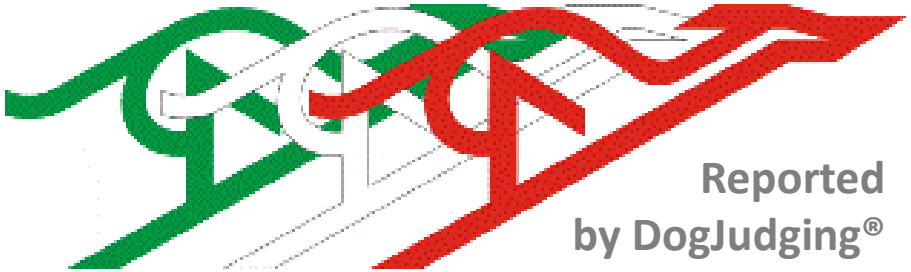
Afghans bred for lure coursing and racing purposes drift away from the «globalized» type, bred for show purposes

Comparison between models

Padenghe sul Garda (Italy) – 1st May, 2014

Speaker: Mario Canton



Biological Principle

Form follows function

- **If a dog is to function efficiently, it must be built to function efficiently.**
- **If a dog is not an athlete to begin with, all of the training in the world will not make it an athlete.**
- **If a dog is not built to be swift, training will not make it swift.**

Ultimately …

… the only way to tell what form functions efficiently is to observe animals under controlled working conditions.

This is the basis of a scientific approach to dogs.

Aestethic Approach

An aesthetic approach would be to decide what form is beautiful and then predict how it would function under working conditions.

Being built properly does not ensure excellence in performance; it is only an indicator of what might be.

Certain things can never be evaluated by static observation alone; only demonstration by performance under working conditions will show true proficiency.

By looking at the standing dog, no one can determine the dog's desire to do well or the dog's ability to manufacture fuel quickly.

Bred for a purpose

If different functions create different forms, then:

Show AH ≠ Racing AH

Racing AH ≠ Lure Coursing AH

Lure Coursing AH ≠ Coursing AH

Coursing AH ≠ Hunting AH

Hunting AH ≠ Show AH

Note: [AH] = Afghan Hound

Function Trends
(related to **Performance**)

- **Endurance Trot**
- **Endurance Gallop**
- **Top Speed Gallop**
- **Agility**
- **Running Uphill**

Note: some Function Trends can be combined

Form Trends
(related to **Morphology**)

- **Endurance Trotter (show)**
- **Top Speed Galloper (racing)**
- **Endurace Galloper with Agility (lure coursing)**
- **Top Speed Galloper with Agility (coursing)**
- **Endurance Galloper with Agility & Running Uphill (hunting)**

Structural differences responsible for gait differences

- **Factors observed in the posed position:**
  - Height at withers compared to body length
  - Length of leg compared to body depth
  - Depth of chest compared to its width
  - Angulation and leg condition
  - Muscular condition

- **Factors observed during movement (trotting):**
  - Movement of legs:
    - Parallel
    - Converging
    - Single tracking
    - Converging with crook
  - Flip up of pastern
  - Use of angulation

- Extent and orientation of reach and extension
- Height of paw lift and its path during motion
- Up and down motion of the topline
- Flexibility of topline
- Plane of motion of legs
- Body pointed in the direction of travel
- Lameness

Trotters & Gallopers

In general:

- if a dog functions at the gallop in its service to man, it is classified as a **galloping dog**.

- if a dog functions at the trot in its service to man, it is classified as a **trotting dog**.

Features desirable in Trotting Dogs

- Internal soundness.
- Except for a small arch over the loin, the back between the withers and croup is level and the tail comes off level or nearly level.
- The length of leg below the chest is as long as or a little longer than the depth of chest (1 to 1 up to 1 to 1.1).
- The length of body from forechest to buttocks is longer than the height at the withers by 10% to 20%.
- The height of the hock joint is not more than 1/5 the height at the withers, and the height of the pastern joint is a little less than the height of the hock joint.

- The elbow comes to the bottom of the chest or slightly lower.
- The shoulder blade is laid back about 28 degrees off the vertical as measured on the spine of the blade.
- The hind leg joints are moderately angulated (about as on a jackal or coyote).
- The body is not heavy in proportion to size (about like a jackal, coyote or wolf) and each end of the body is the same height.
- Legs are medium in bone.

Features desirable in Galloping Dogs

Dogs which show greater skills at galloping than at trotting have:

- long legs (distal legs longer than the depth of chest),
- are not heavy in build,
- usually use the pace-like walk or the pace in their slower rate of travel, to avoid interference.

The exact line of demarcation between what is classified as a galloping dog or trotting dog is not clear, one merges into the other.

Types of galloping dogs

Galloping dogs can be divided into five types:

(1) Breeds with a **fallaway arch** in the croup as seen in Greyhounds, Whippets, Bedlington Terriers and possibly Manchester Terriers;

(2) Sighthounds designed for speed on **level ground** (Salukis, track Greyhounds, etc.);

(3) **Uphill gallopers** (Afghans, Deerhounds);

(4) Short-backed **endurance gallopers**, such as Arctic sled dogs of the native Siberian type;

(5) **Dogs** using the gallop, but who do not need ultimate perfection for the swift gallop at the time they are performing their function, such as Pointers **quartering or** dogs **herding**.

Note: For some of the dog show herding breeds, some have been developed into better trotters than gallopers.

Evolution by selective breeding

Domestic dogs evolved from a sustained traveler, the wolf or a wolf-like ancestor of the wolf.

Over a long period of time, some domestic dogs, such as sighthounds, had their structure altered from a sustained traveler to a speedster.

In the process, ideal sustained trotting performance did deteriorate to a certain extent; swift galloping structure is not conducive to the development of ideal trotting style.

In England the Greyhound type dog was refined to be a specialist in coursing hare with speed.

For greater agility in maneuvering with the hare, the fallaway arch over the loin and croup came into being.

To a certain extent, the fallaway arch reduces speed.

In the development of flat track racing Greyhounds, the fallaway arch was diminished or deleted.

In the mountainous part of Afghanistan, the up hill galloping type of Afghan came into being.

In the Arctic, the need for endurance, fair speed and resistance to cold led to the development of Arctic-type dogs.

Each of these types, because of their difference in functions, have differences in their galloping and trotting styles.

Running Uphill

As before stated, a type of galloping dog is the uphill galloper whose classic form is exemplified by wild mountain goats and sheep; their leg muscle arrangement favors lifting the body of the animal upward; high speed muscles are not of primary importance.

For such ad vantage in goats and sheep, the gluteal muscles on top of the pelvis are less massively developed.

