cause a lateral force in the joints that will damage the joints over a period of time, and cause the athlete to move inefficiently. The same reasoning applies to dogs that do not maintain straight legs throughout the travel.

The standard calls for the dog to single track at a fast trot. The purpose of the single track is for balance and conservation of energy. Consider a dog that doesn't single track at the trot. Such a dog would have a tendency to have a body roll. This can be illustrated by Figure 5 below:

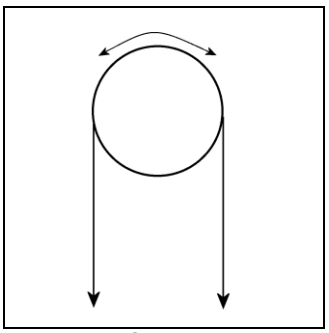

Figure 5

The legs are on the corners of the dog. If the dog moves without converging, there will be a tendency to have a body roll. This occurs because only one leg of a pair (front or rear) is on the ground at the same time. When one rear foot is on the ground, the other rear foot is moving for the next step. The same is true of the front pair. When only the left leg is supporting the dog, there will be a tendency for the dog's rear to roll to the right. When only the right leg is supporting the dog, there will be a tendency to roll to the left. The dog's front and rear legs move opposite of each other. This would cause a rolling of one direction in the front and a rolling in the other direction in the rear. This rolling gait is well illustrated on wide set dogs, such as the Bulldog.

Although some Dobermans fail to converge properly, they do not have an exaggerated rolling or twisting of the body that is seen on the wide set dogs. However, the tendency is still there for the dog to move similarly to the Bulldog. It is not an efficient gait for a working dog. When judging the Doberman, convergence is an important point.

The dog must also move in a straight line with a straight body to be an efficient mover. Some structural faults will cause a dog to move with a yaw or in a "side-winding" or "crabbing" gait. This takes away from our desire to have the dog move in a straight line, with minimum bounce, roll, or yaw. Although the dog will appear to move in a straight line, it will not move with its body (spine) in line with the direction of motion.

How structure affects movement

At a show, the judge does a static evaluation to consider head, color, coat, condition, temperament, structure, etc.. The structural considerations in this evaluation can often predict how a dog will move, but there are reasons why the conclusions reached from the static structural evaluation do not match how the dog really moves.

The structure and the musculature of the dog control the movement of the dog. If the dog is in proper physical condition (weight, muscle tone, and ligament and tendon strength), then its musculature is not a consideration. The dog will then move as well as the structure will allow.

However, lack of proper musculature and conditioning can make an otherwise correctly structured dog move poorly. This is particularly noticeable in front movement. The shoulders are not connected to the rest of the structure through joints, but rather they are connected through soft tissue (muscles, tendons, etc.). It is entirely possible for a dog to move incorrectly through lack of conditioning rather than through fault of structure.

Most judges agree that observing the movement of the dog is ultimately the best way to determine if the static evaluation is correct.

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To move correctly the dog must be structured correctly. The correct Doberman structure taken from The Doberman Pinscher Illustrated[1] is illustrated in Figure 6 below:

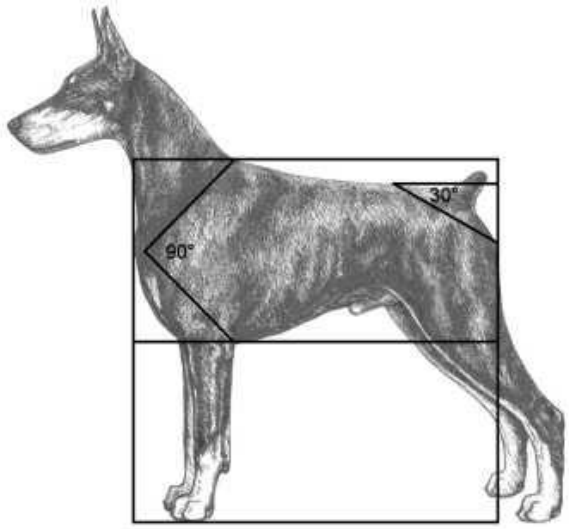

Figure 6

This structure exhibits the proportions and angles that define a correct Doberman Pinscher. Deviations from this structure will cause deviations from the ideal movement.

