

About The Author

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The Avian Veterinarian

Dr. Rob Marshall is a bird veterinarian with more than 25 years experience in treating birds. He has kept birds since the age of eight. The age he decided to become a bird veterinarian.

Since 1975, Dr. Marshall has been attending to birds as a veterinarian. In 1988, he received his M.A.C.V.Sc. Degree in Avian Medicine. He is author of many books and videos and is regularly presents scientific papers at national and international veterinary conferences. His last presentation can be viewed in the budgerigar section. His last books are: "Eclectus Parrots as Pet and Aviary Birds" (ISBN 0-9750817-0-5), which was published in 2004 by Australian Bird keeper Publications and Canary Health published in 2006 in USA. His latest book "The Budgerigar" is 430 pages long with more than 1500 color photographs and has taken more than 13 years to write:



In 1988, Dr Marshall started developing and refining a range of health products and medicines specifically for the racing pigeon. By 1995, a superlative range of bird medicines and health products had been perfected. It is well known that these are the very best and most advanced products available for birds, catering for the bird owner who follows the motto of "when only the best will do".

Dr. Rob Marshall has a passionate interest in wild ecology and biology and was included as a veterinary consultant for the Northern Territory recovery program of the endangered Gouldian Finch. He has recently completed a ten year long study of the biology and breeding behavior of the wild budgerigar which is detailed in "The Budgerigar" book. Research into the nutritional requirements and breeding behavior of the Australian Eclectus has also been completed recently. Present research projects include the breeding of old pure families of chicken breeds for the restaurant trade who will be evaluating their inherent flavors and in collaboration with bird trainer Tailai O'Brien explore new methods for treating behavioral problems in pet birds.

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The sport and hobby of pigeon racing.

The thoroughbred racing pigeon is the fastest racing animal of all with the excitement and challenge of the sport of pigeon racing being enjoyed by more than two million fanciers throughout the world.

In Australia, many thousands of dedicated fanciers compete in races of distances ranging from 50 to 1200 kilometers every year.

The preparation of the pigeon race team for competition is no different than that of a football, swimming, running, cycling or any other team of athletes. The same principles of health and fitness apply to all these athletic disciplines whether they involve racing animals or human athletes. The underlying challenge of the pigeon fancier with the pigeon race team or the coach/manager of a football team is to prepare the team both physically and psychologically to compete successfully.

The only difference between the human athletic coach and the pigeon fancier is that the pigeon does not speak our language. The pigeon fancier therefore must learn to understand and communicate to the pigeon race team in many other ways and herein lies the intrigue and interest of racing pigeons.



During training and competition every athlete, including the racing pigeon is susceptible to illness. This is a failing of all elite athletes at peak fitness, because there is a fine line between the very best performance and the "break down" from illness. The challenge for the pigeon fancier is to maintain the race team in top form without "breaking down" from the illnesses that surround the pigeon in the race basket and transporter. It is the control of this fragile balancing act that sets the best fanciers from the rest.

Many pigeon fanciers chose not to compete in races and have thoroughbred pigeons for the pure joy of keeping and breeding this particularly beautiful and intelligent bird. After all, the thoroughbred pigeon must be the ultimate pet bird, because it returns for the love of the loft (its home) when released from any point on the compass. Is there any other pet that is capable of the same?

In this fast modern urban age when we are so divorced from nature, the keeping of pigeons is one way for both adults and children to develop a greater understanding and respect for the complexities of nature.

Feeding

Food Quality

First and foremost, the food must be of the best quality.

Good quality grain is a clean grain with low moisture content. Grains with high moisture and/or are dirty, dusty and un-cleaned are more susceptible to fungus and bacterial germs and poisons than dry clean grain. The truth is that germs on and in the grains will affect the performance of your birds during breeding, molting, showing and racing. The food used for racing pigeons must be fresh, clean and the highest quality.

The simple fact is that cheap food is never the best food.

The farmer receives more for the graded feed than for the weather affected (water, heat, hail etc) grain sold primarily as stock food. Some produce merchants buy this food for the pigeon fanciers to keep their prices down, but fail to understand that un-graded feed is susceptible to moulds and mould toxins that destroy the nutritional content of the feed. These moulds are a major health hazard, predisposing the race team to many illnesses. The poor quality grain simply fails to provide the required energy and nutrient needs of the competing bird. The result is poor performance and flock illness.

