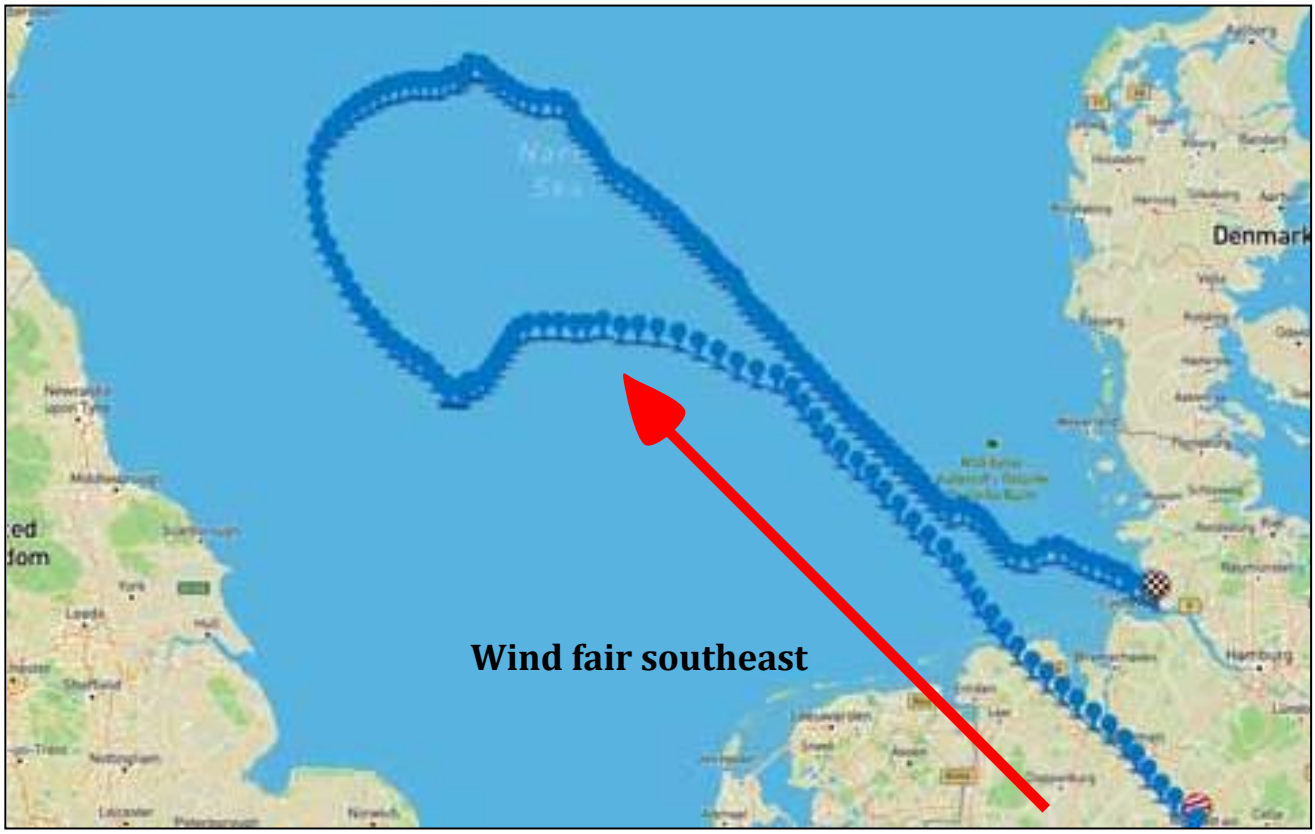
Racing pigeon in exstrem long route

Ove Fuglsang Jensen, Denmark

Racing Pigeon over the sea



The 14 of June 2025 we had a race from Hildensheim 598 km. Unfortunately there was some problem from the sun, which gave some pigeons problem with the bearing. The Hen 217-22-1635 took a long trip over the North Sea where it takes a route from Oilrig to Oilrig. The hen pigeon ended in the north on a oilrig where she stayed for the height.
In the following pages there will be illustration of what maneuver the pigeon are doing. Furthermore there will be information on how long time a Racing Pigeon can fly.

