

# THE ABSURD BIRD BOOK\*

ABOUT HOW BIRDS HAVE  
INSPIRED AVIATION

AND SOME OTHER INTERESTING BIRD AND/OR  
AVIATION FACTS

\*NOT REALLY A BOOK

BY BEC LOUGHEED



**THE**

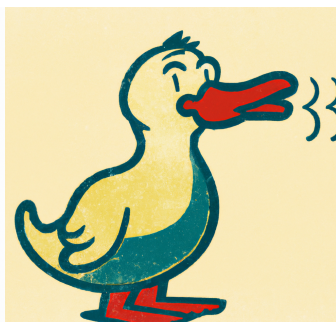
# **ABSURD BIRD BOOK\***

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**R**ather a lot of silliness. Oh, sorry, you want an actual list. OK, fine.

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# INTRODUCTION

**B**irds have a lot to answer for. They have spent their existence swooping about above humans, smugly displaying their winged prowess, while we gaze up with jealousy and increasingly aching necks. It is no wonder that since the beginning of time (*the time when humans began to be able to think creatively and design useful stuff*) we have wanted to find a way to join our avian overlords.

A huge number of books have been written on the history of flight, on how we progressed from kites, to balloons, to other powered apparatus. This isn't a book about that. It isn't even a book actually. It is just a compilation of things I have read which I think are really interesting and decided other people might like too.

Let's begin.

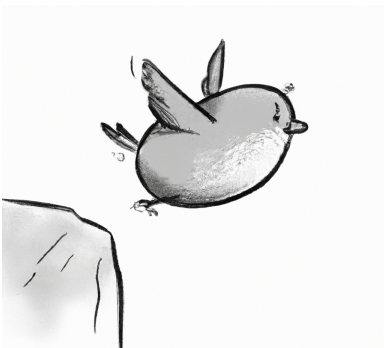


# BIRDS STARTED IT ALL

Given their air mastery and the way they make it look so easy, *the fact they look so free*, it is hardly surprising that humans tried to copy birds by sticking wings onto things in our attempts to get airborne. Wings, of course, are not the only way we attempted to take flight though. Hot air balloons are not, as far as I know, based on a unique inflating bird variety. But, in general, birds and other winged-things have played a major role in humankind's aeroplane design and innovations.

This whole random '*not a book*' book about the influence birds have had in aviation was inspired by the Royal Aeronautical Society and an early study into birds which they published in 1909.

Let's set the scene. 'Twas a mere year after the British Aviation Industry had been set up. The world was on a new path - to the skies.



Only a lot of people were slipping, sliding and spectacularly crashing off said path because flying was not, yet, something humans were particularly good at. Enter the Aeronautical Society, created with the intention of helping folk interested in perfecting flight to come together and find more perfect flight solutions.

And they decided to get '*sciencey*' about it all.

The society figured a lot of people were interested in building better\* flying machines, and so they decided they could help by sharing the latest and greatest knowledge on how birds do it, because birds were, and still are, very good at it. The thought process was probably something along the lines of "*they can do it, we kind of suck at it, let's learn from them.*"

\*Just building ones which didn't have quite so many incidents.

The report was put together by none other than the **Bird Construction Committee**, and it sought to first classify birds into several categories - things like 'Sailing Birds', 'Birds which Chiefly Flap' and 'Leaping Fliers', amongst others.

They then watched a lot of birds and so were able to make informative insights such as how a lot of birds tend to '*either run swiftly along*' or '*advance by hops*', after which they all take a '*vigorous jump*' in order to get themselves into the air. Unless they are a larger, heavier bird, in which case they tend to '*throw themselves off cliffs*'.

This is all elaborated on within Section II. *'General Description of Flight and Flight Manoeuvres'*, along with insights such as that some birds can (possibly\*) elevate themselves to altitudes of 35,000 or even 40,000 feet *'without suffering inconvenience'*.

\*They couldn't be totally sure on this because humans, in 1909, were not able to get that high to check. In all fairness, it wasn't an entirely wrong assumption, although not that many birds bother.