The following highlights how certain structural deviations affect movement of the Doberman.

The first structural issue is the very important requisite that the Doberman be square. Two variations can occur. The dog is too long in body, or the dog is too short in body.

Unlike breeds whose bodies are longer than tall, a square dog must really be built to the correct proportions and angles if it is to move correctly. There is simply no extra room to accommodate any interference between front and rear legs on a square dog.

Consider a square dog with an over-angulated rear relative to the front. The excess rear angulation causes an over-reach in the rear so that his rear feet interfere with the front feet. A square dog must find a way to compensate for the imbalance so that his legs do not interfere under his body. He can compensate by moving with his rear feet to one side of the front feet, or he can move wide in the rear so his rear feet don't strike the front feet.

A longer bodied dog offers more room under his body, so his feet will not interfere. The extra room forgives faults that would be readily apparent in a square dog. The longer bodied unbalanced dog may appear to move correctly, but he has two faults, imbalance from front to rear and too long in body.

A Doberman with leg length longer than body depth will have the same problem with interference under the body. There will not be enough room under the dog to place his feet without interference, because the long legs "overstep" what his body length can accommodate. His back feet strike the front feet before the front foot can get out of the way. His compensation is similar to the dog that is overangulated in rear relative to front.

Typical movement for both of these deviations in structure is a dog that "side-winds" or "crabs" when he moves. He moves with his rear to one side of his front, so that his rear feet strike the ground to one side of his front feet. This gives him the appearance of moving sideways or moving like a crab.

Another means to compensate for this structural deviation is the dog that moves wider in the rear than in the front. This occurs in Dobermans occasionally, but the breed is much more likely to side-wind than to move wide in rear.

Continuing with the subject of front structural deviations, consider shoulder angulation. The standard calls for the shoulder to be at 45 degrees from the vertical. There is an old adage that says that a dog "can't reach past his shoulders". This means that when the dog extends his leg for the step forward, the angle of the leg will be controlled by the angle of the shoulder.

A dog with a steeper shoulder than in Figure 6, say 35 degrees from the vertical rather than 45 degrees, cannot reach as far forward. One result is a dog that takes shorter steps both front and rear. Think about a person whose normal stride is shortened by 10%. That person suddenly has to take 10% more steps to cover the same distance … an uncomfortable gait. The same applies to the dog. For a given dog, the longer the natural stride, the more efficient the gait.

Although the front and rear move at the same speed with the same number of steps, it's possible that the stride lengths are not equal. This can happen if the dog is unbalanced with more rear angulation than front angulation (a common occurrence in Dobermans).

In this case his front stride is shorter than his rear stride. To compensate, he must lift his front higher than normal to keep it in the air longer, while his rear takes longer strides. The front is taking shorter strides, but is airborne for a short time. This structure causes the dog's front to bounce up and down and is a very inefficient gait as was quantified earlier.

The correct Doberman front as viewed from the front is shown in Figure 7.

Figure 7

In the correct front, the legs are in a straight line from the shoulder through the elbow, pastern and feet. They are parallel to each other and stand under the dog's shoulder.

Typical deviations of front are shown in Figure 8 and include, elbow out, pinched front, toeing-out, and toeing-in.

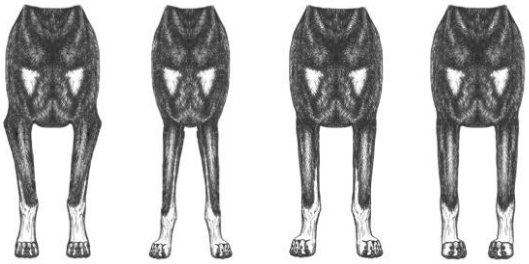

Figure 8

We will not speak to each one of these faults individually, because they all share a common trait. Plainly, none of these front structures will allow the dog to move with the legs in a straight column simply because the legs are not structured in a columnar manner in the standing position. The forces of movement will transmit through the joints, but because the legs are not straight, the joints will flex laterally and absorb some of the energy. This stresses the joints and tires the dog.