Nowadays, the grain merchants make a big effort to provide clean food, free of fungus, bacteria and toxins.

Most fanciers now understand that the quality of the feed does have a substantial effect on performance and they purchase "farm fresh" feed guaranteed free of moulds and mould toxins. Castle Grains of Queensland and Fernando's of Melbourne have set the standard for all other grain merchants in Australia. Culture testing is the best method of checking the grain. Even if the food tested is not perfect then it can still be helped, by mixing mould inhibitors (PEP) with it. Many fanciers use mould inhibitors routinely in order to protect their mixes from the effects of moisture during storage.

The pigeon eats more poor quality food but less of the dry clean food. This in itself makes unclean food more expensive.

The feed must be stored correctly and protected from moisture and rodents.

The correct storage of your grain after purchase is necessary if you are to preserve its culture-free status. If you allow moisture to infiltrate your feed then mould and bacterial contamination will most likely ensue, thereby nullifying all of your best efforts to provide your birds with the very best food. If your grain is very dry and culture tests clear then it must be stored in an airtight drum and elevated off the ground. This will protect your grain from absorbing moisture from the surrounding air during times of high humidity (e.g. rain periods and with night time high humidity). Grain high in moisture is best mixed with a mould inhibitor. Then it is stored with an open lid to allow it to dry out in times of low humidity and sealed in times of high humidity. The fungal spore's resident on moist grain is more likely to become activated when stored in the dark and without air circulation to help dry it out.

Nutrition, vitamins and minerals

There's more to feeding than just grain and grit.

Nowadays, pigeon fanciers know that there's more to feeding than just grain and grit. Certainly, grains are an excellent source of energy, protein, and fiber, but they are very low in the minerals, trace elements and vitamins required for the exertions of top racing and breeding robust youngsters.

For a long time, fanciers have used grit to provide the minerals in the diet of the racing and breeding pigeon, but only recently have they realized that shell grit does not contain all of the minerals and trace elements required for sustained racing and breeding success. Vitamins must also be added to the diet of the pigeon. The old timers understood this vitamin need from seeing the benefits of giving spinach and carrots to their birds. Today, most fanciers give vitamin supplements in the water or on the food.

**The theory of nutrition for the pigeon is really quite easy to understand.
The fancier must give:**

- Grain for energy, protein and fiber.
- Minerals grits, powdered minerals and trace elements.
- Vitamins are usually given with trace elements in the water.
- Extra energy, vitamins and protein can be given in the form of special oils on the food during the high energy times of racing and when the adults are feeding young.

Pigeons can survive on grain and grit alone, but they cannot reach the level of health required to withstand the pressures of racing or breeding. Eventually their health will fail under these extreme physical pressures. Good feeding will control most illnesses of pigeons. For example, there is a major increase in the minerals and trace elements required when the adult pigeons are feeding babies, but grit alone does not provide all of the necessary minerals and trace elements for continuing good health. Without mineral additives the end result is often egg laying problems, canker outbreaks and other illnesses. During racing there are increased needs for energy, protein and vitamins, as well as trace elements and minerals. The race team tires easy and is more susceptible to fatigue related respiratory and wet canker illnesses when extra vitamins and minerals are not provided.

The feed (grain) mixes do not provide enough vitamins and minerals for top performance. The fancier must select a feed mix that provides the energy and protein balance needed for the particular stage of the pigeon calendar. Breeding and molting birds require a grain mix which is higher in protein, has a different essential amino acid balance than the pigeon in full training during the racing season. The feed mix requires at least six different grain types in the mix in order to get the best protein level and quality (i.e. balance of essential amino acids). The best quality of protein is seldom met and lysine (a very important amino acid for the pigeon) deficiencies are common in grain mixes with fewer than 4 grains. The protein quality of the grain mix can be improved by adding protein/amino acid supplements prior to feeding.

All grains are low in calcium (0.01- 0.20%) and sodium (20-600ppm). Phosphorous, copper, zinc, manganese, and selenium are also low in some grains. The vitamin concentrations in seeds are highly variable. Seeds do not contain vitamin A (corn provides carotenoids), or vitamin D. Vitamin E and vitamin K levels are low to undetectable. Among the B vitamins riboflavin, niacin, and pantothenic acid are often low and vitamin B12 is not present. This means that the vitamins, minerals and trace elements lacking in the grain must given to the pigeons in some form or other. Many fanciers use spinach and shell grit, but this is still not enough to balance the nutritional requirements of the athletic pigeon. Nowadays most fanciers add vitamin and trace elements to the water once or twice a week and provide the minerals in powdered or block form ad lib.

