Yucca Lofts

Racing and breeding excellence since 1955

The Selection Process and Application to Breeding

Selection, also known as grading, is the most challenging aspect of the pigeon sport. I have encountered some fanciers who have a natural ability or instinct to detect a good pigeon by simply holding it in their hands. The challenge is in knowing why it is a good bird and recognizing its individual strengths or weaknesses and how they influence the breeding process. The selection process tends to be a difficult one to grasp, and for most it is learned through experience. For example, trying to explain the ideal muscle to a fancier who lacks experience in the grading process would be like trying to describe a rainbow to the blind. How does one describe something never experienced by the other person?

Racing pigeons are descendants of the rock dove. There are many breeds of the dove, all of which have variations of characteristics, such as size, length of wings, body shapes, and color. We can assume that generations of pigeon fanciers recognized these variations that occurred in the birds within their realm of influence and enhanced them to create distinct breeds, or what we now know as the modern racing pigeon.

We only need to compare the modern racer to the feral pigeon to see the characteristics that have been enhanced in the selection process. These characteristics include muscle, wing, structure, intelligence, homing ability and disease resistance. It goes without saying that there are many elements that contribute to the individual's racing ability; however, it has been my experience that there are limitations to how many attributes can be pursued in one mating. In the final analysis, the grader of pigeons must have a clear understanding of the subject. He must have fixed rules as to what and how he evaluates. He should not be influenced by the exception, a bird that may be successful but does not have the physical traits that most champions possess. He must recognize what influences the best or highest percentage of results. We must expect that the act of breeding is a subjective intuitive art form influenced by the grader's total level of recognition and experience.

When I grade a pigeon, I choose to focus on the most visible physical strengths. In my selection and breeding process I focus on the muscle, wing, structure, and balance (in that order of importance) to create a "Universal Pigeon," one that has both speed and endurance. It is my objective to describe to you how I evaluate each of these characteristics and how I apply them to my breeding process.

Muscle

When it comes to the muscle of the pigeon, I focus on four key areas, the buoyancy, the inner pectoral, outer pectoral, and keel attachment. I evaluate each of these areas and breed to correct weaknesses

Photograph from the Miracle of Flight by Stephen Dalton.

and intensify these characteristics.

I choose to evaluate buoyancy, volume in relation to weight, because it is part of the overall impression one receives when trying to grade muscle. Although it isn't a part of muscle, it is a factor in evaluating muscle. A pigeon should feel light in relation to its volume.

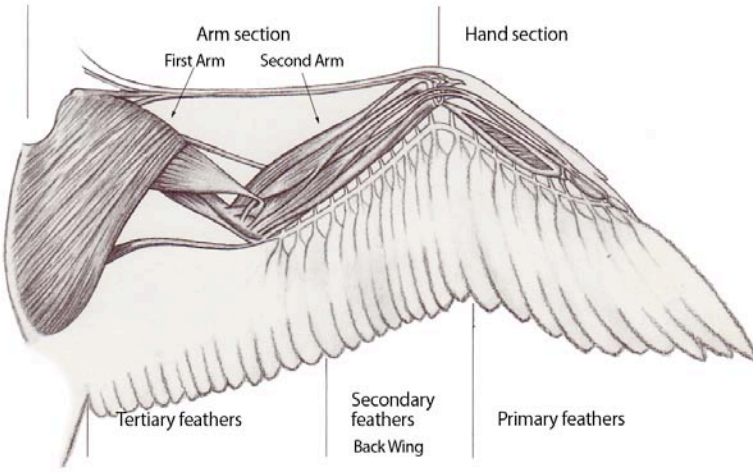
The muscle itself is two parts, the inner pectoral which is attached to the top of the wing arm and is responsible for lifting the wing (up-stroke), and the large outer pectoral which is attached to the bottom of the wing arm and provides the power of the down stroke. The two parts work together to determine wing stroke, which is a factor of speed. By applying pressure to the outer pectoral with your fingers, you can determine a certain amount of give in the muscle. It is my opinion that the "supple muscle," one that feels soft, is an indicator of a highly developed inner pectoral, which is what I look for in a pigeon. A less developed inner pectoral will not be as soft but will feel more rigid. Birds with an under developed inner pectoral will rely more on the down stroke of the wing and less on the upstroke which translates to a slower wing stroke.

Another indicator of a highly developed muscle is the bulge that is found where the muscle attaches to the outer edge of the keel. A large bulge and calcium ridge on the keel is an indication of stronger pectoral muscles.

The picture to the left illustrates how the inner and outer pectorals are attached to the wing arm. When the inner muscle contracts it lifts the wing; when the outer pectoral contracts the wing is pulled down. The strength and flexibility of the muscles determines the speed and power of the wing stroke.

