# ‘THE AERIAL VIEW’

## CHAPTER ONE

## Inside the Sky
A Meditation on Flight

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By WILLIAM LANGEWIESCHE
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ONE

The View from Above

AFTER A CENTURY OF FLYING, we still live at a moment of emergence like that experienced by creatures first escaping from the sea. For us the emergence has been given meaning because we can think about it, and can perhaps understand the nature of our liberation. Mechanical wings allow us to fly, but it is with our minds that we make the sky ours. The old measures of distance no longer apply, in part because we hop across the globe in single sittings, but also because in doing so we visit a place which even just above our homes is as exotic and revealing as the most foreign destination. This book is a travel book about that place, and it takes the form of a spiral climb. At the end it will arrive overhead of the point where now it begins, with the idea that flight's greatest gift is to let us look around.

At first I mean a simple form of looking around, and one that requires little instruction--just gazing down at the ordinary scenery sliding by below. The best views are views of familiar things, like cities and farms and bottlenecked freeways. So set aside the beauty of sunsets, the majesty of mountains, the imprint of winds on golden prairies. The world beneath our wings has become a human artifact, our most spontaneous and complex creation. Tourists may not like to contemplate the evidence, with its hints of greed and self-destruction, but the fact remains that the old sterilized landscapes--like designated outlooks and pretty parks and sculpted gardens--have become obsolete, and that it is largely the airplane that has made them so. The aerial view is something entirely new. We need to admit that it flattens the world and mutes it in a rush of air and engines, and that it suppresses beauty. But it also strips the facades from our constructions, and by raising us above the constraints of the treeline and the highway it imposes a brutal honesty on our perceptions. It lets us see ourselves in context, as creatures struggling through life on the face of a planet, not separate from nature, but its most expressive agents. It lets us see that our struggles form patterns on the land, that these patterns repeat to an extent which before we had not known, and that there is a sense to them.

Discovering that sense requires not only that we look outside while flying but that we get over the illusion of smallness, the "Everything looks like a toy!" that blinds us at first to what we see. I write "us" but frankly mean "them" or "you." The truth is I can only imagine learning to see from the air, because my father was a pilot with pilot friends, and I grew up inside their airplanes, gazing at the world below. Day after day through the seasons and years we wandered the sky, and I sat looking outside. To make the time pass I picked points on the airplane--a strut, a rivet, a fairing on the leading edge of a wing--and used those points as sighting devices against the ground to measure the airplane's speed and to define flight's independent paths across the landscape: for a while along a country lane, but then straight across a field and through someone's swimming pool, over a factory, into a city and out again. It was quite early in my childhood, as these unusual paths began effortlessly to fit together, that I developed a pilot's integrated sense of the earth's geometry.

This was in the 1960s, the merest moment after the Wright brothers. When I first flew alone, in a sailplane at the age of fourteen, the experience seemed so normal to me that I have practically no memory of it now. It wasn't until college, when I took an air-taxi job and began carrying passengers for hire, people unaccustomed to flight, that I realized there was anything unusual about the view. Of course, some passengers did not want to look outside. But others were curious. For me it was like witnessing Stone Age people seeing photographs for the first time, getting used to the scale, then turning with growing excitement from the magic to the content of the picture.

These passengers had ridden on the airlines but had been herded into their cabin seats, distracted by magazines, and given shoulder-height triple-pane windows at right angles to the direction of flight. They had been encouraged not to look outside but rather the opposite--to draw the shades for the movie and pretend not to fly at all. And now suddenly they found themselves in a cockpit wrapped in glass, awash in brilliant light, in a small airplane lingering near the ground.

Some passengers simply could not understand the view. I remember a pristine young woman who, ten miles off the San Francisco coast, looked down from our airplane at a ship plowing through the Pacific swells, then looked up at me and smiled prettily.

I was charmed. I said, "What do you think?"

She said, "Is this the Napa Valley?"

The airplane was noisy. I said, "The what?"

She repeated it, less certainly. "The Napa Valley?"