Feeding to Win

During the racing season, the main function of food is to provide the fuel for flying. Our common aim is to provide the racing pigeon with the best fuel for race day. To do this consistently we must

have a good understanding of the food itself. The following paragraphs will introduce you to the science (or theory) of feeding, but for racing success you must also become expert at the practice (or art) of feeding. Only practice and observation can teach you the art of feeding, but hopefully the methods of feeding described here can help you find the pathway to feeding success.

We can only begin the art of good feeding when both the quality of the food is guaranteed and the flock is healthy. A healthy bowel is required before we can test our feeding systems, because an unhealthy bowel fails to deliver the fuel of good grain to the pigeon's body. Bowel diseases such as E. coli, coccidiosis, worms and wet canker all decrease the amount of nutrients entering the body.

By using the best quality grains and with a healthy race team, the fancier can now think about a racing mix appropriate for his particular family of birds and training methods. The mix chosen must provide a good balance of protein (amino acids) and for this to be achieved at least 8 different grains must be used. After this balance is achieved, the energy content of the mix becomes the most important part of successful feeding.

The feed system provides the race team with the correct energy levels for training and racing. The goal of feeding is to provide the training and racing pigeon with exactly enough (not too much and not too little) fuel (energy in the food) for sustained flight (loft exercise or racing). Of course, the fuel requirements of the training pigeon vary enormously from day to day. It is the constantly changing energy requirements of the competition pigeon that makes feeding such a challenge to even the best fanciers. The competition pigeon will not perform to its fitness level when the "energy balance" is incorrect. The "energy balance" must be assessed short term (daily) and long term (weekly) with fit flocks during the race season, because the fitness level will drop both when too much and too little energy is supplied. During young bird training special attention must be made to prevent depletion of the energy reserves in the liver and muscle.

Overfeeding relative to workload (positive energy balance) renders the race team less competitive because of excess baggage ("leady"). Excess energy is stored as fat with subsequent loss of buoyancy and fitness. It is well to remember that the excess energy of mixes which are too high in protein (legumes) relative to the work load will be stored as fat.

Underfeeding relative to workload (negative energy balance) renders the race team less competitive because of "depowering". Feed systems low in energy relative to the workload of the race team will result in the depletion of the energy reserves in the liver, fat and muscle.

The fancier can recognize a race team that is in a negative energy balance by the following signs:

- No wing flapping in the early morning or after feeding.
- Disinterest in leaving loft or toss basket, lower lid laziness etc.
- The race team in negative energy balance (inadequate energy intake relative to the workload) is susceptible to illness, especially "respiratory" diseases.

Buoyancy

Most fanciers understand the importance of buoyancy for success, but few understand the best way to achieve this in their race teams. Buoyancy is best achieved by supplying the flock with enough feed (a positive energy balance) to promote vigorous loft flying (or tossing) in order to maximize lean body mass (i.e. muscle) and minimize body fat. Instead many fanciers believe that the best path to buoyancy is to restrict caloric (energy) intake (feed less) in order to lose excess weight and thereby produce the buoyancy that we see with top form. However, buoyancy is not only weightlessness, but also power, and the buoyancy of fitness only comes when lean body mass is maximized. The restriction of calories in an effort to produce buoyancy in fact lowers the

fitness level of the flock and renders it susceptible to illness. Severe caloric restriction will cause a loss of not only body fat but also lean body mass (muscle) with the accompanying loss of fitness and power.

Selecting a Quality Breeding Pair

The chances of breeding a winner are increased when it is bred from a winner.

We all realize, that even from the best breeding stock in the world, only a very small percentage of the pigeons produced become champions.

To increase the chances of breeding champions we must first and foremost use quality stock. Quality stock is inbred, line-bred or mixed families that have bred winners or have been bred from several generations of winners.

The quality of the breeding bird can only be tested by the race results of its offspring and more than one test pairing may be necessary to achieve the combination of genes that works. The art of the master breeder is the selection of the correct pairs to ensure an aerodynamically efficient body type plus the character and brains of the champion racing pigeon.