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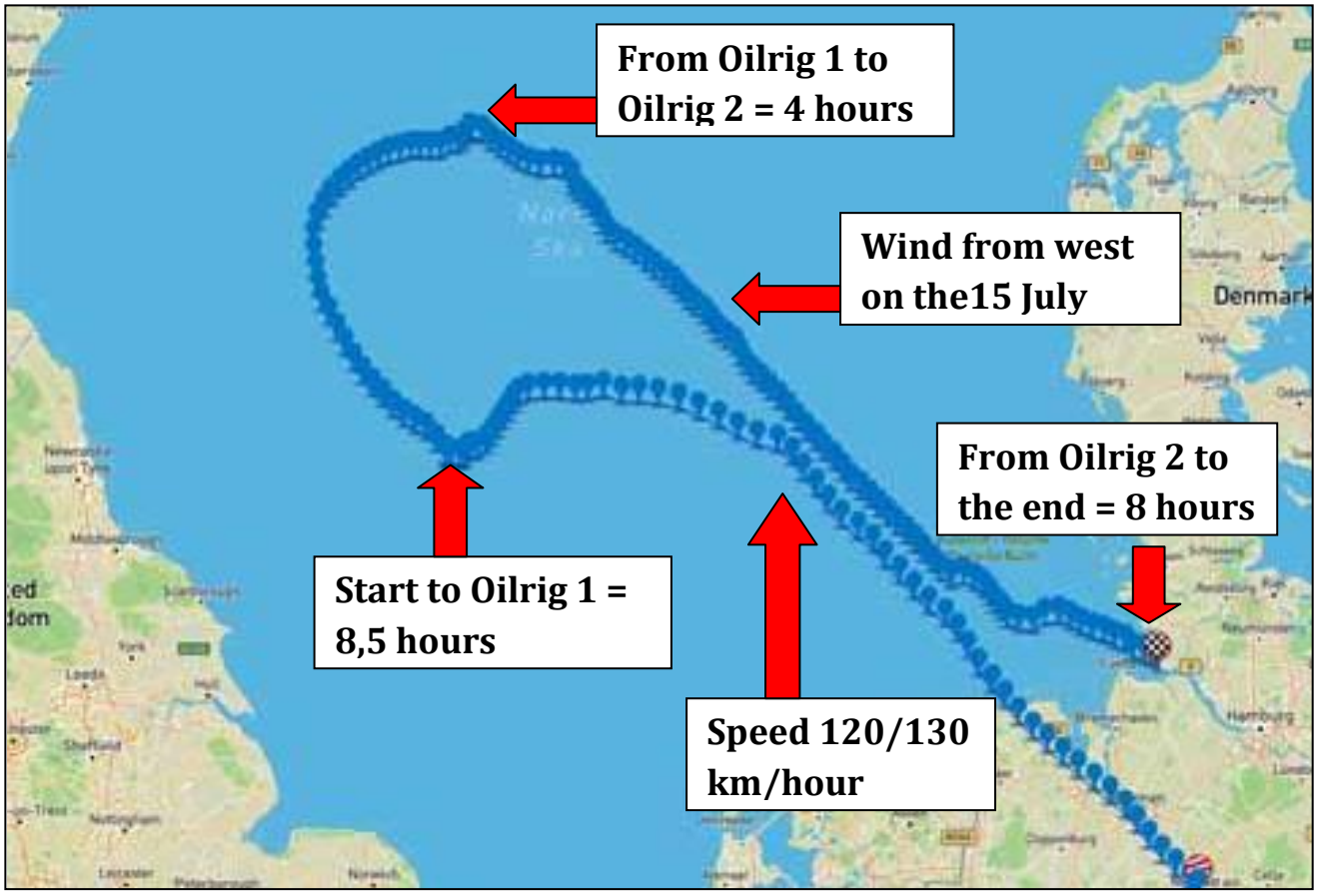
Wind fair southeast.

https://skyleader.com.tw/share/20250708FASbBq

	Average speed	Top speed	Average height	Max height	Distance	Distance flown
1635U	852	2346	62	340	598	1498

If one look at the statistic for the route, it is easy to see that the numbers for Distance flown are spectaculars. This unusual event on the route is what this article is about.