Wild goats and sheep are swift in uphill travel but not swift in flat land running.

The mountain Afghans, in their native rough terrain, tend to be of this type.

Steep Pelvis

Animals that live in mountain areas developed the ability to travel uphill with power.

In general, their pelvis appears rather steep, partly due to underdevelopment of the gluteal muscles located on top of the pelvis, as illustrated by a goat.

Because of the mechanical arrangement of the gluteal muscles they do not deliver significant power to the paws, and for those animals that specialize in escape or pursuit uphill, the gluteal muscles are of little use (they are very useful for high speed running on level ground as in Whippets or Greyhounds).

Early imports of the mountain type Afghan, which was developed in Afghanistan for uphill pursuit, had poorly developed gluteus muscles and the pelvis appeared steep partly because of the decreased muscle mass on it.

What is agility?

Agility = Less inertia to change direction

For dogs of the same size, those dogs with:

- arched lumbar region,
- steeper croup,
- greater angulation,
- legs well under the body,
- and properly developed muscles,

are superior for quick forward spring or agile movements, but not for maximum speed.

Effect of Size on Agility

Smallness of size increases agility.

Along with decreased size, angulation usually increases, probably due to the fact that muscles are capable of moving lighter weight through larger angles.

Ponderous animals, like elephants, must have straight joints in order to support their weight when standing.

Structural differences in Galloping Dogs

The differences in the structure of galloping dogs can be illustrated by these breeds.

First, track Grey hounds are built for all-out speed.

Second, coursing Greyhounds have a bit less speed but much more agility in following the hare. Both have powerful back muscles to generate maximum speed with secondary endurance considerations.

Third, the Saluki has a shorter back and uses its long legs (1.3 or 1.3+ to 1) to gain speed; it has less back flexing and has less speed than the Greyhound, but greater endurance.

Fourth, Arctic dogs have a square body and slightly shorter legs (1.2 or 1.25 to 1) than the Saluki or Greyhound, and are built for very long distance travel at moderate galloping speed.

The **fifth** type of galloping dog is the uphill galloper whose classic form is exemplified by wild mountain goats and sheep; their leg muscle arrangement favors lifting the body of the animal upward; high speed muscles are not of primary importance. For such ad vantage in goats and sheep, the gluteal muscles on top of the pelvis are less massively developed. Wild goats and sheep are swift in uphill travel but not swift in flat land running. The mountain Afghans, in their native rough terrain, tend to be of this type.

Sixth, some of the herding dogs function mainly at the endurance gallop, rather than at the trot.

Types of speed gallopers

- The Whippet is first, on very short runs;
- The Greyhound will lead the way, on a somewhat longer run;
- The Saluki will lead after the Greyhound tires, on a long run;
- The Arctic sled dogs take the lead, on very long distance travel;
- The mountain type Afghan is superior in speed, on rough terrain galloping.

Note: Because of the necessary differences in body build for each type galloping mentioned, each have developed differences in their style of trot.

Structure of swift dogs

A summary of the desirable features of the swiftest animals includes:

(1) Leg movement restricted toward single plane motion (legs swinging back and forth in the direction of travel, in a straight column and usually with convergence of paws) by muscle attachments and their orientation.

(2) Leg length about 1.3 times longer than the chest depth.

(3) The distal end of legs lightened.

(4) Segments of the leg nearest the body shortened and segments furtherest from the body lengthened.

(5) The number of digits reduced (dogs have lost the use of only one toe - the fifth toe of the hind foot, called the dewclaw).

(6) Muscles concentrated high in the leg.

(7) The spine flexible as in most Carnivora.

(8) Body not heavy.

(9) Head small and the neck slender or short.

Muscles in swift dogs

- A very strong dog will seldom be a swift one.
- Swift dogs have optimum muscular development for fast paw motion which is not muscle bulk or flabby muscles.
- For quick, short dashes, the conditioned Whippet defeats the Greyhound, but in longer distances the Greyhound overtakes the Whippet.
- The favorable sized Greyhound for speed is between 65 and 75 pounds.
- Larger Greyhounds as seen at dog shows, with their slightly too short legs, too deep chest and too narrow chest are poor bets for displaying maximum speed.

Well-developed muscles are necessary for gallopers, and the muscles are often bulging and hard.

For performance, they should never be smooth and soft as favored by some fanciers.

Differences in structure Sighthound Vs. Trotter

In summary, a sighthound differs from sustained trotting dogs as follows:

(1) For the dog's size, shortened cross steps.

(2) After pick up of the front paw, the pastern comes forward at about 45 degrees to the ground, not parallel with the ground.

(3) The hock joint is not completely straightened during the trot.

(4) More up and down motion of the body occurs as compared to that seen in a dog designed to be an efficient trotter.

From a **functional** point of view, a **very undesirable trot** is one typical of the show ring trotter:

- long forward reach of the front paw,
- quick flip up of the pastern,
- minimum up and down motion of the topline,
- and hocks straight during extension.

The Show Afghan Hound

The Show Afghan Hound

- **Trends:**
  - **Gait:** Trot (endurance)
  - **Topline:** Straight (no agility)
  - **Croup:** Medium
  - **Angulation:** Medium
  - **Thorax/Distal Leg:** 1,1:1 (no gallop)
  - **Rear muscles:** Medium

The Racing Afghan Hound

The Racing Afghan Hound

- **Trends:**
  - **Gait:** Gallop (top speed)
  - **Topline:** Straight (no agility)
  - **Croup:** Orizontal (no running uphill)
  - **Angulation:** Straight (power)
  - **Thorax/Distal Leg:** 1,3:1 (full gallop)
  - **Rear muscles:** Powerful (full gallop)

The Lure Coursing Afghan Hound

The Lure Coursing Afghan Hound

- **Trends:**
  - **Gait:** Gallop (endurance)
  - **Topline:** Arched (agility)
  - **Croup:** Medium
  - **Angulation:** Medium
  - **Thorax/Distal Leg:** 1,2:1 (endurance gallop)
  - **Rear muscles:** Medium

The Coursing Afghan Hound

The Coursing Afghan Hound

- **Trends:**
  - **Gait:** Gallop (top speed)
  - **Topline:** Arched (agility)
  - **Croup:** Vertical (running uphill)
  - **Angulation:** Medium
  - **Thorax/Distal Leg:** 1,3:1 (full gallop)
  - **Rear muscles:** Powerful (full gallop)