How do we assess the quality of the untested racing or breeding pigeon?

The racing potential of the pigeon depends upon the quality of its parents. However, there is no single gene determining the racing performance of the pigeon and we must look to the physical, physiological and psychological features which make a champion pigeon.

- The physical features (structure, feather, wing).
- The physiology (fitness parameters).
- Psychology (attitude and will to win).

Some fanciers are able to assess both the racing and breeding potential of a pigeon in the hand.

The best fanciers agree that although there are certain physical characteristics common to the best racing birds, the race basket still remains the truest measure of the racing qualities of the pigeon. The physical qualities (bone structure, feather quality and wing) that we assess, when handling a racing pigeon, determine its aerodynamic efficiency. Although the aerodynamic soundness of the pigeon is paramount to its ability to race successfully and without it the pigeon will never be a champion, it alone does not make a champion pigeon. Many pigeons are aerodynamically perfect, but it is the physiological qualities (fitness metabolism, homing ability and racing attitude) that make the bird with the perfect physique a champion and the physiological potential can only be determined in the race basket and not "in the hand".

The only way to test the abilities of the breeding birds is to race test their progeny, but the selection of breeding birds is not always based on race performance. In many cases stock birds are selected on bloodlines and/or known family characteristics. The physical qualities required for successful breeding birds are the same as those for the race bird, namely the physical requirements for efficient flight. The physiological qualities of the stock bird can be predicted to a certain degree by its bloodlines, but in the end the breeding performance of the stock birds can only be measured by the race performance of their children or grandchildren.

Good Feather & Handling for Quality
Every champion racing and breeding pigeon has good feather.

Handling For Quality

When the experienced fanciers handle a racing pigeon they are assessing its racing ability by judging its aerodynamic soundness. Their skill has been taught by time and their success in predicting the quality of the race pigeon rests with the fact that the aerodynamics of every champion is sound. The "expert handlers" cull birds in the race team that handle poorly, because the chances of a poorly conformed bird doing well are extremely low. It is good practice to cull "poor" pigeons from the race team well before training begins, but the decision to cull must be made by a good "handler". Remember, the expert handler is always a very good flyer or breeder of pigeons and never a poor or mediocre fancier.

Although the athletic potential of the pigeon cannot be determined by its physical qualities alone, an understanding of the features of the racing pigeon which enable fast sustained flight provides the fancier with the knowledge required to both select and breed aerodynamically sound race birds. When handling a bird to assess its aerodynamic efficiency pay special attention to the feather quality, wing, body structure and balance.

An understanding of the aerodynamics of flight will improve every fancier's skill at handling pigeons correctly. Around the world there are many families of pigeons varying enormously in appearance, size and shape, but the very best birds share the same important physical features. These features give the best birds an aerodynamic advantage. Every champion racing and breeding pigeon has good feathering, a good wing, a balanced body and is naturally buoyant. Every one of these is a hereditary feature passed on from parent to offspring.

Good Feather

The importance of good feathering as a reflection of the quality of a pigeon can never be overemphasized. For every fancier the quality of the feather is a very good and immediate indication as to the quality of the pigeon. A good quality feather is the foundation stone for breeding the champion pigeon and a pigeon with poor feathers should never be considered for stock because good feathering is a reflection of both good breeding and good health.

The healthy feather is silky, flexible, strong and waterproof. These features are all important for efficient flight. The high oil content of the healthy feather gives it the silky feel. The silkier the feather the greater the lift due to the streamlining effect required for efficient flight. The dry feather we get with many illnesses means that there is less streamlining (over the body and wing) and more drag with a subsequent loss of lift and less efficient flight. More energy is required causing the bird to tire more quickly. The dry feather being less flexible means that the twisting motion of the end flights that gives forward thrust is lessened, which results in a slower bird. The dry feather is brittle and lacks the strength of the silky feather, wearing out by the time the long races, when flying efficiency is needed most. Dry feathers lack the waterproofing qualities of the oil laden silky feather and flying therefore becomes more difficult in wet weather.