Route map with time in the North Sea



The weather that morning the wind was easy to fair in east and southeast. Later on over the North Sea the wind was fair from southeast and the sight was 50 km.
This fair southeasterly wind gives the pigeon a good speed over the sea at the first lab of the route. This tailwind gives the pigeon a speed on 2000 to 2200 m/m (120/130 km hour). At stage the pigeon reach 2346 m/m (140 km hour).

Next day the wind has change to easy/fair westerly which is very good for the hen 1635 and hereby gives her a good tailwind again! On the final lab the average speed are more normal for a racing pigeon.

From start to Oilrig 1	8,5 hours
From Oilrig 1 to Oilrig 2	4 hours
From Oilrig 2 to the end	8 hours
Total	20,5 hours

The total hours on the wings for the hen 1635 is 20,5 hours. How many hours can a Racing Pigeon normally fly? On the next page see the answer!

PS: The pigeons was released ½ hour before the GPS ring starts! Therefore + ½ hour to the total time!

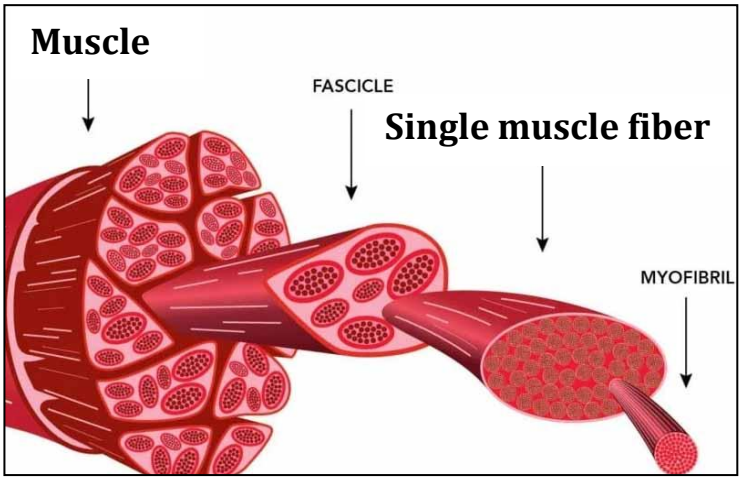
How long can a Racing Pigeon fly?

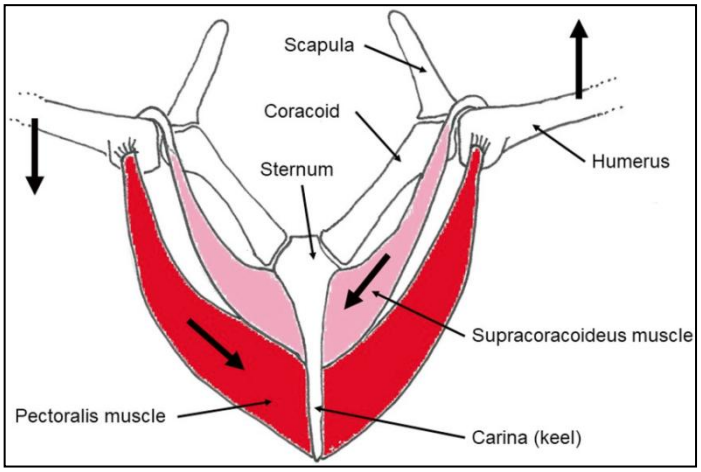
Flying muscle with power and speed

The flying muscle are not one big mass, but contain muscle fibers of 2 different types: Broad white muscle fibers and narrow red muscle fibers.

THE WHITE muscle fibers are 6-14% of the total muscle. The muscles contain carbohydrates and are very fast muscles, but this type of muscles are quickly emptied for energy.