The Hunting Afghan Hound

The Hunting Afghan Hound

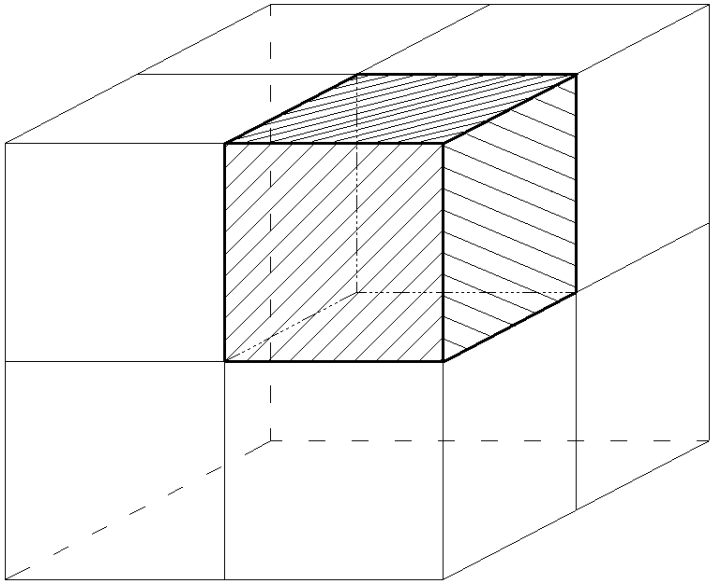
- **Trends:**
  - **Gait:** Gallop (endurance)
  - **Topline:** Arched (agility)
  - **Croup:** Vertical (running uphill)
  - **Angulation:** Medium
  - **Thorax/Distal Leg:** 1,2:1 (endurance gallop)
  - **Rear muscles:** Powerful

Some features to be evaluated to preserve functionality

- **Change in Size/Proportions**
  (for agility and running huphill)
- **Reaching and Extension on Pressure Plate Test**
  (for efficiency of locomotion)

Change in Size and Proportions

If the size of an object is doubled in linear measurements, the surface area is increased 6 times and the volume (also an animal's weight) is increased 8 times as can be proved by counting on this cube.

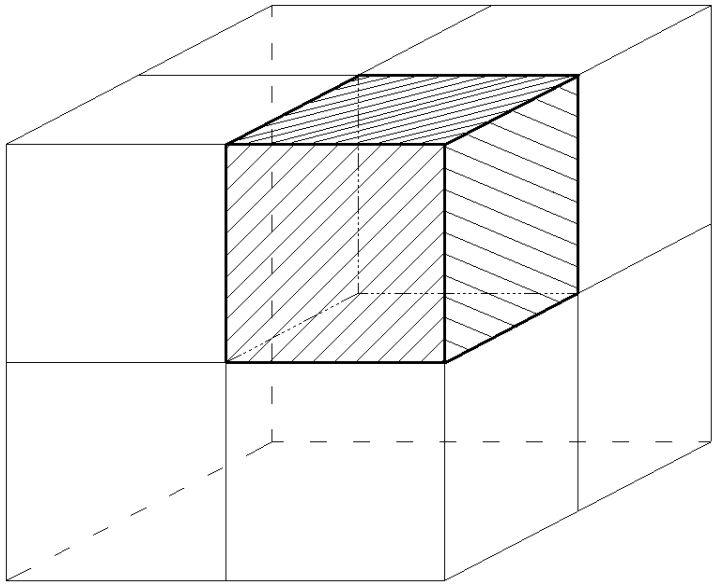


It is a well-known fact that as you increase the size of an animal, the relationship of parts must change in order to maintain similar forces and mechanical properties.

If the stress on each square inch of a leg bone is to remain the same after the size has been doubled in all directions, the leg diameter must be increased by about 3 times.

It is impossible to reduce size from a Standard Poodle to a Toy Poodle and have the parts remain in their same proportions.

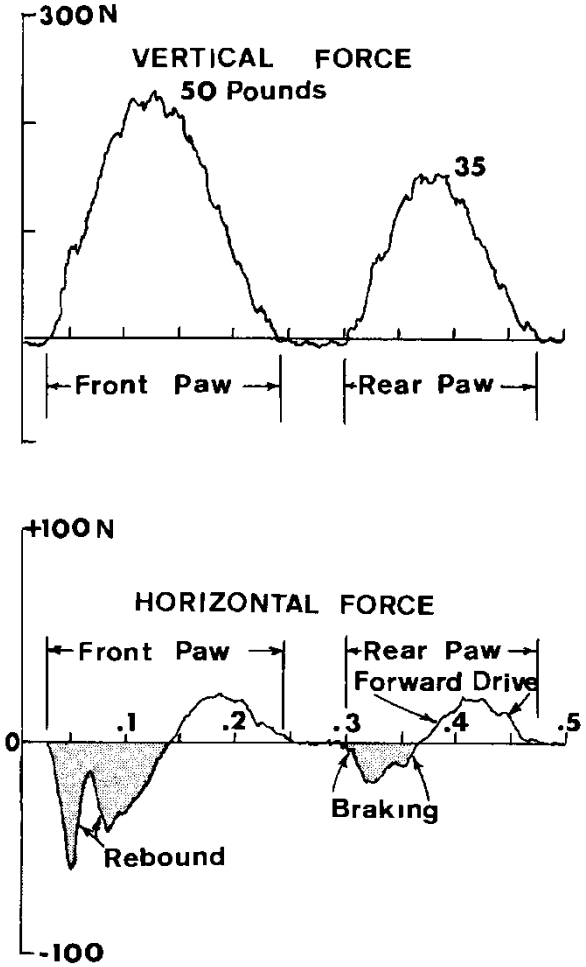
That is why a good big dog of a breed visually appears to be more sturdy than a smaller dog, and in dog shows, the big one usually is preferred.



Pressure Plate Test

Historical Pressure Plate Test on an Afghan (1974)

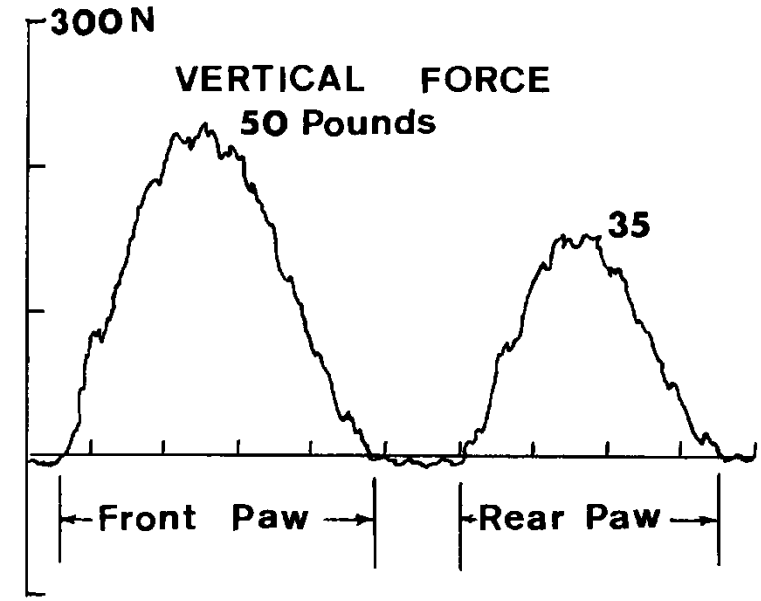
The figure shows the results of a pressure plate test on the left side of a trotting female Afghan as made at the University of Bristol by dr. Allen Goodship at the request of Douglas Soeder of the Scottish Kennel Club.