The feathers of the racing pigeon in top form are tight and silky. The aerodynamics is further improved by the feathers covering the body. These contour feathers of the body and the coverts over the wing and tail feathers of the bird in top form overlap each other very tightly to create a very smooth surface. We describe such a bird as having "tight" feather. During flight this very tight feather allows the moving air to flow smoothly and quickly over the body and wing surfaces in what we call "streamlines". "Streamlining" gives "lift" to the flying pigeon and is one of the reasons why it can fly for sustained periods without tiring. For whatever reason (health or breeding), poor quality feathers fail to form the tight smooth surface required for "streamlining" and efficient flight. When the surface is not perfectly smooth the air does not flow smoothly across the surface and creates air eddies and bubbles of turbulence. Turbulence has the effect of slowing the airflow over the wing and body surfaces that increases the "drag" or "resistance" and reduces the "lift". Therefore the bird with poor feathers flies slowly and requires more effort to stay aloft. The end

result is a bird that tires sooner. A good feather is essential for racing performance because it is the basis of "lift".

The Loft Design

Irrespective of its geography, shape, size or structure, the loft must provide the pigeons with:

- Sunlight during the day.
- A secure place to rest at night.

Sunlight and the elevated flight

Sunlight is a basic requirement for all birds and it is easy to see the positive effect that the sun has on the health and well being of our pigeons. On sunny days the birds look so much brighter and more alert than on overcast or wet days when the birds look depressed and disinterested.

It is known that direct sunlight provides birds with the vitamin D, that is so necessary for bone, feather and reproductive health, but it must have other positive effects on the metabolism and immune system, because the birds look so strong when they have access to direct sunlight. For this reason, it is recommended that every bird in the loft has access to direct sunlight. This is best achieved by an elevated flight.

The elevated flight is ideal for baths, protecting the loft from wetness and the race birds from potentially harmful ground germs associated with free lofting. The elevated flight is usually opened directly to the breeding loft, whereas the flight of the race loft must be closed off at night from the rest of the loft during the race season. The flight quickly becomes a favorite rest and recreation area for both the breeding and race birds, playing an important part in strengthening the loft bonding process of pigeons.

Security and rest at night

The special attention that is given to providing the pigeons with a loft that promotes complete rest at night will reward the fancier with a healthier flock and more consistent race results. Both the breeding and race lofts must protect the birds from moisture, temperature extremes, too little or too much air movement, predators, noise, fumes, light and other disturbances, so that the birds can rest, especially at night. Proper rest is a major pre-requisite for continuing pigeon health and race performance.

The breeding loft

The design requirements of the breeding loft are simple compared to the race loft. The best breeding loft is very open, because breeding takes place during the warmer months. At night the birds usually rest comfortably in their nest boxes and during the day a large open flight provides the adults and babies in the nest with the health benefits of direct sunlight. The open breeding loft improves the circulation of fresh air and promotes a drier loft, which in turn improves the breeding performance. Breeding is far less stressful to the pigeon than racing and maintaining their health is so much easier, because the birds are not exposed to the outside diseases and hardships of the race basket.

The race loft

The race birds are exposed to many more stresses than the breeders and require much more rest to remain healthy. Consequently, the requirements for a successful race loft are more exacting and complicated than for the breeding loft and must provide the race team with the necessary rest to recover from their strenuous physical exertions. The darkness of night provides

the pigeon with the time to rest and the conditions in the loft at night are of the utmost importance if the pigeon is to fully recover from the exertions of the previous day.

The conditions inside the race loft which promote restful sleep at night are:

1. No rapid fluctuations of humidity and temperature.
2. Good ventilation (i.e. the air circulation is good; the air is fresh, not heavy or stuffy, no drafts and no dust).
3. The pigeons numbers are controlled i.e. no overcrowding.
4. There is no wetness in the loft.
5. The loft is clean.

Temperature and humidity control

To protect the fit racing pigeon from losing form, the temperature in the loft must be above 10 and below 30 degrees Celsius, and the humidity kept below 65%. These are the conditions that favor continuing health and known as the thermo-neutral zone for the pigeon.

In most lofts, it is the humidity, more than the temperature, which determines whether the birds rest or not at night. Humidity measures the amount of moisture in the air, irrespective of the air temperature, but it is the high humidity (greater than 65%) associated with a temperatures below 15 degrees Celsius that most affects the pigeons ability to rest. The pigeon loses form and becomes susceptible to illness when it does not to get adequate rest.