NARROW RED muscle fibers are 86-94% of the total muscle. These thin muscle fibers has blood vessels close to the fibers and therefore the energy can be transported by the close lying blood vessels.





Left Narrow red muscle fiber. Right shows the inner muscle press wing upwards and the outer red muscle press the wing down to speed.

The work of white and red fibers

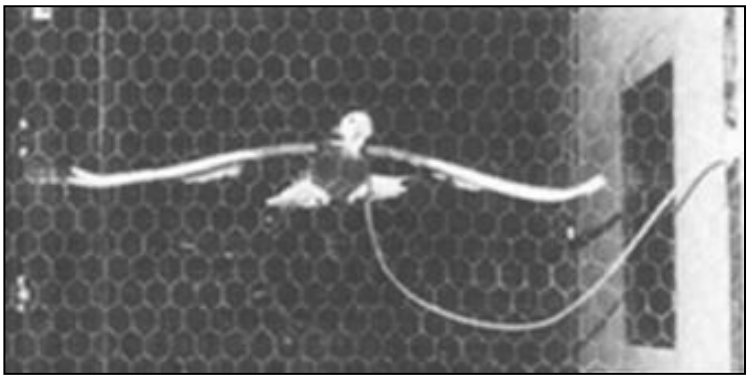
The white fibers are used to the extreme fast movement, that is in release from the basket or escape from a hawk. When emptied fibers are filled up again by Glycogen from the lever.

The red fibers are used for the long tuff races, where the fibers by the blood vessels transport energy from the pigeons fat deposits. Fat are transformed by the lever to amino fatty acid which is transported to the red fibers and transformed to energy.

The pigeons fat deposits makes power

The scientist investigation in the working of the muscle in animal and human goes back to the 1980es. The very start of these investigation was made by H.J. Rothe in 1986 in Saarbrücken University, and Rothe used Racing Pigeon to his investigation.

Investigation in wind tunnel



The pigeon for investigation was placed in a wind tunnel where the pigeon has mask on to measure in/out breeding. After some hours flying the pigeon was weight to control loss of the weight. Through the mask on the pigeon it was measured the amount of oxidant in inhalation and exhalation amount of carbon dioxide. After some hours flying the pigeon got weight to measure loss of weight in form of carbohydrates and fat.

Rothes results:

At the start the carbon dioxide/oxidant are 10/10, but after ½ hour the result was 7/10 and this shows that the pigeon is beginning to use more oxidant to reform the fat to energy. This fact shows that the pigeon after 1-1½ hour only is "driving" on energy by the lever reforming the fat to amino fatty acid which are power to the flying muscles.

By measuring the pigeon after 12,2 hours flying Rothe came to the following result for the energy use of fat in the pigeon:

The Racing Pigeons use of fat in gram
0,05 gram/minut = 3,0 gram/hour
0,06 gram/minut = 3,6 gram/hour
Total amount of fat 38-44 gram

1 gram Fat	9.200 Calories
1gram Carbohydrates	4.200 Calories
1 gram Protein	4.100 Calories

Fat is the very best to make the power to the flying muscles, and here it will be interesting to know how much fat the Racing Pigeon contains.

On the left are the greatest energy sources where fat has the height calorie value.

