
Opening Extract from...

Mayday!

A History of Flight Through its Martyrs, Oddballs and Daredevils

Written by David Darling

Published by Oneworld Publications

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A HISTORY of FLIGHT through its MARTYRS, ODDBALLS AND DAREDEVILS

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ONEWORLD

A Oneworld Book

Originally published as *The Rocket Man* by Oneworld Publications, 2013.
This paperback edition published in 2015.

A CIP record for this title is available from the British Library

ISBN 978-1-78074-409-4
eISBN 978-1-78074-565-7

Typeset by Tetragon, London
Printed and Bound in Great Britain by Clays Ltd, St Ives plc
Illustrations by Brett Ryder

Oneworld Publications
10 Bloomsbury Street, London WC1B 3SR

With love to
Emily and Lewis,
who'll soon be flying high, too

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Introduction

Do you want to jump into thin air with nothing but a pair of outsized bird wings stuck to your back, or take off clinging to a rickety framework of wood and canvas? Do you want to fly higher, faster, or further than anyone's done before in some contraption that looks like it's held together by school glue and wishful thinking? Then you're ready to join the club of pioneering aviators: that band of daredevil adventurers who have risked life and limb to push back the boundaries of flight.

But don't expect to live long. The survival rates for those who went up in the early balloons and planes aren't encouraging. Many of the characters in this book ended up in fatal or near-fatal crashes – taking one risk too many. Hydrogen balloons caught on fire and plummeted to the earth, early winged craft flipped or broke apart or just plain fell out of the sky, pushed beyond their limits. The German Otto Lilienthal – the 'Glider King' – lasted longer than most. He built and tested a variety of his own craft at the end of the nineteenth century and even made an artificial hill near Berlin as a launch pad. Between 1891 and 1896, he and his brother Gustav flew about 2,000 times, risking death every time they leapt off the slope. Eventually, Otto's luck ran out: his glider stalled, and he fell

more than fifty feet, snapping his spine. He died the next day uttering the final words: '*Kleine Opfer müssen gebracht werden*' ('Small sacrifices must be made').

The fatality rate among early exhibition aviators was terrifyingly high – around ninety per cent. They not only vied to out-do each other, they were flying planes at a time when designers were still battling to understand the most basic problems in aeronautics. Arch Hoxsey and Ralph Johnstone starred in the Wright brothers' exhibition team formed in the spring of 1910. For a brief time they enthralled crowds around the States and were dubbed the 'Heavenly Twins' by newspapers, but by the end of the year both had been killed: Johnstone when his aircraft's wing's broke off during a 'spiral glide' and Hoxley while trying to set a new altitude record. Working for the rival team of Glenn Curtiss, Charles 'Daredevil' Hamilton flew dirigibles and made death-defying parachute jumps. No stunt was too outrageous for him and, incredibly, he survived more than sixty crashes, though he was permanently scarred, had two replacement silver ribs, and needed metal plates in his skull and shin.

Another member of the Curtiss troupe, Lincoln Beachey, is one of the heroes of this book. Famed as the 'The Man Who Owns the Sky', he was aviation's biggest money-spinner – a rock star of the air who couldn't get enough adulation from the crowds that gathered wherever he performed. He was the first to fly upside-down and the first American to do a loop-the-loop. His 'Dip of Death' involved diving full tilt at the ground before pulling up at the last moment. In a single year, between 1913 and 1914, around seventeen million people watched his jaw-dropping stunts in more than 120 cities. But, in March 1915, fate caught up with him when a new monoplane

he was flying broke up and smashed into the waters of San Francisco Bay.

At the start of the First World War, biplanes driven by piston engines were used to carry out scouting missions over enemy territory. A couple of years later, they'd become manoeuvrable enough for hair-raising air-to-air combat and the age of the flying ace had arrived. This was the time when the Red Baron, Manfred von Richthofen, and other skilled fighter pilots, friend and foe, became household names.

By the end of the First World War, the commercial potential of the aeroplane was blindingly obvious to everyone involved in flight, and the period between the world wars is often referred to as the Golden Age of Aviation. This was the era of the barnstormer, the wing walker, and the great air races in which speed records were smashed year after year. The skill-cum-madness extended to dancing, target shooting, and playing tennis on the wings, hundreds of feet up, while in the background the civil aviation industry began to flex its muscles.