The droppings in the loft are the best indication of the humidity levels. In the healthy loft, a low humidity (less than 55%) gives a consistently nutty brown dropping, whereas a higher humidity (greater than 65%) will produce green watery droppings. At night-time, when the pigeons need to rest, there is always a rise in the humidity, because as the temperature drops the humidity rises. This explains the droppings turning wet and green the morning after a cold humid night, but which then turn nutty brown by the afternoon as the day warms up and the humidity drops. No two lofts, even if they are identical, will have the same humidity levels, because the humidity inside the loft relates directly to the humidity outside the loft. The controlling factor of humidity is the location (or geography) of the loft. Often fanciers will re-create their previously successful loft design when they move from one house to another but find that they are no longer successful flyers. The only difference is the location of the loft.

High humidity risk lofts:

- Lofts near water (ocean, lakes, rivers, waterways, drainage channels, swim pools).
- Lofts adjacent to large open low lying areas (grassy areas, foggy areas).
- Lofts without sunshine to dry the ground (under trees, in valleys, on the wrong side of the hill and no sun until late in the afternoon).
- Lofts in high rainfall areas.

These lofts require a loft design that stops the outside humidity (moisture) entering the loft.

Insulation is the first step to controlling fluctuating temperatures and high humidity inside the loft. It is the moisture drops of condensation appearing on the inside of un-insulated walls and ceilings that increase the humidity inside the loft to the very high levels that predispose the race birds to restlessness and respiratory illnesses. The insulation of the walls and ceiling will stop this condensation and allow you to control respiratory diseases with the minimal use of medicines.

In high humidity areas, shutting the loft up at night or when it is raining is a good method of controlling the humidity inside the loft (louvers are commonly used), but the air circulation and the

air quality inside the loft must not be compromised. Too often the loft is completely shut up with no thought about air circulation. The resulting stale loft makes the race birds lethargic due to lack of oxygen.

Heaters at night are beneficial for the race team. The healthy team remains in top form when the loft is closed at night by keeping it warm and dry. However, it is better to have a very open loft in flocks recovering from respiratory disease to prevent the "respiratory" germs accumulating inside the loft from re-infecting the race birds.

Oil based bar heaters are safe and effective to use when the temperature drops below 12 degrees Celsius and are used to prevent a loss of form by keeping the air and dry. Dehumidifying machines are also available, but the noise may prevent the birds from full rest.

Hygrometers can be installed to monitor the humidity within the loft, but often the salts in the grit or mineral powder are equally effective in monitoring humidity above 65%. These salts attract moisture. For example, F-vite darkens and becomes granular when the humidity is too high and grits become dark and wet with moisture.

Ventilation

When the air inside the loft is not as fresh as the outside air, then there is a ventilation problem.

The traditional Australian loft is open at the front and gets good race results in areas with low humidity (non-coastal and inland regions, South Australia etc.). Such a loft requires little other ventilation other than vents on the back and side walls of the loft. Place the vents under the perches rather than at the top, so that the air does not pass over the birds resting in the perches. The flow of air over the birds created by incorrectly placed vents is referred to as a draft and causes illness by preventing the birds from resting.

The creation of proper ventilation in enclosed lofts is more difficult to achieve and in dry areas it is often better to avoid enclosed lofts. However, in high humidity and very cold areas the loft must be enclosed at night to maintain the form of the fit race team, although it is opened up as much as possible during the day. The best lofts can be opened up during the day and closed up at night, when it is raining or during cold humid weather.

More ventilation is required in closed lofts than open lofts. Ceiling or wall ventilation fans are often used to improve the circulation inside the loft. Vents placed on the back and side walls near the floor are open during the day and on warm nights and closed when it is wet or cold. Double-check the quality of the air inside an enclosed loft by asking an asthmatic friend to stand inside and pass an opinion as to the freshness of the air.

Pigeon numbers

Overcrowded lofts do not race to their true potential. Overcrowding increases fighting creates restlessness and increases the staleness of the air. Overcrowded lofts have consistently good droppings, although the birds may be healthy. Often healthy nutty droppings return when the numbers are decreased. The best race results occur when the numbers are kept around 25 birds per 6 foot x 6 foot by 6 foot loft.