Wing

The three primary principles of aerodynamics that affect the wing are lift, drag, and thrust. These three characteristics are in play at all times during flight. I am looking for the "universal wing" or



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highly efficient wing which has low lift and high thrust.

In my pursuit of the "universal wing" I have encountered two types of wings. The first type is one that I identify as "reversed wings." These birds have very large and highly developed pectoral muscles and a wing that is more like that of a pheasant, meaning it has a large back wing and a very short end wing (See graphic on next page). These are typical of birds that, in my opinion, are limited to short or middle distant races. On the other extreme, there are birds that have "high lift wings." These birds have a very large wing surface which is usually the result of wide feathers, or poorly ventilated wings, and a large secondary. Pigeons with "high lift wings" would be limited to slow speeds and/or longer distances. I must mention that there are many variations to these two wing types but for the sake of this article I have only mentioned the two extremes.

The "universal wing" is compiled of a short first arm of the wing, a short secondary wing and a long ventilated end wing. The shorter the first arm of the wing, the faster the pigeon can get through its stroke, creating thrust. A short secondary wing, which is the result of a short secondary arm and the length of the secondary feather, will reduce the lift characteristics of the wing, which will increase thrust for a faster pigeon. A long end wing with long supple narrow flight feathers, bends backwards opposite the direction of the stroke and has a "whip effect" at the end of each stroke, which provides increased thrust.

In the breeding process, as the end wing gets longer it creates more lift and so the back wing needs to be decreased or diminished to keep the wing in balance with the muscle. Pigeons with the "universal wing," with the right muscle, would excel at any distance.

Structure

Structure consists of muscle and frame and the result of the pigeon's frame and opposing muscles that hold it in place. It is the rigidity of these muscles that determine the quality of the structure. There are two ways I test the structure:

Test #1: Hold the pigeon in both hands; place both of your forefingers on each of the pigeons vent bones. Press down with your thumbs on the rump at the base of the tail. Using this test you can determine the amount of give in the vent bones. If the muscles that encase the abdomen and the tail are strong, which is what I look for, the vent bones will not move easily.

Test #2: By holding the pigeon in both hands, slide one hand up to the shoulder, while the other hand remains at the rump and gently twist or torque the bird.

I look for rigidity of the structure, meaning the bird should twist some but not too much.

Some fanciers test structure by holding the bird with both hands and tipping it up and down. They believe that while doing this, if the tail moves up, the structure is weak. This test can be misleading as some pigeons are "high set" which means that their vents come off of their back at such an angle that it causes the tail to be in a more upward position. I feel the two tests I use have a higher accuracy rate.

Structure is an important characteristic in breeding a good pigeon. A pigeon with a weaker structure can still be successful, but I have yet to see a true champion that lacked good structure.

Balance

Balance is the point when all of the pigeon's parts are in harmony. For example, we do not want a pigeon that has too large a wing for its muscle. The muscle and wing must be in balance to achieve the maximum performance.

I use the term "double dosing" to describe the mating of two like traits. I seek to mate the best to the best in the hope of intensifying each of my chosen traits. At the same time, I never double dose what I consider to be a weakness. The following is a short list of traits that I try not to double dose:

- Birds that are open between the end of the keel and the vents
- Birds with high lift back wings
- Birds with short primary flights
- Birds that hold their shoulders up
- Birds that hold their tails up
- Birds that are deep keeled
- Birds that are too shallow keeled
- Birds that have long legs
- Birds that have wide flight feathers
- Birds whose eyes do not contract well
- Birds that lack soft feathers
- Birds that lack buoyancy
- Birds that lack genetic purity

You might note that the last item on my list is genetic purity. This can be best explained by understanding the terms phenotype and genotype. Phenotype is the expressed traits that determine all that a pigeon is or ever can be. Genotype

represents the full range of traits, good and bad, that can influence a pigeon's offspring. The goal of the breeder is to make the phenotype and genotype as much alike as possible and at the same time breed birds that reflect all his chosen traits.

As you can see the list can be quite extensive. It has been my experience that extremes want to revert back to the norm. For the breeder this fact can be good and bad. The good part is that it is most often easy to correct an extreme. The bad is that the extreme of good wants to revert as well.

The discussed selection process focusing on the visible physical strengths including muscle, wing, structure, and balance is specific to my long-term breeding program. I have been fine tuning the process over the last 50 years with much success. The grading process is very subjective, and it is important to note that other fanciers have their own selection process that may contain different components. Therefore their end result would depend on their ability to be consistent and the effectiveness of their chosen selection process.

For further information regarding Yucca Lofts, visit www.yuccalofts.com or contact Mike Smith at info@yuccalofts.com or (626) 334-2278.