Section III. *'Notes on the Physical Characteristics of Birds etc'* is interesting. For example, were we budding aviation contraption building enthusiasts just starting out on our quest for a new design, then we might use this section in order to consider our potential fleet options, in a not so dissimilar way as modern day operations planners do:

**Reginald:** *I am considering building a new aircraft. I must say though, I am not sure whether to base my design upon the Lyre Bird or the Parrot. What say you, Cyril?*



**Cyril:** Well, old chum, I actually stumbled across this rather useful guide to bird construction recently, and I can certainly tell you that while the Lyre Bird might have shapely wings and very strong feet, it shows a distinct unwillingness to actually bother flying. And parrots seem to spend most of their time in trees.

**Reginald:** Good Lord, jolly lucky I spoke with you then, isn't it. What would you recommend?

**Cyril:** Well, it depends on what your plan is for this aircraft, but if it is perhaps for some sort of airborne defence where you'll be chasing other aircraft around, then I would suggest a study of the Swallow or the Shrike. They have these exceedingly long wings you see, and spend most of their time catching insects in the air.

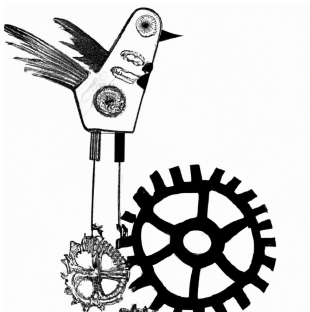
**Reginald:** Splendid. Just the job I'd say. One last question - would you recommend the Pheasant?

**Cyril:** Not even to my Great Aunt Mildred! Useless ground dwelling things, and they never wash their feet.

The real gems of knowledge, however, are contained within the section on 'Observations and calculations regarding the velocity of birds, the power expended etc.'

Within this section are copious formulas, measurements and discussion on the velocity of particular bird types, the amount of energy they expend, and how efficient they are. Some of it led to useful remarks on where the most efficient centre of pressure might be, and some of it as they do point out (several times) are possibly less reliable due to the sheer difficulty in really establishing actual facts.

But all in all (and given it was written in 1909) it is a delightful, insightful bit of scientific study that any budding aviation enthusiast could make use of. It is also an excellent example of how birds have been not just involved, but key in our flying adventures since (almost) day one.



# THE CHINESE KITE

It is worth mentioning the kite. English speaking countries call them 'kites' because they are named after the bird of prey, the kite, known for its ability to hover around in the air before swiftly zooming at whatever appetiser it has spotted in the undergrowth.

Which came first? The bird, obviously.

Anywa,kites, history has it, were first invented by the Chinese and used by the military for passing messages and measuring distances, and things like that. They were, as you have possibly guessed, designed to mimic a birds wing. If you watch *'How to Train your Dragon'* then this is a great and clearly very scientific example of how a kite can mimic a natural aileron.

The Chinese found two great uses for this. The first being it enabled them to 'get the message' to the entire army all at once. They had very large armies. Passing paper messages would take forever, but having it hover up above their heads was instant. Secondly, from a distance it probably just looked like a bird and so made it hard for the opposing army to work out what was actually just bird and what was an important message kite.

Scholarly historians reckon these were first designed around 1000BCE. In case you are wondering when that is, the BCE's came before the ADs. So over 3000 years ago. Although mankind did start using tools\* about 300,000 years so less impressive if you think of it like that.

\*Interesting Fact #1: Crows can use things as tools, and also fly, so if we are measuring human greatness by those abilities alone, the crow has been our superior for a very long time.

Fast forward to 500AD and we are in what is generally called the Middle Ages. While it was a period of great innovation, technology was not what it is now. Things pilots take for granted on their flights nowadays like, say, the magnetic compass\* (which the Chinese invented around 200AD) were not even around. Bernoulli had not been born. There was no ATC.

\*The magnetic compass is still, to this day, considered one of the Four Great Inventions, along with gunpowder, paper-making and printing. You might think that the internet, the engine, penicillin or any of a hundred other things should be on that list. Personally I think the wheel probably should be although arguably the humble dung beetle thought up rolling first. Anyway, the reason these are hailed as the *Ultimates* is because they marked the greatest advancements in humankind's ability to basically conquer the world.



Without them we would not have got to a point where the other things we now think of as *The Greatest* could actually happen. We would all still be scrabbling about getting eaten by things meaner than us, probably totally lost because there are some clouds obscuring our star guides, and even if they weren't, we wouldn't actually know what stars to follow anyway because no-one has invented a way of recording them on a map...

The Chinese\* did, however, have the kite and at some point, but no-one is sure when someone (probably) said "*Birds fly with wings. We created kites which are based on birds' wings. Maybe... maybe I can fly if I use a kite, right?*" They were not wrong either. Gliders are basically massive kites strapped horizontally to your back. But a key (and rather critical) point is that the kite needs to be relatively large.