As time went on, planes flew not only further, but faster, and – especially during dogfights – in extraordinary high-speed manoeuvres. Pilots were subjected to more and more g-forces or 'gees'. Even before 1920, aviators knew about the menace of G-LOC – g-induced loss of consciousness – in which the plane's acceleration, in a tight turn for instance, could cause blood to drain from the head and induce a brief but potentially fatal faint. G-LOC came to the fore with the development of fast monoplanes just before and during the Second World War, and following the arrival of the jet. To come to grips with its effects and find a means to counter it, subjects were whirled around in centrifuges and put through all kinds of other stomach-churning tests.

Powerful jets and rocket planes took humans past the speed of sound, then Mach 2 and Mach 3. Test pilots flew to the edge of space in vehicles whose wings were built for extraordinary speed, but not stability. Some of these pilots also ballooned into near airless blackness, tens of miles above the ground, and then leapt out of their cramped metal gondolas, with the very curvature of the Earth in view, plunging through far sub-zero temperatures, until finally they opened their parachutes as they crossed into the denser regions of the atmosphere to break their fall.

Today there are new heroes and heroines of the air: balloonists and pilots of ultralight planes, who circumnavigate the globe in journeys lasting days or weeks; astronauts, who not only fly faster than anyone through the atmosphere, but also hurtle far beyond it to orbit the planet or land on other worlds. And still there are the eccentrics, the one-of-a-kinds, who are willing to strap a rocket-pack to their back and fly with nothing else other than wings attached to their arms, like the birdmen of old.

1

The Oddest Couple in the Air

'Test pilot wanted. Candidates should be timid, shy, physically frail, with no previous flying experience.' Not the most likely job ad you'll ever come across. But the chances of Marie Madeleine-Sophie Armant ever becoming a pioneering aviator must have seemed about as remote. That is until, in 1804, she became the second wife of Jean-Pierre Blanchard, twenty-five years her senior, celebrated early balloonist, and all-round disagreeable character.

A great aerial pioneer and stuntman he may have been, but Jean-Pierre was also egotistical, mercenary, and not averse to stabbing a colleague in the back if it helped further his own career. Having left his parents' rural home as a young teen, tired of the poverty he'd grown up with, he wound up in Paris as a mechanic and part-time inventor. While still a boy, he devised a rat trap that involved a pistol, a hydraulic pump that could lift water 400 feet out of the River Seine, and an early form of bicycle called a velocipede. A few years later, he became obsessed with flight. If birds could manage it, thought Blanchard, why not humans? So he came up with a *vaisseau volant* ('flying vessel') that used foot pedals and hand levers to

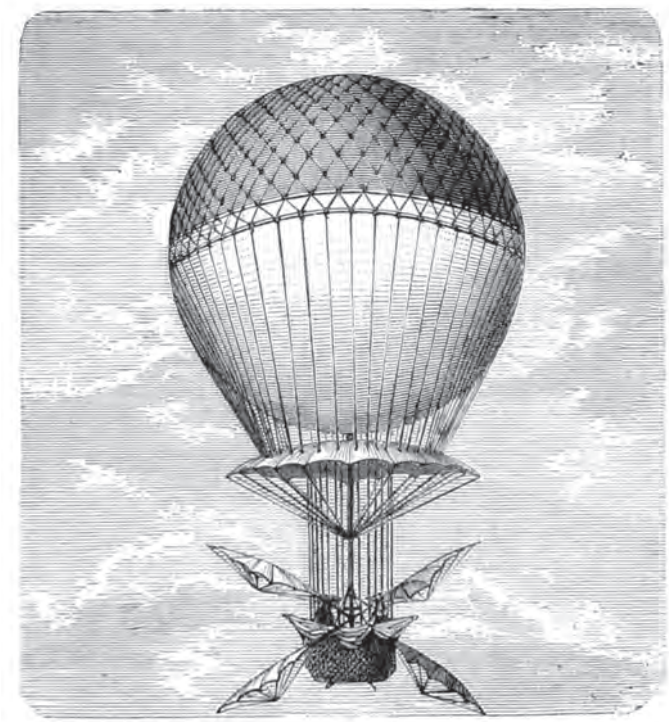
flap four bird-like wings. It had about as much chance of getting off the ground as a hippo with a propeller, but that didn't stop Blanchard from claiming to have flown it when no one was around. His opportunity to become a true and celebrated aeronaut, though, was soon to come.