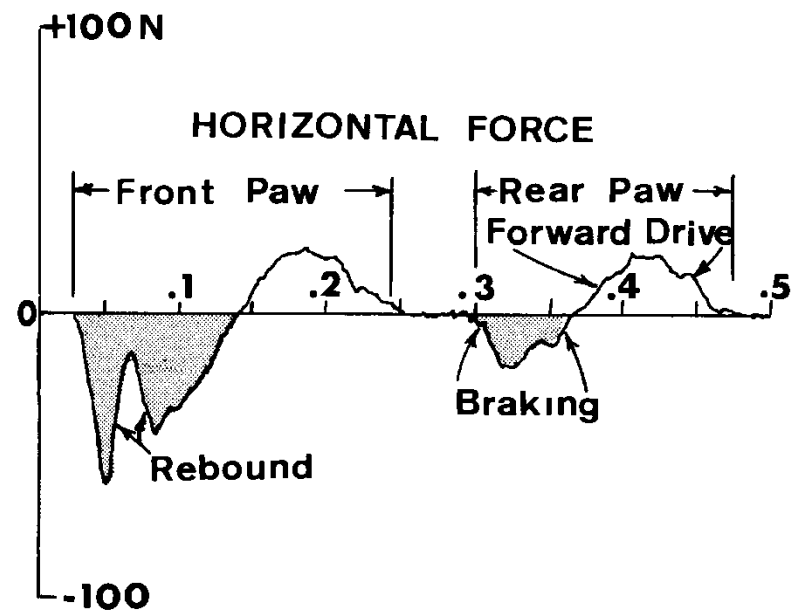


The vertical scale is in Newtons (100 Newtons equals about 22 pounds of force), and indicates the force applied by a paw for each moment of time the paw is on the plate.

The left portion of each drawing is for the front paw, and the right portion is for the rear paw. The upper drawing shows the downward force applied by the paw during the test.

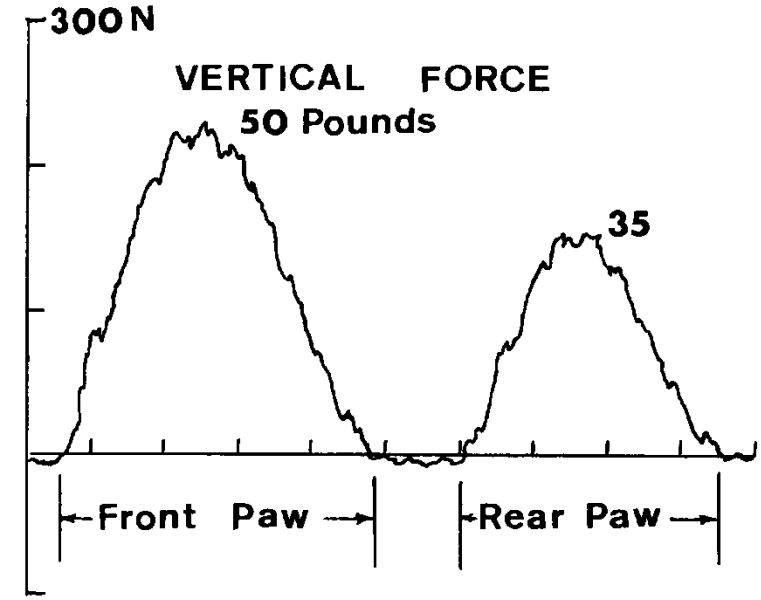
Time is noted by tie marks at 0.05 second intervals.

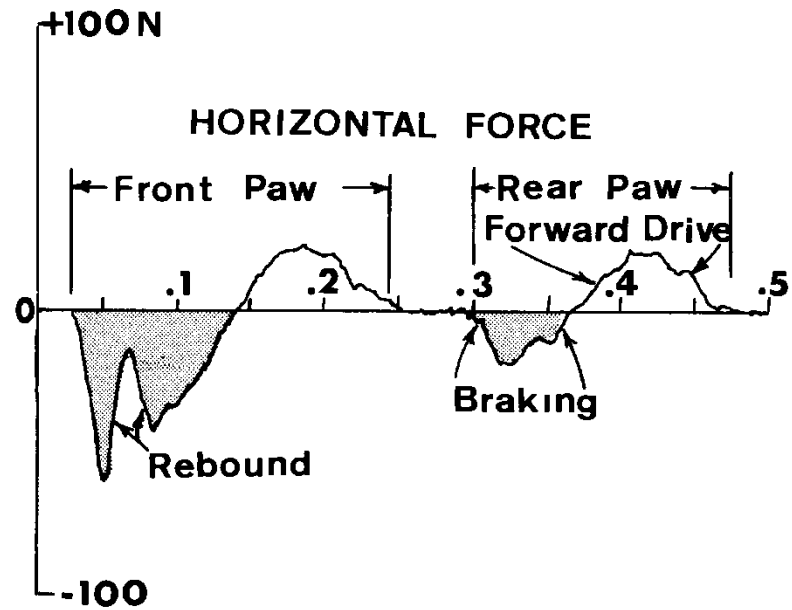




According to the test results, the front paw, as read on the upper drawing (vertical force), carries a maximum of 50 pounds of force, whereas the rear paw of the same side carried 35 pounds or, stated differently, the front paw carried about 3/5 of the downward force and the rear paw about 2/5.