\*I should really have titled this book 'About how Birds and ancient China inspired aviation', because they also invented paper making. It is credited to a gentleman called Cai Lun, and it was his wise addition of wood pulp which made it so massively manufacturable of a major scale.

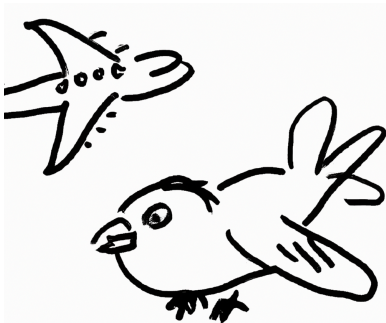
Gunpowder also came from, you guessed it, China. And the ancient Chinese also did a lot of wood block printing, but we're going to credit a German called Gutenberg with the big proper printing press which really resulted in a revolution.

Anyway, back to kites, and a guy called Yuan Huangtou, and another guy called Gao Yang. Gao Yang was a general who usurped Emperors and set himself up as big Chief instead. Yuan Huangtou was the unfortunate son of one of the Emperor's Gao Yang disposed off, and so he was captured and imprisoned.

Now, Gao Yang had a bit of a hobby. He really liked flying kites. More specifically, he liked letting his prisoners fly themselves off a really tall tower (the Golden Phoenix Tower was about 33 metres tall) with a large kite. It is not entirely clear why, I am making the assumption that he enjoyed the prolonged splatting of his prisoners, rather than the instant one if they were simply pushed kiteless from the top of the tower.

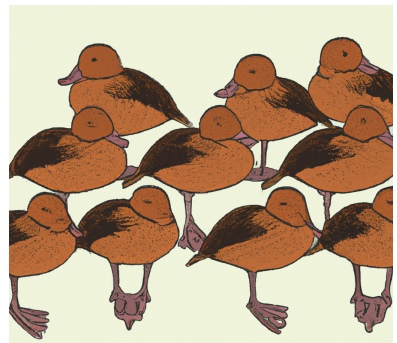
Regardless, no-one ever survived this until the (un)fortunate Yuan Huangtou. Records have it that he flew as far as the 'Purple Way' - a road a good 2.5km away from the tower - making him quite possibly the first (recorded) successful human flight. This took place way back in 559AD. In case you're wondering how long ago that is, it is about 1345 years before the Wright Brother's first flight in 1903.

Yuan Haungtou was put back in prison afterwards and died of starvation, but since he holds such a prestigious title I felt he deserved to be celebrated both on Wikipedia and also now in this thing that isn't a book.



Of course it is perfectly possible someone else was successful, elsewhere and earlier, but didn't have the paper-making or printing ability to record it.

So, humankind's conquering of the air seems to have started with the simple kite which was started by the actual kite when it grew its wings and started hovering, and now we have airplanes, with a bit of science and a whole bunch of time in the middle.



# BIRDS ARE NOT ALWAYS BEST

This is taken from a book by one of my favourite authors, a man named Randall Munroe. He is excellent. He writes books called 'What if?' And 'What if? 2" and hopefully one day even a 3 or 4 or 5 or... anyway, he writes books called 'What if?' which provide "serious answers to absurd hypothetical questions".

Science applied to the ridiculous.

I like them because they are filled with humour, and actual science, but mostly because, when you think about it, so many of the things we take for granted, particularly science and technology wise, probably seemed utterly ridiculous back when they were first thought of.

**Reginald:** *A splendid morning to you Cyril. I wonder - what do you think the best way to move people around the globe would be?*

**Cyril:** *As a scientist who knows a lot about the impassability of land bridges due to ferocious krakens that live in the waters beneath them and oft attack people, I would say the air is your best bet.*

**Reginald:** *And how would you go about achieving that?*

**Cyril:** *Well, I suppose I would stuff loads of people into a tube, probably made of metal or something far heavier than air and then light parts of it on fire, and with that it would somehow defy gravity.*

**Reginald:** *What a remarkably absurd idea, old chum! Let's try it.*

Even though we know an airplane doesn't actually defy any laws of gravity, it is still quite preposterous when you think about it. If you tried to tell an ancient ancestor about an airplane they would probably just picture a giant winged bird or some sort of benevolent, Godly sky-whale like creature. Point is, the ridiculous is often only ridiculous until someone actually proves it possible, and then suddenly science wins.