GAS BAGS AND INFLATED EGOS

On 21 November 1783, Jean-François Pilâtre de Rozier and François Laurent, the Marquis d'Arlandes, made the dramatic first flight in a hot-air balloon, built by the Montgolfier brothers. The era of human aviation had arrived. France was, for a while at least, the ballooning capital of the world, and Jean-Pierre Blanchard saw his big chance for fame and fortune. His own balloon would be lifted skyward not by hot air but by hydrogen – the lightest of gases and the most lethal if it caught fire. To the gondola he attached wings powered by oars, in the futile hope that they would help him steer. On 2 March 1784, the thirty-one-year-old Frenchman, accompanied by a monk name Pesch, climbed into his weird vehicle, moored in the Champ de Mars park in Paris. Brother Pesch was something of a rebel, having just escaped imprisonment at the hands of his order and become a would-be aeronaut in defiance of a command forbidding his travel in this 'invention of the Devil', designed – his closeted companions argued – to undermine belief in miracles.

A big crowd had gathered to watch the launch. But just as final preparations were under way, a young man dressed as an officer in the French Army forced his way to the front. He was Dupont de Chambon, a chum of Napoleon Bonaparte from

his military training days, whose request to go with Blanchard on this much-publicized jaunt had already been spurned. Now he violently demanded to be let aboard and, when Blanchard refused, began hacking at the mooring ropes and steering flaps with his sword. Before police could drag him away he also managed to stab Blanchard in the hand. After things had calmed down, Blanchard, evidently put off the idea of taking passengers, decided to fly solo, much to the dismay of Pesch



1 'Blanchard's Balloon' from *Wonderful Balloon Ascents* (1870) by Fulgence Marion (pseudonym of Camille Flammarion).

who, for his troubles, was banished to his order's most remote monastery.

Once airborne, Blanchard, ever the optimist, tried manfully to 'row' north-east towards the commune of La Villette. But the laws of aerodynamics – of which he had a feeble grasp – and a contrary blowing wind forced him across the Seine to Billancourt, where he landed unceremoniously in the Rue de Sèvres. The Parisian press, having witnessed the bombastic aeronaut's manic attempts to row in exactly the opposite direction to which he was compelled to go, had fun playing with Blanchard's adopted motto – *Sic itur ad astra* ('Thus you shall go to the stars').

But Blanchard was no idiot. France was in the grip of balloon mania. There were pictures of balloons on everything from ceramics to fans and hats. Hair was styled *à la montgolfier* or *au demi-ballon*. Any lady who was anyone wore clothing *au ballon* with outrageously billowed skirts and puffed sleeves. Every inventor and daredevil in the land wanted to take to the air. Blanchard realized that to make a name for himself, and a fortune to boot, he'd have to try his luck abroad, where there was less competition, and so in August 1784 he moved to England.

Thanks to an over-the-top publicity campaign in which he claimed the mantle of 'world's greatest aeronaut', he won the backing of a number of wealthy patrons. One of these was John Jeffries, a Bostonian physician living in England, who agreed to finance Blanchard's attempt at the first aerial crossing of the English Channel – providing that he could come along for the ride. Although the Frenchman was eager for his benefactor's cash, he certainly didn't want to have to share the glory with him. However, Jeffries insisted, even adding a clause into the

contract to the effect that if his extra weight jeopardized the success of the flight, he would consider himself expendable and bail out in mid-air.

TWO MEN IN A BALLOON

With his sponsor's money safely banked, Blanchard did everything he could to avoid Jeffries making the trip. At the launch site of Dover Castle on England's south coast, Blanchard set up a barricaded camp that Jeffries was forced to storm with the help of some hired sailors. The two men appeared to reconcile after this fracas but the wily Frenchman had one last trick up his sleeve – or, rather, around his waist. On 7 January 1785, with the balloon inflated and ready to go, Blanchard declared that it was overweight and couldn't possibly ascend with Jeffries aboard. Suspecting foul play, the good doctor insisted on searching the slightly built hero of the air and found him to be wearing a lead belt. Finally, unencumbered by surplus metal, the balloon took off with its uneasy crew of two, heading south-east under a gentle breeze.

Inevitably, it wasn't long before Blanchard and Jeffries fell out – perhaps almost literally, given the violence of the dispute, which centred on the relative merits of their nations of birth. Both were fiercely patriotic. Hostile words and insults were exchanged and the long and short of it was that both their nation's flags, having been proudly displayed for all the world to see at lift-off, ended up in the sea with their respective owners fuming at the loss.

Eight miles out over the Channel the pair found themselves descending prematurely. Hurriedly, they tossed some ballast

overboard but still the balloon headed down. Another argument broke out over what next to sacrifice. Possibly the terms of the contract were discussed. But as the cold waters came ever closer, the two men, neither of whom could swim, continued to eject only inanimate cargo. With the French coast now in sight but the gondola just a few feet above the sea, the ropes, anchors, seats, and scientific instruments were jettisoned for the sake of elevation. Blanchard even stripped to his underwear and tossed his clothes overboard. At first Jeffries baulked at disrobing, saying he would rather face a watery grave than the French *dishabille*. But as the frigid waters beckoned, Jeffries not only peeled down to his long johns but, having clambered like a rat into the rigging, offered his professional opinion that they should both empty their bladders and perhaps more to relieve the situation.