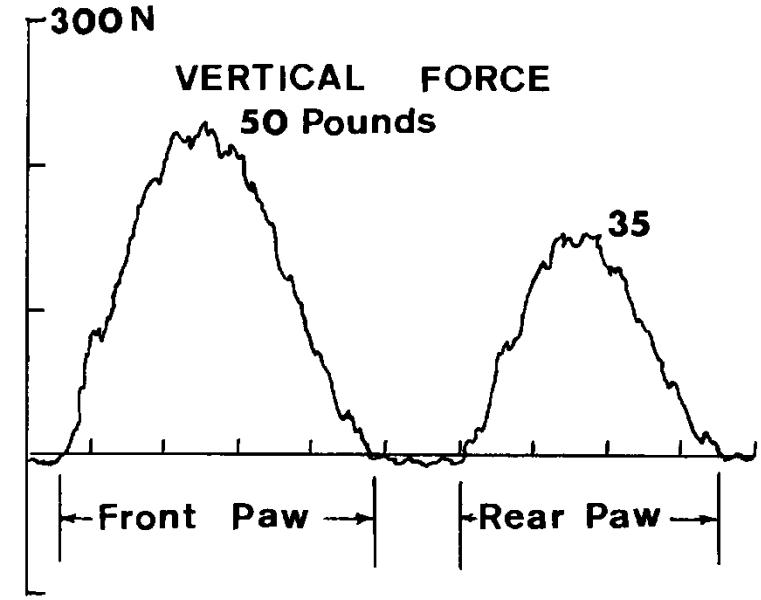
The front paws of dogs are always larger than the rear paws by about this same ratio.

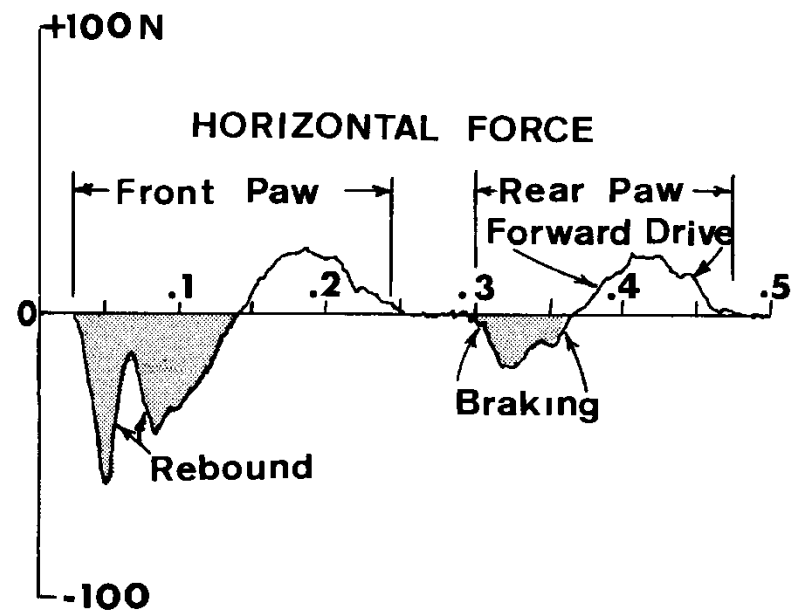




The time scale indicates that the front paw was on the plate longer than the rear paw (0.205 seconds for the front paw as compared with 0.167 seconds for the rear paw) by 23%!

Dogs with longer front legs than rear legs often have this happen.
At the trot, diagonal legs are not always in exact cadence.



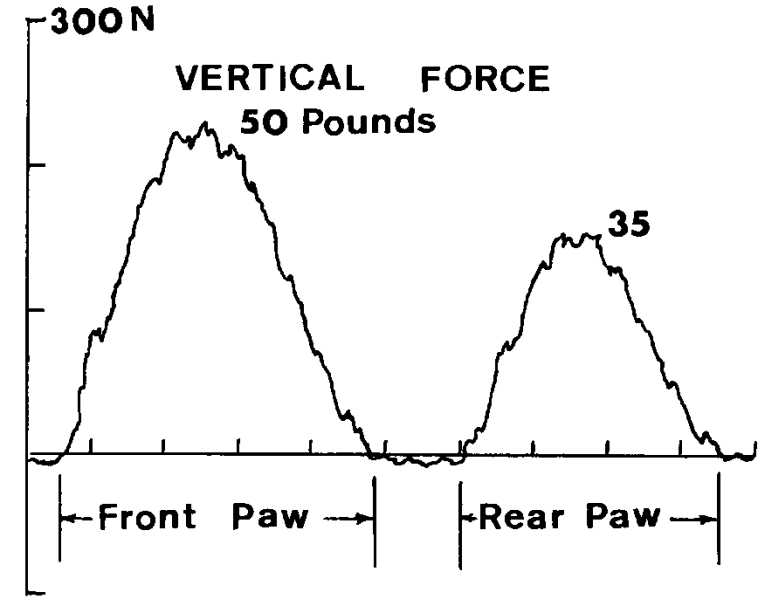


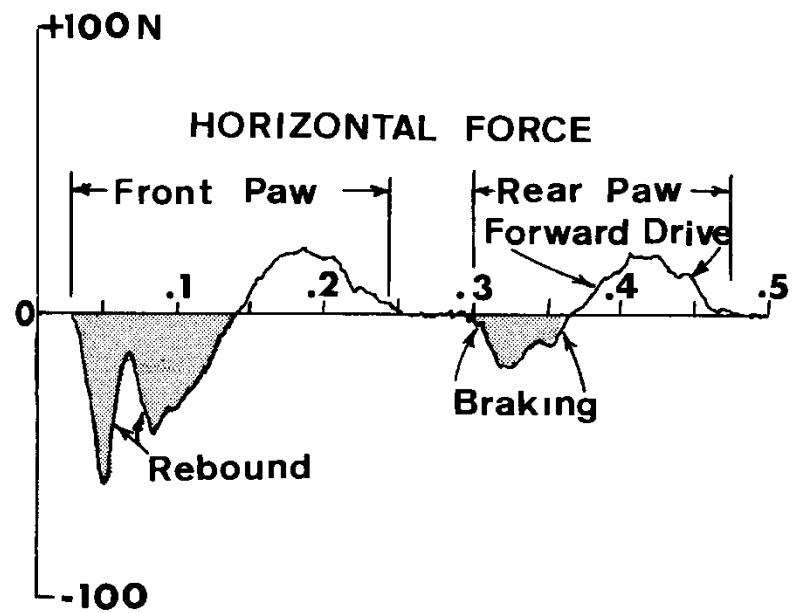
The lower half of the chart shows the forward and rearward forces applied by the paws during the trot.

A negative force occurs in the shaded area and here the paw is slowing the dog's speed (decelerating).