Back to Munroe, and in 'What If 2?' there is a short chapter which answers the question 'How many pigeons would it require in order to lift the average person and a launch chair to the height of Australia's Q1 skyscraper?' I would like to evaluate some of the points raised in the very wise and scientific answer Munroe provides, because it answers some questions about why aircraft are actually designed the way they are...



and why we didn't go down the road of tethering multiple birds to chairs as a different means of transportation).

As Munroe points out, pigeons aren't particularly strong. They can lift around 25% of their body weight while moving vertically upwards. This was discovered in an actual study carried out at an actual university involving actual trained pigeons.

Interesting Fact #2: Pigeons are surprisingly trainable.

So, as the chapter continues to explain in detail, you would need an excessive number of pigeons to lift one person and their chair vertically upwards. On top of pigeons' poor person and chair lifting powers, they can also only maintain directly vertical flight for a few metres at most...

So unless you managed to create some sort of pigeon projectiling device to assist them, then our dreams of pigeon powered Harrier jump jets are out the window, and our plans for an P380 (PigeonBus) carrying several hundred passengers over international waters are very definitely not going to get off the ground.

But of course, birds don't tend to fly vertically upwards. Many go for a running launch technique not unlike our own rolling airplane method. So could you not tether yourself to many stronger birds that do this? Like some eagles?\*

\*Interesting Fact #3: The Great Harpy Eagle from southern America not only has impressive talon gripping strength, but is one of the strongest lifters out there. It can carry a 30lb sloth which makes me dislike it somewhat, because I am a fan of the innocent sloth. But it also impresses me because the Harpy itself weighs around 20lbs meaning it can lift itself, and itself again, showing far greater lifting prowess than the measly pigeon with its 25% of body weight only strength.

A big bunch of these bad boys\* tethered to your chair and away you (might) go.

\* Interesting Fact #4: You should actually use the girls, they are way bigger and stronger.

On the other hand, maybe we should resort to more simple methods. For example, a study of their flapping power might provide some helpful insights into the best way for a human to take flight?



# WHEN I SAID BIRDS ARE NOT ALWAYS BEST I WAS REALLY JUST TALKING ABOUT PIGEONS

Yes, let us continue our study the Harpy Eagle because frankly, they are impressive. They are glorious looking and they can flap really hard. Which raises the sciencey question of why humans can't just strap wings to their own backs and flap and soar like eagles?

This was of course tried with things like the Ornithopter and it doesn't work. But why not?

The Harpy's power comes from their breast muscle, which controls their flapper muscles. These can be as much as 20% of their overall birdly weight. So, an average human weighing in at something like 150lb, or let's use kg and call it 65, would need chest muscle weighing around 15kgs.

That seems a lot.

I tried working out how much of us is actually pectoral muscle by googling '*how much does a chest muscle in a human weigh?*', '*how big is the pectoral muscle*' and various other versions of this question, and got results ranging from dubious guesswork, to

pictures I really wish I had not seen. I finally googled the actual question I was trying to answer - namely how big would this need to be for us to fly - and google (oddly via a site called '[guernseydonkey.com](http://guernseydonkey.com)') answered it for me by saying it would need to project out about 1.25m.

We would look hideous. Our current muscle is about 14cm long so that's a lot of extra muscle needed to allow us to get airborne. Of course, we could rig some sort of motor to our chest to do the flapping for us but it all feels rather tiring, and even if we did get it to work, we would soon discover that it is really cold up at altitude and there is a reason why birds have loads feather covering their bodies, and their flapping efforts probably help keep them warm too.

Interesting fact *#not bird related*: bumblebees can de-clutch their wing motors from their wings and run them when they're cold because it makes their bodies vibrate and heats them up.



# OK, BIRDS ARE THE BEST REALLY

Another clever person at some point spotted the fact that birds don't just flap loads. I think we sort of knew this before really, but it is only recently when we started stuffing them into wind tunnels, that we really started to see just how complex their wing designs are, and how we might pilfer some of their designs for our own use.

Birds don't just flap and push air up, down and around to make themselves move. They can also glide. Of course they can. Some of them can even adjust their wings to stay stable in gusty air and to benefit from changing currents. They don't do this by just holding their feathered limbs out and hoping for the best - those feathers and indeed a lot of parts of their wings move and morph, flex and yes, flap and the result is graceful.