How much power in the individual pigeon

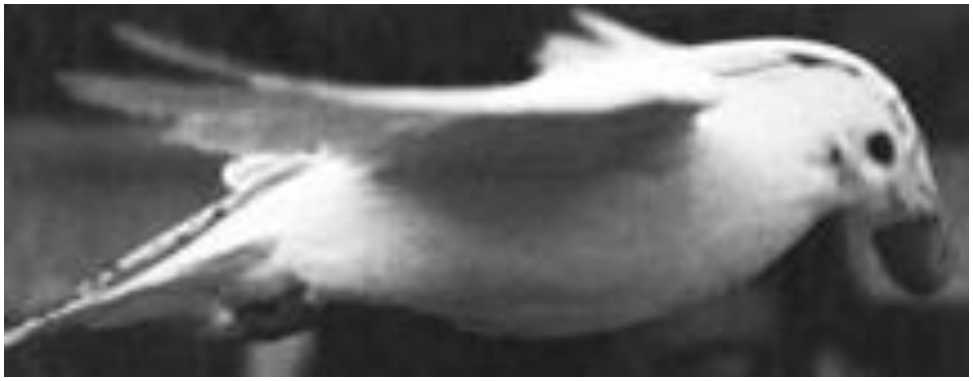
Racing Pigeon are very different in size and volume, specially between the cock and the hen. Underneath are shown the amount of fat in the cock and hen, but if a pigeon have a certain weight the amount of fat will always be 8,8% of the total weight!

	Weight	Gram fat	KM	Hours	Gr. pr. hours
Cock	500	44	855	12,2	3,6
Hen	425	38	880	12,6	3,0

These calculations are made to show the different between 2 pigeons under the same conditions in the race. Are there fx. a tailwind the hole way home, and are therefore a lot easier and the use of energy will be less. One can say that everything are relative in these calculations, but the numbers are in this way average.

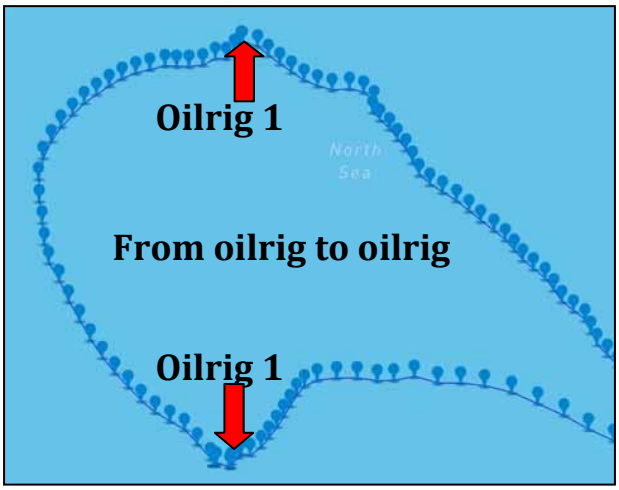
Use of energy shown in graphic

Released from the basket the pigeon use the white muscles to speed in 10-15 minutes. After ½ hour the pigeon are beginning to use more oxidant to reform fat to energy. After 1-1½1 hour the pigeon is "driving" by the lever reforming fat to Amino fatty acid. Run out of energy the pigeon might use the pure muscles.



Pigeons in the investigation by Rothe has a mask on for in and out breeding for oxidant/carbon dioxide.

Long race over the North Sea



Why wrong bearing NW?

When some pigeons at the release take a wrong bearing, there can be many reasons for this. In this case at the 14. June there are two possibilities: Disturbance by the sun in the geomagnetic field, and too early release before sunrise.

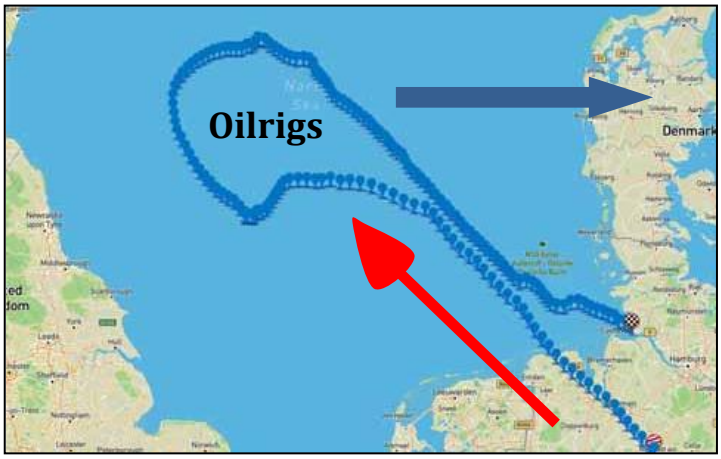
Spaceweather.com came with a warning of a strong geomagnetic storm, and that was true! The storm the 14. June showed to be very strong indeed, and gave a general disturbance in many races. Concerning the too early release in sunrise, the pigeons use the infrared rays for finding a bearing. Maybe this point can be unsure.