All the desperate weight shedding worked – but too well. As the balloon neared the shores of France, a warm updraft swept the scantily dressed aeronauts skyward, and without any landing ropes or anchors by which to catch hold of terra firma they climbed high again. For eleven miles they drifted inland until, at last, over a forest near the town of Guînes, Jeffries was able to grab hold of some passing tree branches. As the balloon slowed and drifted over a clearing, some of its hydrogen was released and the adventure came to a tame conclusion. Reclothed by well-wishers on the ground, the intrepid pair were borne by carriage to Calais where they were greeted by cheering crowds. Although one of the items ejected had been the mail bag, Jeffries had managed to stuff a single letter, addressed to Temple Franklin, Benjamin Franklin's grandson, into his underwear. By such means was the first airmail letter delivered.

2 An early demonstration of the Montgolfier brothers' balloon.

BALLOONING – FOR THE RECORD

1783

19 Sep — First balloon to carry passengers – a sheep, a duck, and a hen – demonstrated by the Montgolfier brothers for King Louis XVI.

21 Nov — First recorded manned flight in a hot-air balloon built by the Montgolfier brothers.

1 Dec — First hydrogen-balloon flight by Professor Jacques Charles and the Robert brothers.

1785

7 Jan — First balloon crossing of the English Channel by Jean-Pierre Blanchard and John Jeffries.

1793

9 Jan — First manned balloon flight in North America by Jean-Pierre Blanchard.

1852

24 Sep — Flight of the first steerable balloon, or dirigible, by Henri Giffard.

1931

27 May — Auguste Picard and Paul Kipfer became the first to reach the stratosphere in a balloon.

1933

31 Aug — Alexander Dahl took the first picture of the Earth's curvature in an open hydrogen balloon.

1978

16 Aug — The *Double Eagle II*, and its three-man crew, became the first balloon to cross the Atlantic.

2002

25 May — Altitude record set for an unmanned balloon – 53 kilometres (173,882 feet) – launched by the Japanese space agency, JAXA.

2012

14 Oct — Current altitude record for a manned balloon set at 38,960.5 metres (127,823 feet) by Felix Baumgartner in the Red Bull Stratos balloon.

UPS AND DOWNS

On his return to England, Blanchard, now a celebrity, went into the business of putting on balloon shows and stunts. The parachute had recently been invented, and Blanchard entertained his audiences with displays of animals descending gently from his balloons – gently, that is, for the most part. Sadly, this particular spectacle lost its appeal after a dog and a sheep plunged to their doom. Unfazed, the ingenious but ethically challenged Frenchman sold tickets at a fancy price to watch a violinist play his instrument during a parachute jump. But when the musician leapt out less than ten feet above the ground, and managed only a handful of frantic strokes of his bow while in the air, the crowd grew ugly.

Seeing that the time was ripe to move on, Blanchard headed for Europe where he recorded the first balloon flights in Belgium, Germany, the Netherlands, and Poland. In 1788, he wowed onlookers in Basel, Switzerland, by cutting free the basket under his balloon in order to gain height and then hanging on from the dangling ropes for the rest of the trip. Five years later, in Philadelphia, Blanchard gave North America its first taste of lighter-than-air human flight in front of an audience that included President George Washington and future presidents Adams, Jefferson, Madison, and Monroe.

By this time, Blanchard had already abandoned his first wife, Victoire Lebrun, and their four children in favour of his total immersion with international ballooning exploits, leaving Victoire to die later in poverty. In 1804, he married twenty-six-year-old Sophie Armant, a person so nervous that she startled at loud noises and was afraid to ride in horse-drawn carriages. Heights, by contrast, didn't seem to bother her, and the quiet

calm of floating in the air may even have come as a welcome relief. At any rate, she accompanied her husband on his aerial jaunts right from the start, joining him for the first-ever honeymoon trip in the sky.

Jean-Pierre, for all his ambition and imaginative schemes, was a lousy businessman and he looked on his young spouse as a way of pulling in more fans and much-needed cash. Seeing a woman in a balloon was still a novelty, and though Sophie may not have been the first of her sex to fly she was the first to become a professional balloonist and the first to fly solo. On only her third ascent, on 18 August 1805, she took off alone from a garden next to the cloister of the Jacobin Church in Toulouse – a useful preparation, as it turned out, for what was to come.