You don't see many birds tumbling about the air trying to stabilise themselves as the stall and barrel roll about uncontrollably.

Some birds also have the skill to perch on things. I shall call them 'perchers'. Their skill is not in the perching itself, this just requires legs and feet, but it is in how they get onto the perch in the first place. Take the duck for example - a terrible percher. They need lengthy water landing strips to splash along before they can come to a stop. But the clever perching birds can land upon spindly

branches, and narrow ledges with precision and accuracy. I am sure you have watched one of these at some point, and may have noticed that they don't (or very rarely) just barrel down and smack onto window ledges.

OK, sometimes they do, but if they have been taught well by their bird parents then they tend to use a rather clever technique where they rapidly pitch their wings upwards to a high angle and then just as rapidly fold them in. This sweeping motion helps them decelerate really fast.

Of course, there are some designs already out there that incorporate some of this 'naturechnology'. The Boeing 787 for example has a system called 'cruise flap' where it can adjust its wing camber (automatically) in flight to keep its wings more efficient, by reducing drag. And many a wing has been created to be somewhat flexible for gusty conditions.



# THE OWL IS THE VERY BEST

The mighty Owl is oft used for study purposes because it has really great wings. They are the Mercedes Benz\* of the avian wing world.

\*I don't know if that is a good example, I don't know my cars, but Mercedes strike me as sleek, fast but also quiet.

For example, did you know they produce 18 decibels less noise than other birds with similar wing speeds? There is a good chance owls regularly swoop about behind our heads and we are completely unaware of it because they are so silent\*

\*It isn't very likely at all. There is a phobia - *Ornithophobia* - which is a general fear of birds. And the less well known (and probably not real) phobia - *Anatidaephobia* - which is the fear that a duck may be watching you. Just watching, not necessarily contemplating attacking.

Of course, the owl evolved this way to help it swoop in and snack on mice more easily because if they don't hear it coming they are less likely to try and avoid becoming a midnight feast. This *naturechnology*\* could be handy for airports that have people living nearby trying to snooze.

\*I just realised there is actually a word for this - biomechanics, biotechnics... in fact several words which roll far more easily off the tongue than naturechnology. Apologies for that.

In fact, this is *exactly*\* what a Chinese scientist thought. They did a big study on it and showed that, indeed, serrated edges produce a lot less noise than flat ones.

\*not exactly.

Aside from the owl studies, there are also geese studies looking at how they fly in V formations. Geese do this because they fly long distances and get lazy, so the birds at the back can benefit from the hard work of the ones in front, and coast along in their swirling wake, conserving their own energy. Airbus tried it with a couple of A350s across the North Atlantic and the one at the back saved a whopping 6 tons of CO2 emissions. They ruined it slightly by deciding to coin it 'fello'fly' though.

Interesting Fact #I've forgotten: It is called 'wake-energy retrieval' and uses the principles of 'Biomimicry'\*.

\*Another word far better than my naturechnology. I really don't know why it didn't occur to me that someone had probably already thought of a word for this.

Birds still hold tightly onto the secrets of their wingly wonders but a lot of clever folk are studying them and coming up with clever ideas from them. Thanks birds. And clever folk.

You can read all about these if you search for things like *'Aerodynamic performance of owl-like airfoil undergoing bio-*

*inspired flapping kinematics*' (in the Chinese Journal of Aeronautics but don't worry, it is in English).

Or '*Leading edge serrations for the reduction of aerofoil self-noise at low angle of attack, pre-stall and post-stall conditions*', or '*A Review on Aerodynamics of Non-Flapping Bird Wings*' or, well, actually just search online.

Most of them have pictures but are as dry as the titles suggest.



# BACK TO THE HUMBLE PIGEON

Nowadays airplanes have GPS navigation systems (the ones that use satellites) to help them find their way through the skies. But there was a time when it could have, might have, (definitely shouldn't have) been a possibility that airplanes could be Pigeon Guided.

Yep, Global Pigeonavigation Systems (GPS Version 1.0) could have been a thing.

The brains behind this project was a guy called B.F. Skinner\*. Skinner trained 64 pigeon pilots - selecting pigeons presumably because (as mentioned above) they are actually very trainable, but also because they of course have rather impressive homing skills. The Project Pigeon plan was to have 3 pigeons installed in the nose cone of a missile where they would also have a little peckable screen in front of them. The screen would show the target and if the missile began to go off track, the pigeon would peck it back in-line.