Wetness in the loft

Waterproofing the loft is a priority, because wet floors endanger the health of the birds. Fit race birds immediately lose form and often succumb to coccidiosis three days after the floor gets wet. Disinfecting or cleaning the loft using water must be reserved for warm days or allowed to dry whilst the birds are out exercising. Concrete slabs hold water and are not recommended for race

lofts and must be designed to drain and dry quickly when used beneath elevated flights during the race season.

Clean loft

Pigeons love a clean loft and rest better when the perches and floor are cleaned free of droppings. Sand on the floor looks good, but is not recommended during the cold months of the racing season. At this time the birds may suddenly over-engage on it and lose form because of the resulting "gut ache". Pigeons love to lie down on straw but it must be perfectly fresh, clean and be free of dust or moisture. Black marks and a musty smell to the straw indicate mould on the straw, which can damage the pigeon's air sacs when inhaled.

The loft is cleaned at least once and even better twice daily during the racing season.

Twice daily cleaning allows the fancier to monitor the health of the race team very closely. A change in the droppings is then recognized very early and the appropriate remedy (either rest, water cleanser, medicines, loft heaters etc.) can be quickly and effectively prescribed. The design of the loft must be such that scraping is made as easy as possible. The floor should be perfectly flat and smooth and the perches must be wide enough and brought out from the wall for easy scraping.

Loft position

The best lofts are positioned in the yard to get the most amount of sunlight from the day during the racing season. In Australia, the best direction to face the loft is between North West to North East, because the sun moves northward during the winter months of racing. Lofts need as much sunlight as possible. They also need space to breathe fresh air and are best away from trees, fences and be elevated.

The resting pigeon

The best designed lofts create an environment that is so relaxing that during the day and at night-time the birds lie down on the ground or on the perch with their wings hanging loose. The compartment sizes should not be too large, but small and low enough for the fancier to catch the birds easily without chasing them around the loft. The race team is tamer and more relaxed in a loft with smaller compartments. The best size sections are 6 inches higher than the fancier, 6 feet deep and 5 feet wide.

Loft materials for ceilings, walls and floors

In high humidity areas the ceiling and walls of the pigeon loft must be lined if consistent racing results are to be enjoyed. Masonite and wood are better insulators than metal. The best floor for racing is made of wood (form ply or marine ply) because it is a good insulator, stays warm, and is smooth for effective scraping. It can be unscrewed and replaced with wired floors during the off season if required. Wood floors are harder to disinfect. Concrete floors are not recommended in the race loft because they are cold and retain moisture, but they are good for the breeding loft and can be used for the race loft if they are centrally heated. In high humidity areas wire floors are not recommended for racing because the droppings beneath the wire accumulate moisture and grow fungus, which causes molding disease. They are acceptable in dry areas and during the breeding season, but must be treated for fungus and insects regularly.

Medicines for Racing Pigeons

As a result of the much improved knowledge of pigeons and the medications now available to manage diseases, the good fancier can enjoy a loft free of disease. The common aim is to produce the healthiest and most robust babies possible by the most natural means so that there

is no compromise to the youngster's immune system. In this way, the young birds will be naturally resistant to the illnesses associated with training and racing, and thereby require the minimal amount of medication during the racing season.

Medications are used as little as possible for the healthy loft. It is very difficult for us all to maintain perfect health in the race team during the racing season and it is the good natural resistance developed during the breeding season which helps us defend the flock against illness. It is now common belief that medications are needed during the racing season if perfect form is to be maintained. However, the medications must only be used when needed. The inappropriate use of medications will in fact turn the birds "off" and break their good levels of immunity.

Nowadays, the wise use of medicines is necessary for racing success. The medicines used for racing pigeons nowadays have been researched extensively so that they rarely affect the form of the fit bird and have minimal side effects for the ill bird. The correct choice of medicines is vital if the disease is to be controlled or cured in the quickest possible time. Obviously, the complete recovery of the flock is quickest when the disease is recognized and identified early. The early recognition of the illness minimizes needless race bird losses and allows the birds to return to winning ways more quickly.

The "preventative" medicines

It is common knowledge that the healthy race bird is at considerable health risk in the race basket and must be protected from the "race basket" diseases by the prudent use of medicines. Medicines used in this manner are referred to as "preventative" medicines. The tired racing bird is most susceptible to disease from the racing basket and so the best time to treat in a protective manner is soon after the race.