In February 1808, during his sixtieth balloon flight, Jean-Pierre suffered a heart attack while airborne over The Hague. He tumbled out of his basket and fell fifty feet, suffering injuries so severe that he never recovered from them. He died just over a year later.

SOPHIE GOES SOLO

To support herself and help pay off the debts left by her profligate partner, Sophie launched into a solo aeronautical career. Hydrogen balloons were her conveyance of choice because, although more dangerous than the hot-air variety, they were easier to handle. She didn't need to tend a fire to stay airborne and, with her slight build and a basket no bigger than a chair, could use the buoyant hydrogen design to rise easily in balloons of even modest size.

3 Sophie Blanchard standing in the decorated basket of her balloon during her flight in Milan, Italy, in 1811, to celebrate Napoleon's 42nd birthday.

Pretty soon, Sophie was the toast of Europe and, everywhere she went, large crowds came out to watch. Napoleon made her 'Aeronaut of Official Festivals', which meant she was in charge of organizing balloon displays at all the major ceremonies in France. In 1810, she flew over the Champs de Mars (near where the Eiffel Tower is today) to honour Napoleon's marriage to Marie-Louise of Austria. To commemorate the birth of their son, she again flew over Paris, dropping announcements of the event. A year later, during official celebrations of the boy's baptism, she ascended above the Château de Saint-Cloud, a magnificent palace overlooking the Seine, west of the French capital, and entertained spectators with what would become her signature trick – setting off fireworks from her balloon hundreds of feet above the ground.

Evening flights were Sophie's speciality. The air was calmer then and, as the sky darkened, her pyrotechnics could be seen to their best advantage. But it was a horrendously risky venture, working with flames so close to a big bag of the most explosive gas on the planet. The fireworks were contained in small baskets and lighted on a fuse before being allowed to drift down by parachute.

Going up in smoke was only one of the dangers that Sophie faced. She didn't go in for quiet evening jaunts within shouting distance of the ground, she flew at heights of more than 10,000 feet, endured sub-zero temperatures, and sometimes blacked out from the altitude and cold. On one occasion she had to stay high in the air for over fourteen hours to avoid a hailstorm that was going on below. On another, she narrowly avoided drowning when she crashed into a marsh.

But, despite the ever-present dangers of her job, she outlived Napoleon's time in office. Not only that but she seamlessly

shifted allegiance and became a favourite of the returning royalty in the person of Louis XVIII. In 1814, she was on hand to celebrate Louis' return to the throne, ascending in style from the Pont Neuf. So impressed was the king by her performance that he gave her the slightly amended title of 'Official Aeronaut of the Restoration'.

Inevitably, Sophie's luck finally ran out. It happened on the evening of 6 July 1819, on her fifty-ninth flight – just one short of her husband's career tally. Everything started out normally, although for some reason Sophie seemed ill at ease. She had been warned plenty of times in the past about setting off fireworks near her balloon. Perhaps it was the stiff breeze that was causing her some concern. At any rate, she was determined to go ahead with the display and, as usual, was dressed to the nines for the occasion: a long white dress and white hat topped with ostrich feathers.

Up she went, waving a white flag at the enthralled onlookers in the Jardin de Tivoli. But from the outset the wind proved to be a problem, driving the balloon sideways into a tree. To gain height more quickly, Sophie threw out ballast, at the cost of some stability. Finally she cleared the obstructions on the ground, rose high into the air, and began her pyrotechnic show by setting off some Bengal Fire – a mixture of substances that burn with an intensely bright flame – to illuminate her balloon. But something went wrong. A spark from the fire reached the hydrogen, catching it alight. The crowd below, not realizing what was happening, thought for a while that the brilliant spectacle was part of the performance and burst into applause. Meanwhile, Sophie was frantically tossing out more ballast to keep herself airborne. It was a losing battle: the balloon rapidly lost buoyancy while, at the same time, the wind carried it

more and more off course. In horror, the crowd watched as the balloon drifted above the buildings of the Rue de Provence, until, in the final moments, the hydrogen completely burned up and the charred envelope dropped onto a high rooftop. Even then Sophie might have survived, but a sudden gust caught the deflated cloth and tipped the aeronaut out of her small basket and to her death in the street below.

The crowd was stunned, and the owners of the Jardin de Tivoli immediately donated the admission fees to the support of Blanchard's children. When they found out that she didn't have any offspring, the money was used to build a memorial to Sophie over her grave, on which was engraved the epitaph *victime de son art et de son intrépidité* ('victim of her art and intrepidity').