\*B.F. may have stood for Bird Friend

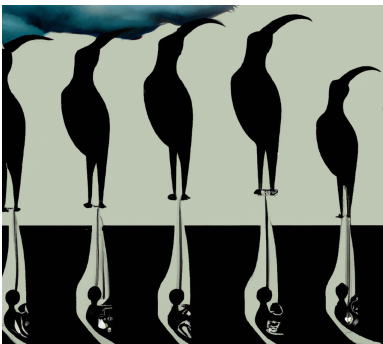
The project was, unsurprisingly, cancelled. More surprisingly, it was then revived again a few years later and then, very surprisingly, ran for a whole 5 years before being cancelled for good when the reliability of electronic guidance systems was shown to be somewhat better than pigeon beaks. That said, the pigeons, once

trained, were incredibly accurate and rarely failed in their direction giving, so it was only the advancement of 'other' technology that really stopped pigeons in airplanes being a thing\*.

\*I can't say that for certain, but given the project wasn't *not* successful, and considering how military technology generally makes its way eventually to the civilian industries, I don't think it is an impossibility that this could have happened.

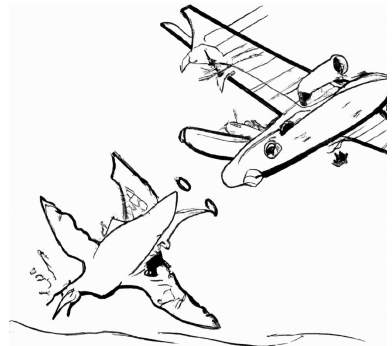
Anyway, possibly if electronic guidance systems hadn't emerged at the same time, then an airplane with a pigeon installed in the nose cone might have taken off, *excuse the pun*. No need for compasses, GPS, heavy complex electronics and wiring... Just a pigeon, a screen, and admittedly a whole lot of training (and the obvious issue of what happens if the pigeon dies mid-flight\*).

\*Interesting Fact #6: Pigeons can live to at least 15 years in captivity, sometimes well into their 20s.



You would also probably need a specific pigeon depending on where you wanted to fly too as well, and that could get messy if you accidentally installed the New York guidance pigeon instead of the Sydney Guidance Pigeon.

Rather sadly, but probably rather luckily, Global Pigeonavigation Systems did not become a thing and there ends this chapter. Although I did read that bees are incredible navigators and use the same methods as pilots of old (pre-avionics) did... so, any scientists want to explore that idea?

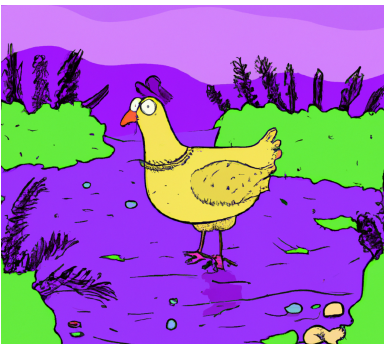


# THE BIRD NOTAM

We can't possibly have a book on birds and flying unless we mention the Bird Notam. Notams (for the non aviation person reading this) are the means by which airports and authorities send out important information so pilots don't run into trouble. Things like airports being shut, runways having big holes in them, and of course, whether an airport is rife with birds or not so pilots can try and not fly into them.

These Notams are probably a joy for the bird spotter because they list some wondrous bird types and sizes. For example, before reading this had you heard of the Purple Swamphen? How about the Hooded Crow? The Lesser Whistling Duck?

Well, fly into some airports in Thailand and you will.



You can find some often very lengthy notams telling you about them, which is great but completely unnecessary really because there isn't a whole load a pilot can do about it if one of these rare or distinguished creatures decides to fly at their several hundred tonne aircraft as it hurtles down the approach at a hundred or so miles per hour.

The sad fact is, while birds are the ones that helped us get airborne, our thanks to them is to fill their airspace with massive, metal versions of themselves and regularly bash into them. Aside from the odd engine vs bird battle where some damage is wrought, the airplane usually wins with only minor injury.



# BIRD VS PLANE

If Hitchcock's film is any indication, then birds may one day revolt which is why\* testing against bird impact is a requirement for airplane and airplane engine manufacturers.