In addition, the pinched-front deviation will cause the dog to throw the front legs from side-to-side, wasting even more energy. The dog that elbows out will typically throw the front legs outwards as he moves … another inefficient gait.

Before leaving the front, it is important to consider the feet and pasterns. The standard describes them as "Pasterns firm and almost perpendicular to the ground. Dewclaws may be removed. Feet well arched, compact, and catlike, turning neither in nor out."

Figure 9

Figure 10

Figure 9 illustrates the correct pastern and foot. The slight slope in the pastern provides a spring in the front to absorb shock, while the tight feet provide a firm base to support the dog.

Figure 10 shows a weak pastern and a foot that is not "cat-like". The weak pastern flexes excessively each time the foot strikes the ground, absorbing energy that should be used to propel the dog. Similarly, the weak foot absorbs too much energy and it is an area prone to injury. Both of these can lead to inefficient movement and early injury.

Having completed the front structural deviations, now consider the rear. Rear movement is easier to judge than front movement because the legs are joined to the rest of the structure through joints, not through soft tissue alone. Rear movement is more influenced by structure, and not as greatly influenced by conditioning. Also the movement of the rear is less complex than that of the front, because the shoulder moves up and down and rotates through its normal movement. The rear does not have this complexity.

The standard describes the rear as follows:

"The angulation of the hindquarters balances that of the forequarters. Hip Bone- falls away from spinal column at an angle of about 30 degrees, producing a slightly rounded, well filled-out croup. Upper Shanks- at right angles to the hip bones, are long, wide, and well muscled on both sides of thigh, with clearly defined stifles. Upper and lower shanks are of equal length. While the dog is at rest, hock to heel is perpendicular to the ground."

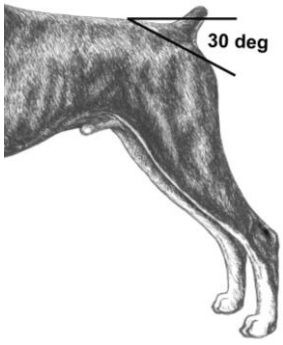

Figure 11

The standard describes the rear structure well when viewed with the illustration in figure 11. The only aspect needing clarity is the hock (rear pastern) length, since it is so vital to the correct movement of the dog.

The illustrated standard establishes the correct length of hock, even though the standard does not describe it in words.

Since the Doberman is described in the standard under General Characteristics as "Compactly built, muscular and powerful, for great endurance and speed." one would expect to see a hock that is moderate in length to achieve the desired balance of endurance and speed. A long rear pastern is normally associated with sprint type animals such as rabbits or antelopes … good for short bursts of high speed, but not endurance. A short rear pastern is normally associated with a draft animal … slow but powerful and enduring, but not capable of great speed. Since the Doberman is neither of these we must reach a balance, so a moderate length of hock-to-foot is desired.

One good way to understand correct rear structure is to study typical deviations. Some deviations are shown in Figure 12 and represent from left to right an overangulated rear, a straight rear with a flat croup, and an overangulated rear with sickle hocks and a steep croup.

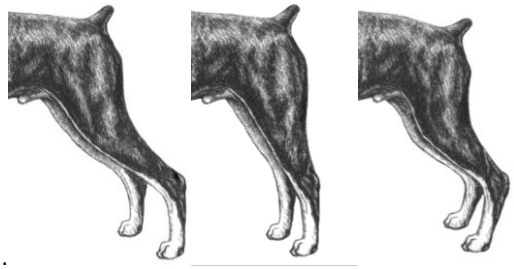

Figure 12

The overangulated rear seldom matches an overangulated front. Therefore, most dogs with this fault are also unbalanced. The over-angulation causes the rear to over reach the front as explained previously. The dog typically compensates by moving wide in the rear or moving the rear to one side of the front (crabbing).