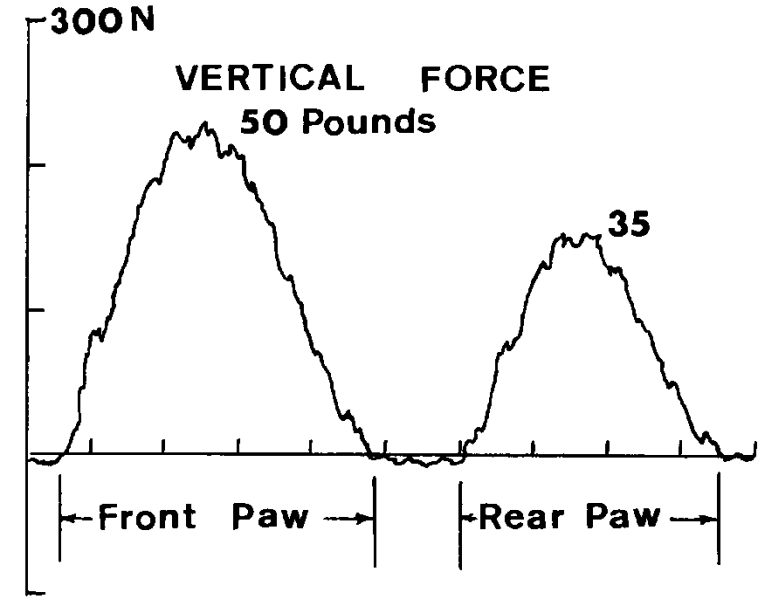
In both the trot and gallop (tests for the gallop not shown), immediately after a paw, front or back, was put down, a negative force developed and the dog's speed was slowed!

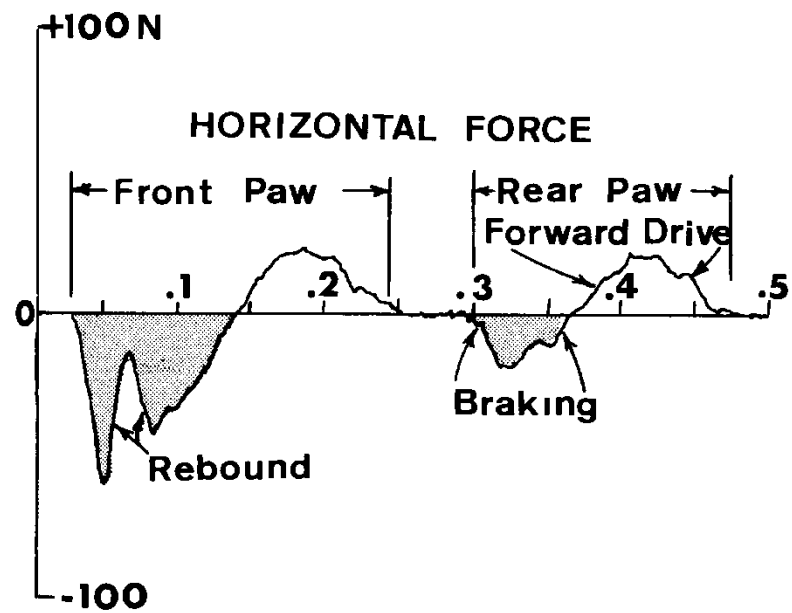
In the trot, only after the paw passes behind the shoulder blade or hip joint does the paw develop forward push!



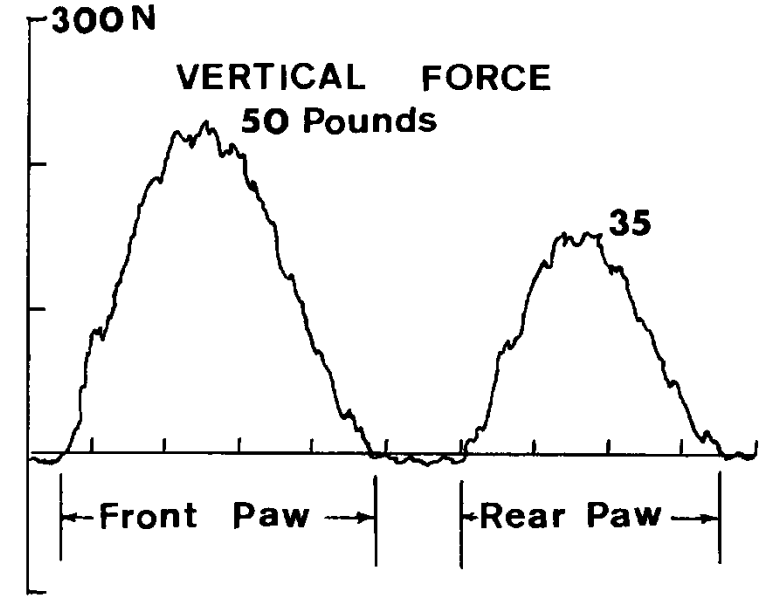


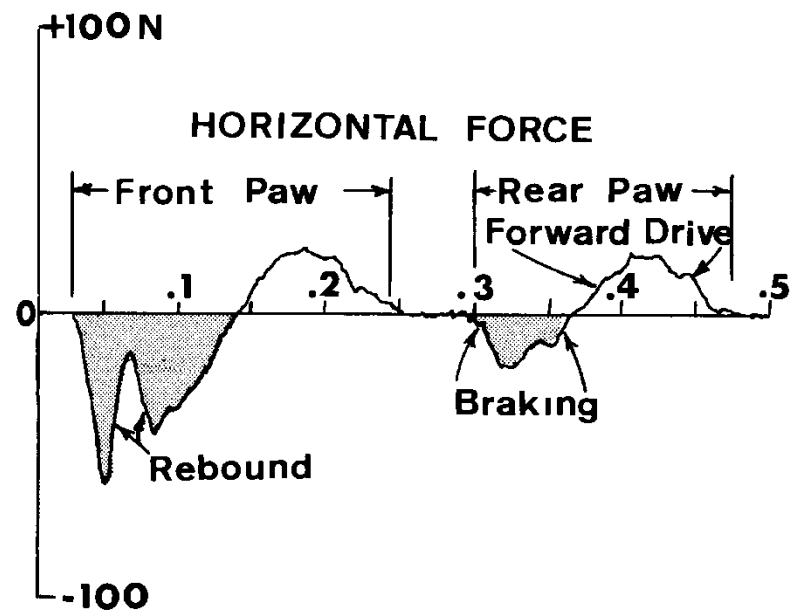
Anything that improves forward reach, such as well-laid back shoulder blades, increases slow down action and decreases efficiency of forward thrust. Note that maximum forward thrust occurs at about 3/4 of the time after the paw is on the plate.