From oilrig to oilrig

When the pigeon arrive at the area where it turn to the north, there are many oilrigs in that area, and that is good luck for the pigeons who has lost their way! Our pigeon sits on oilrig 1 from 13.00 to 15.00, and it arrive at oilrig 2 at 19.00 and staid the whole night until 06.30 in the morning. The geomagnetic storm was over the next day and gave our pigeon a good bearing back to land!

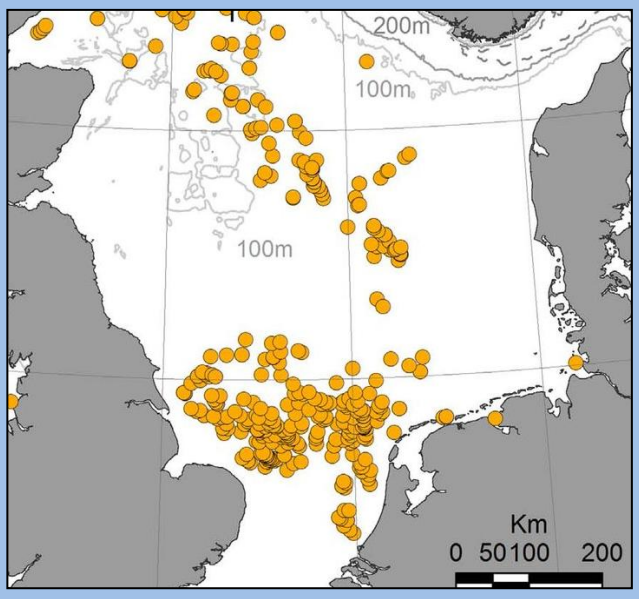
Luck on the race over the sea?

How is it possible for a Racing Pigeon to fly 1500 km in 1½ days?



On the way the first morning the pigeon had a good tailwind from south east and this gave a very good speed in 120-130 km/hour. The next morning the wind had turned to the west and again our pigeon had a tailwind back to land.

Another thing is, that the pigeon ended out in the area where all the oilrigs are standing, and there are a lot of them here.



Map over oilrigs in the North Sea and examples of oilrigs

How long time can a Racing Pigeon really fly?

If we look at the schedule in page 6 where a Racing Pigeon can fly in 12,2/12,6 hours should this be the normal for a very good pigeon. However it is stated by Gordon A. Chalmers DVM, that a pigeon can reach 14 hours, and in rare occasions can a pigeon fly 18 hours, but then the pigeon will be completely emptied for fat and glycogen!
How can my pigeon the hen 1635 fly in nearly 21 hours?
The answer of this can be that, the pigeon had a tailwind on the way out over the North Sea, and the next morning there also was a tailwind back to land.
We all know that pigeons in a race with tailwind save on the energy! It is then a fact that it depend on the circumstances in the weather how much energy the pigeons will use in a certain race.

However I personally think that my hen 1635 has done a extreme good effort in this event!

The power in the battery ended 15. June 14.32 at the river Elben. With a speed on 942 m/m and in 32 meters of height, this shows that the pigeon properly will seek for water and food. The hen 1635 came back to the loft here in the north, and she should then fly around 430 km!

The super long racer 217-22-1635U

The hen 1635 has Vim Müller, Holland as father and Delber van Riel as mother. This show us that this bread has a good potential in the long races! The pigeon has the narrow red muscle fibers in 94% which is important for the long races!

The top picture shows a strong colorful eye and a good wing. Left picture shows a good balance between outer and inner wing. Above shows a powerful inner wing with a good curve to give a good lift.

Super long race through the whole Europe!

The pigeon hen 1635 has flown 1500 km. and if this distance is showed in a straight line, it will go from loft in northern Jylland to the coast of France!