The middle graphic is straight in rear with a flat croup. The expected result is a restricted rear motion. The dog can't reach under far enough. His straight stifle and flat croup won't allow the rear to extend (similar to a straight front not allowing correct reach). The straight hock joint doesn't provide enough power to follow through for the rear pastern "push-off"

The overangulated rear and sickle hocks are particularly troubling. The same problems occur as the overangulated dog above, but with the sickle hocks the rear pastern can't straighten. A dog with these faults will normally move with his rear under him, never extending with power. The steep croup will also limit rear extension.

A combination of faults that are seen from time to time in Dobermans is an overangulated rear with a flat croup. This dog will appear to move correctly because the flat croup compensates for the overangulated rear and allows it to reach back. It appears to be correct, when in fact there are two deviations in the dog, rather than none.

The standard also states "Viewed from the rear, the legs are straight, parallel to each other, and wide enough apart to fit in with a properly built body. Dewclaws, if any, are generally removed. Cat feet- as on front legs, turning neither in nor out."

Again, the standard and the Illustrated Standard graphics do an excellent job of describing the desired structure of the rear when viewed from behind.

Figure 13

The standard emphasizes the need for the legs to be straight. This will allow the dog to move with straight legs as shown in Figures 3 and 4.

Other typical deviations are shown in Figure 14 below and have the same common problem that we saw in the front deviations. These legs are not straight as required even when standing in the normal position (the left being cow-hocked and the right being open hocked).

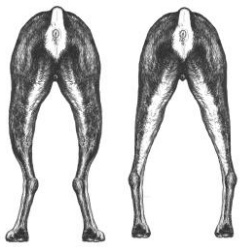

Figure 14

When the dog moves the forces of movement will cause the joints to flex laterally, absorbing energy and causing undue stress on the joints. This will wear the joints and tire the dog.

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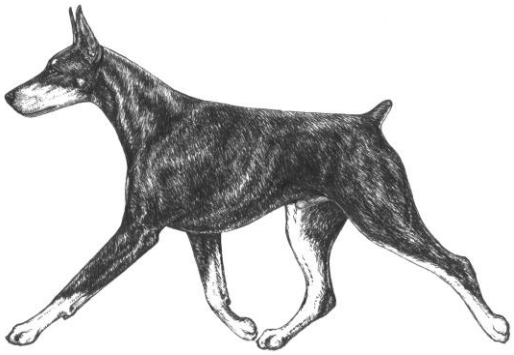
Summary

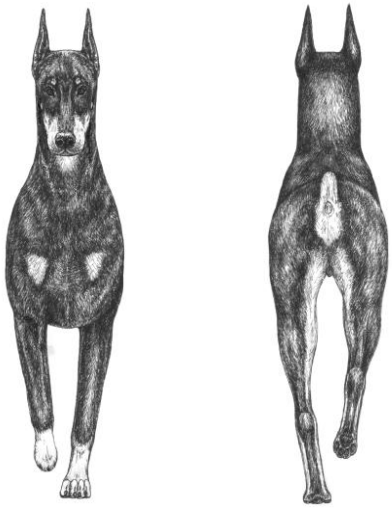
In the beginning, this article explained the correct side gait and the correct out-and-back movement for the Doberman Pinscher. The intent was to instill a vision of the correct movement of the Doberman in the reader's mind.

Later, the article describes the mechanics of gait and discussed how certain structural traits affect it. Structural faults were used to describe incorrect movement. Using faults helps to understand how the dog should not move.

Although it is important to understand faults and how they affect gait, the reader must be careful not to fall into "fault judging" as the primary means of evaluating movement. Good judges first recognize merits, and then evaluate the dog's movement based on balancing the virtues against faults.

To emphasize the importance of positive judging, below you will find a repeat of the illustrations of correct movement along with a repeat of a description of correct gait as described in the standard. Hopefully the reader will focus on these as the most important element of this paper.





From the Doberman Pinscher Standard
Approved February 6, 1982
Reformatted November 6, 1990

"Free, balanced, and vigorous, with good reach in the forequarters and good driving power in the hindquarters. When trotting, there is strong rear-action drive. Each rear leg moves in line with the foreleg on the same side. Rear and front legs are thrown neither in nor out. Back remains strong and firm. When moving at a fast trot, a properly built dog will single-track."

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