The "preventative" medicines protect the healthy race flock from respiratory disease, without affecting the form or natural resistance of the team. I often ask the fancier to monitor the response of the flock to the "preventative" respiratory medicines so that the best timing is assured. There are a few tricks in identifying when to use and when to stop using the "preventative" medicines for the "resident" health problem. Firstly, look for a loss of form, the most obvious signs of which are dropping changes, no powder down feathers on the droppings, dry feathers and a lazy lower eyelid. In those flocks with a "resident" health problem there will be a positive change in the birds the day after the preventative medicine is given. Look for a very marked "brightening" of the eye, the powder down feathers will return to an improved dropping and the feathers become silky. The process is repeated each week for 2 to 3 weeks then stopped when the positive changes fail to show. Then the preventative medication is no longer used until the early signs of loss of form again return. With this method the fancier himself becomes sole master of the health of the race team. This method of controlling a resident illness takes some time to master but once mastered becomes a very important part of controlling a resident health problem.

The "curative" medicines

When there is a disease outbreak during the race season then "curative" (not preventative) medicines must be used. The first signs of a serious disease requiring a curative medicine are

repeatedly poor race results over three weeks or heavy losses over two weeks. The exact nature of the illness must be determined then the appropriate "curative" medicine is used.

"Curative" medicines, by their very name, imply a dose of medicament strong enough to destroy the disease involved. Curative medicines therefore are not given to the healthy flock because they have the side effect of depressing form or affecting fertility etc. They are given only when the birds have an illness or outside the critical times of breeding or racing. They are often used in pre-season race and pre-breeding season health programs. The treatment interval (i.e. the number of days the medicine is given) is longer than that for "preventative" medicines. Preventative or control medicines are given intermittently for 1 or 2 days a week, whereas, the curative medicines are given continuously from 3 days to 45 days.

Introduction to Respiratory Diseases

The Common Signs of Respiratory Disease in Racing Pigeons are:

- Panting after flying.
- Sneezing
- Loft flying decreases
- Race losses
- Eye and nostril discharge
- Swollen cere and sinus
- Stretching of neck and swallowing
- Yawning

The top race performance requires perfect health and fitness.

Performance relates directly to the efficiency of the respiratory and circulation systems to provide the dramatic increase in energy requirements for flight. For example, during normal loft flying the pigeon increases its oxygen consumption fifteen fold and when flying into a head wind the oxygen consumption increases by up to 30 times. These massive energy burdens can only be supported by good health and fitness.

A Check List for Respiratory Disease

Examine the nostril

Any discharge appearing at the nostril (be it watery, tacky or snotty) when applying sideways pressure to the wattle reflects a health problem of the nasal cavity.

Check inside the mouth

The nasal cavity connects with the mouth in an area we refer to as the choanal slit. Many fanciers look at this area during the racing season. A narrowing of the "slit" when there is infection of the nasal cavity accurately reflects the inflammation present throughout the upper airways.

Obviously, inflammation in this area will affect the heat and water conservation functions of the nasal cavity and lower competitive performance. The converse is also true and I agree with the fanciers, who believe that a fully open "slit" is a sign of a bird in top form.

Panting after exercise

When a respiratory infection inflames the nasal cavity and upper airways the pigeon is less able to control the considerable heat production generated during flight. With certain respiratory infections the first sign noticed is panting after or during exercise. Panting is a mechanism which sheds excess heat rapidly. A fluttering motion in the neck (a form of panting) may also be seen in

the overheated pigeon (this is called gular fluttering). Unfortunately both water and heat are lost with panting.

I often see panting when training birds land after a short toss. These birds are healthy but not yet in top condition or are in the moult and have short flights. Because panting is a mechanism to alleviate overheating, we see it in exercising birds on hot days. When panting is noticed within the loft on very hot day's efforts to cool the loft must be taken. Special attention to temperature control within the transporters is essential for the health of the race birds.

We also see panting in unfit birds exercising early in the morning, late evenings or tightly around the loft. It is important for the fancier to differentiate between panting in the healthy pigeon and that caused by respiratory infections.

Respiratory disease involving both the lungs and air sac systems seriously impairs flying performance not only because of the failure of the oxygen delivery system but because the energy systems (liver, muscle etc) are also affected. Disease of the air sac system alone reduces performance because both the delivery of oxygen and the removal of waste products are impaired. The resultant cramping muscles make it impossible for the pigeon to fly.

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