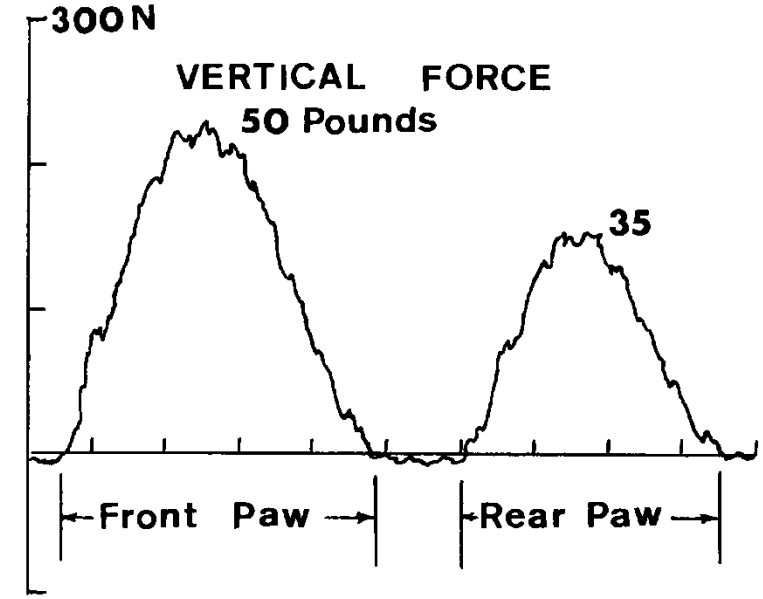
The area marked «rebound» is due primarily to elasticity in the front leg tendons; the tendon acts much like a spring and oscillates up and down, thus causing the forces to increase and decrease immediately after the paw is set down.

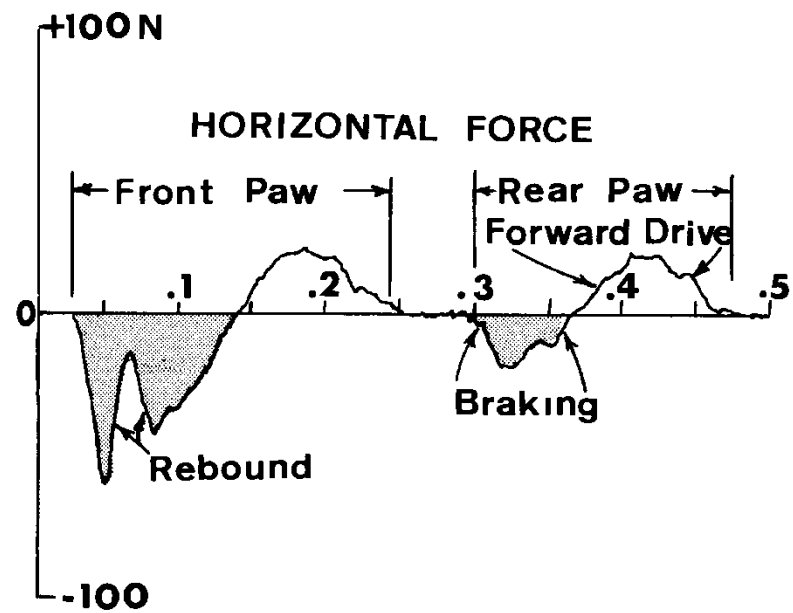




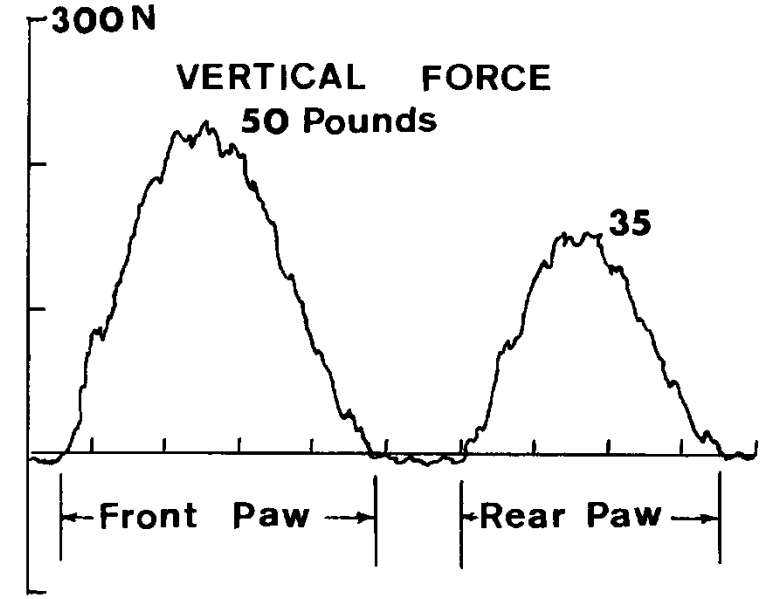
Most of us have been told that the front paw carries most of the weight and the rear paw furnishes most of the drive.

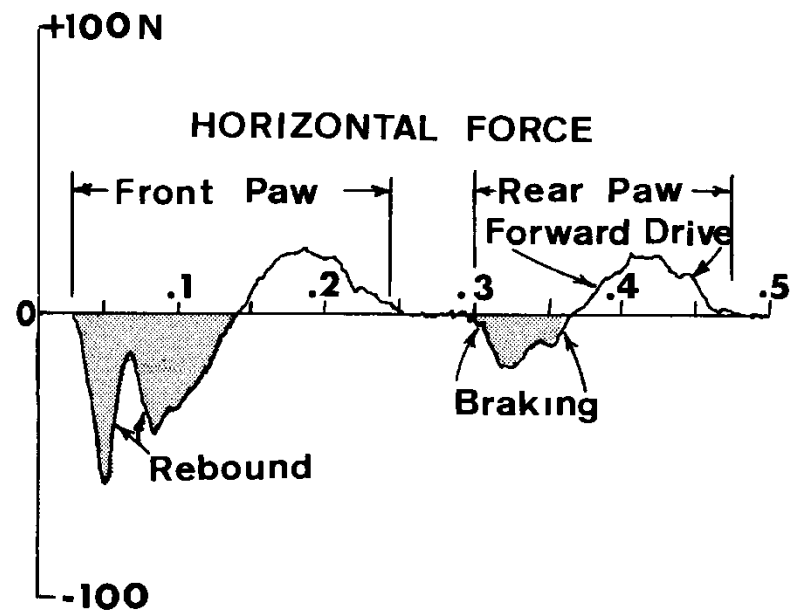
In this trotting test, the front paw furnished just as much forward drive as did the rear paw, though the front paw did have a greater amount of slow down force (deceleration). Galloping dogs (dogs designed to be superior gallopers) at the trot probably have this characteristic.





Tests on trotting dogs (dogs designed to be superior trotters) at the trot indicate that the rear paw does supply the greater percentage of forward drive by about the ratio of 60 to 40.