\*It isn't why, but they do pose a real safety problem. Or airplanes pose a problem to them by being in their airspace, but this rapidly can become a problem for the airplane if the bird flies into its engine or another important part of the airplane. So testing to see how aircraft and engines will withstand birdstrikes is a requirement.

Interesting Fact #6 (*I think*): There is a such a thing as a 'Chicken Gun'. Actually, they often fire turkeys, sometimes frozen ones, at engines to make sure the engines don't totally explode.

*"Do airplanes often fly into turkeys?"* You ask. Well, no - turkeys can fly, but only for short distances, and relatively close to the ground (although they do it at very high speed, so more of a semi controlled hurtle really). But there are some *monster* creatures out there you could fly into.

Like the Bearded Vulture. These can weigh 6 or 7 kilograms. Their cousin the Ruppell's Vulture has a wingspan of 8 feet, and is one of the high fliers the RAeS folk surmised about in 1909. In fact, one of these entered an airplane's engine at 37,000' (I used the word 'entered' but what I mean is rather violently and gruesomely met

with the engine head on). It still currently holds the record for the highest recorded strike which I am sure is no consolation for it.

That was Interesting Fact #7. Interesting Fact #8 is that the acronym B.A.S.H is actually used in aviation. It stands for Bird Aircraft Strike Hazards.

Whilst no bird strike has ever helped aviation, the odd airplane crash has, very occasionally, led to bird discoveries. Apparently, the Black Sicklebill was discovered by the crew of a U.S. Army Air Force transport plane that was forced down in the mountains of Papua New Guinea during World War II. Not forced down by a bird I should add.



# THE END

Like I said at the start, this is not a book, just a collection of things about birds and aviation which I found curious and interesting. Like one of those shops you discover down a dark and semi-abandoned alley in a random city, that contains old maps and random things in jars. You leave it and when you decide to return the next day you can't find it again.

Or nothing like that.

Anyway, here is a final bit of bird inspired aviation interest. More of a shower thought really.

Birds evolved about 150 million years ago. They came from the T-Rex\*

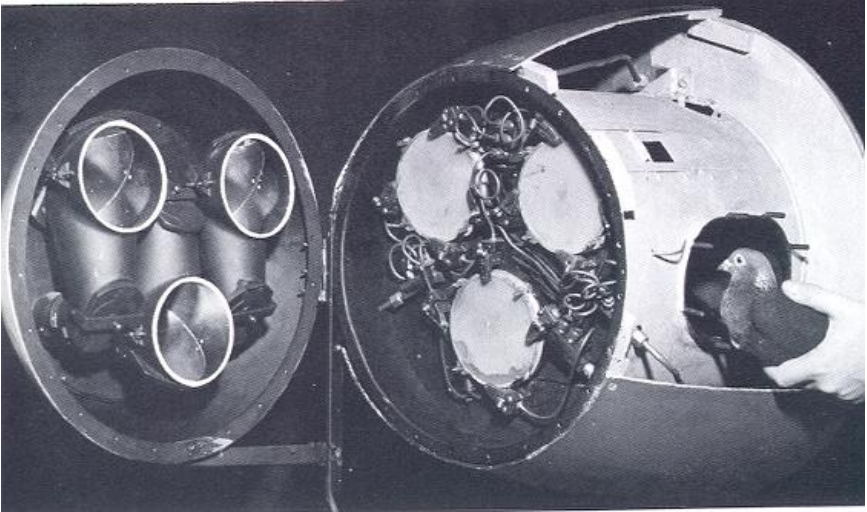
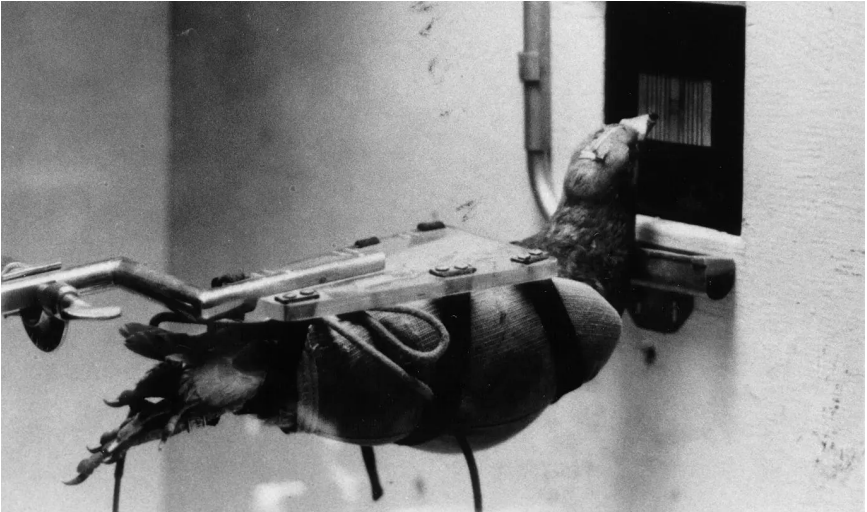
\*Not a scientifically accurate statement, they belonged to the same group of dinos as the T-Rex, but came from much smaller 'Theropods', and were pretty much the only things to survive the results of the asteroid. Actually things in the water probably did too. Anyway, the birdosaurs did well out of it and then continued to do well by evolving over the millennia.

So, birds have been honing their flights skills for 150 million or so years. Humans have been doing it for less than two centuries (if you count from the Wright Brother's in 1903), and not all that much

more in the scheme of things if you want to go right back to the Age of the Chinese Kite.

So, if birds can get this darned good at it, just imagine how good we can get.

Possibly.



# SOME REFERENCES

(Because that's what a proper book has.)

1. Aeronautical Society of Great Britain First Report of the Bird Committee. <https://raes.soutron.net/Portal/Default/en-GB/RecordView/Index/47668>
2. A wikipedia page on the kite man [https://en.wikipedia.org/wiki/Yuan\\_Huangtou](https://en.wikipedia.org/wiki/Yuan_Huangtou)
3. A random Chinese tour guide page with interesting facts about the history of the kite <https://www.chinahighlights.com/travelguide/culture/kites.htm>
4. Randall Munroe 'What If? 2' Get it on Amazon
5. The Pigeon Project <https://www.smithsonianmag.com/smithsonian-institution/bf-skinners-pigeon-guided-rocket-53443995/>
6. ICAO Notams. You can search for 'birds' here and see what comes up. <https://www.icao.int/safety/istars/pages/notams.aspx>
7. Chicken Guns [https://en.wikipedia.org/wiki/Chicken\\_gun](https://en.wikipedia.org/wiki/Chicken_gun)
8. Vulture information <https://www.historynet.com/when-birds-strike/>
9. Proof BASH is a real acronym [https://www.acq.osd.mil/eie/afpmb/natural\\_bash.html](https://www.acq.osd.mil/eie/afpmb/natural_bash.html)
10. How Dinosaurs turned into birds <https://www.nhm.ac.uk/discover/why-are-birds-the-only-surviving-dinosaurs.html>

11. If I'm being honest, I got this reference from ChatGPT and can't actually find the relevant book. Mayr, E. <https://digitallibrary.amnh.org/bitstream/handle/2246/3965/v2/dspace/ingest/pdfSource/nov/N0828.pdf?sequence=1&isAllowed=y>
12. Airbus fellofly page <https://www.airbus.com/en/innovation/disruptive-concepts/biomimicry/fellofly>
13. All images from DALL-E, except for the last 2 which come from the Pigeon Project, and one other - if you can guess which then you might\* win a prize.
14. Not mentioned but should be is Richard Dawkins 'Flights of Fancy'. A great book!

\*you won't

This isn't a book though so these are not properly written and probably not in order either, and I will add a disclaimer here that while I did research some of this, I only did it for as long as it was vaguely interesting to me and then I stopped.

So it might not all be accurate.

But I think most of it is.



# **THE ABSURD BIRD BOOK\*** **ABOUT HOW BIRDS (AND ANCIENT CHINA) INSPIRED AVIATION** **AND SOME OTHER INTERESTING BIRD AND/OR AVIATION FACTS** **\*NOT REALLY A BOOK**

**BY BEC LOUGHEED**

*This thing that isn't a book is for:*

*Anyone who wants to read it, or who has a vague interest in slightly obscure aviation stories and facts.*

*Who am I?*

*(Almost) a Boeing 787 pilot, previously an Airbus A330/340/380 pilot. A writer of alerts and briefings on all things aviation (or that might impact aviation). A lecturer for a university on aviation risk stuff, crisis stuff and fleet stuff. A cheese addict, beer brewer, (very bad) fencer and professional sock designer who spends half her life in a town in the UK, and the other half in Dubai where her multiple greedy cats and a husband live.*