Final observations about Afghan Hound

Some of the early Afghans introduced into USA and UK were from the mountainous regions of Afghanistan and were developed to pursue game which attempted to escape by running uphill or to hilly country.

In the second adopted British Standard, the following was included, though omitted from later standards: «The object of the dog is to hunt its quarry over very rough and mountainous ground in a country of crags and ravines. For this, a compact and well-coupled dog is necessary rather than a long-loined racing dog whose first quality is speed.»

This type of activity in this kind of terrain required a bounding type gallop, a square build and uphill leaping muscle development as is seen on many wild goats and sheep.

For its structure, the trot was not long-standing, had a short cross step and apparent up and down motion of the topline, but breeders soon learned that the longer striding dog won in dog shows.

As seen in the show ring today, we now have long striding Afghans who trot in a manner at variance with that of an uphill or level terrain galloping dog.

This trot is, we must admit, delightful to watch.

On several slow motion movies of show Afghans galloping at supposedly high speed, the exhibits were not using double suspension gallop, and they were quite inferior in level ground speed.

Since they were kept for show and were not in the habit of running, perhaps this is un-derstandable.

The major fault in this breed (if it can be considered a fault in a breed kept almost entirely for exhibition) is that the show exhibits are seldom permitted to run; they have to be taught to run.

Of those trained for hare coursing, many had prolonged suspension in the extended phase of the gallop, but almost none in the contracted phase (the free flight followed the push-off from the front paws).

Horses also have free flight following the push-off from the front foot.

Greyhounds have free flight following push-off from either the front or rear foot.

The **British Standard** merely says under “General Appearances”: «The gait (which gait, trot or gallop, is not mentioned) of the Afghan Hound should be smooth and springy with a style of high order. The whole appearance of the dog should give the impression of strength and dignity combining speed and power.»

The **USA Standard** is more explicit: «Gait - When running free, the Afghan Hound moves at a gallop, showing great elasticity and spring in his smooth, powerful stride. When on a loose lead, the Afghan can trot at a fast pace (meaning at swift rate, not pacing); stepping along, he has the appearance of placing the hind feet directly in the footprints of the front feet, both thrown straight ahead. Moving the head and tail high, the whole appearance of the Afghan Hound is one of great style and beauty.»

As can be observed in the show ring «great style and beauty» is of major importance, and a style which indicates functional efficiency has been of less importance.

In the show ring, the Afghan is not tested for functional efficiency, nor is there any attempt to see that its style of trotting reflects functional efficiency.

What is seen in the show ring is what is delightful to the eye, and it is delightful!

The flying trot in expo

During part of the flying trot of the Afghan, at one stage the dog is supported by only one rear paw, rather than a rear and front paw.

After the two diagonal paws are on the ground, the front paw picks up first, leaving the dog supported by one hind paw.

Next, the rear paw picks up and the dog goes in to the flying phase of the flying trot.

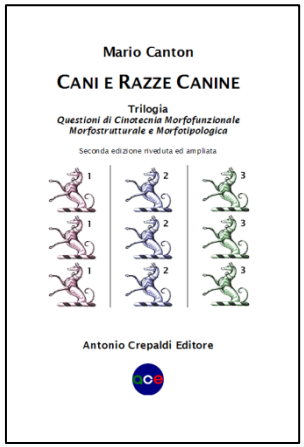
A number of Afghans, with relatively coarse heads, large eyes and often excellent performance at lure coursing, are currently out of favor at bench shows, even though many are functionally efficient.

Afghans at the time of take of a hare usually must dive on it; they tend to run with the head held high.

Insights

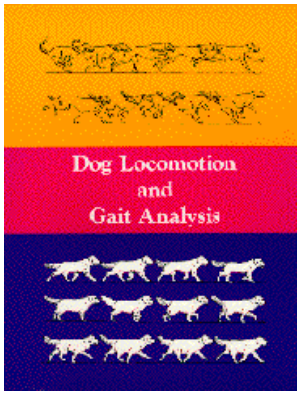
- **By the speaker:**

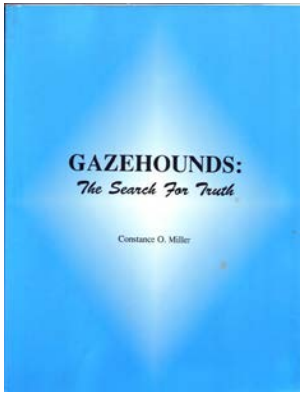
  (in Italian language)



- **By other authors:**

  (in English language)





Where to find the report

- mailto:

  info@cinofilia-crepaldi.it
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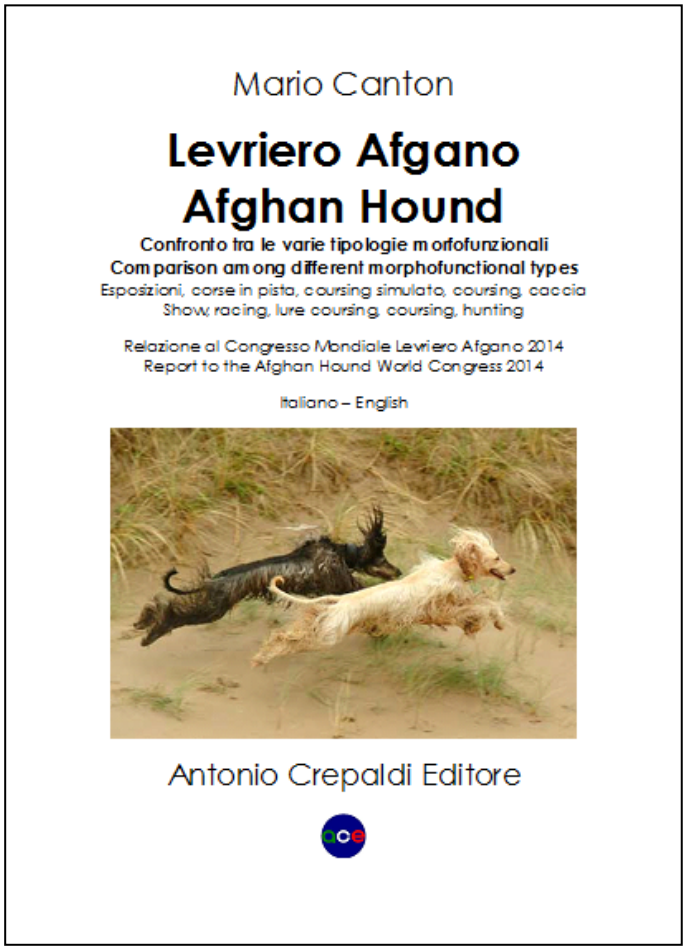

The End

Thanks for your attention!

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