I may have laughed. She looked concerned. Only later did I understand. First flights can confuse the senses and cause normal people to stop thinking.

On another occasion I had a passenger who during a smooth flight at 15,000 feet over Baltimore suspected that perhaps he had died and gone not to heaven but to a strange and

suspended place like a purgatory. He meant this quite literally. His face turned numb and chalky white, as if he were about to faint. I asked him what was wrong.

He stammered a confused admission: Had we by chance been in a mid-air collision back there over Wilmington when the controller warned us about that oncoming airplane which we never spotted? The question put me in the unusual position of having to assure someone that both he and I were indeed still alive. These are the things they don't tell you about when you learn to fly.

He was a German art dealer from Berlin and New York, and he did not know Baltimore. The softness of flight had combined with the visible abandonment of the streets below to give him the feeling of death. I explained that it was Super Bowl Sunday and that all Baltimore was watching the game on television. He had been long enough in the United States to understand. The color returned slowly to his skin. I think then that he became interested in the view, which was indeed the view of a sort of afterlife--or of a city still in decline.

The German would have felt better over Berlin or New York not because they are healthier cities but because reading the ground from an airplane is easier if you understand some of the local customs. Residents of Baltimore would see their city from the air more clearly than any transient foreigner, and would find the landscape not dormant or deadly, but compelling. Rather than simply knowing about the Super Bowl, they might share with the city below a genuine interest in the game's outcome--and as result they might not even see a Baltimore in decline. Who could say then whose view was deeper, theirs or mine? But I do know that they would not choose that moment in flight to prefer watching television, because television is dull compared to the view of home from overhead.

I have imagined teaching the aerial view. The best approach would be to apprentice young children as I was apprenticed, to teach them without elaboration simply by flying them to different places, encouraging them to navigate, and to make the translations between maps and the world. Effortlessly they would develop the habit of seeing the world from above, and the more subtle trick while on the ground of understanding the scale and orientation of their surroundings. Flying at its best is a way of thinking. Because of that, once having left the earth's surface, people never again quite return to it. But also because of that, adults often find it hard to make the leap. They simply have spent too many years on the ground. To teach them the aerial view you would have to overcome that landlubbing prejudice which equates driving on a country road, or sleeping in a hotel and visiting the restaurant part of town, with having "been" somewhere, to the exclusion of other possibilities.

I have a friend, a historian at Princeton University, who upon my return from a low-altitude flight up the Eastern seaboard denied that I had actually visited the places I had overflown--the farmed and citied coastal plain from Georgia to New Jersey and in between. I did not invite my friend's judgment, but he offered it anyway, argumentatively, because he could not shake a certain cramped sense of possession that he had acquired while driving the same route the summer before. He was a jealous sort of traveler, like those who return from tours convinced that theirs is the only authentic experience among the natives of some faraway land. Pilots are generally less-educated types, but they are more charitable about geography. In all my time among them, the endless hours sitting in cockpits and waiting around airports, I have never heard

one speak small-mindedly of a landscape. Maybe because the aerial view is unrestrained, it can also be generous.

I offered to introduce my friend to it, not by following his road trip from above but by taking him on a shorter flight over Princeton, his hometown, where his sense of possession was justified. He accepted my offer, and on a crisp and sunlit morning was surprised by the density of the university campus, by the alignment of the streets, by the nearness of the New York skyline, by the extent of the new suburban forest. He was interested in the generational growth of office parks, the division of the farms, and the inflated architecture of new houses on small lots like the coming of California to the East. I thought, specialists may measure the increments of change on the ground and may in fact disdain the "naivete" of the untutored aerial view, but with just one short flight almost anyone can read the outline of the story from up here--in this case, the conclusion of New Jersey's farming life. The aerial view is a democratic view. My friend was interested also in local details like the capricious turns of a certain Hopewell Valley road, and the full extent of a new golf course, and the pattern of old overgrown cow paths converging on a converted barn, and a hidden patch of wilderness by a brook, and the torn shingled roof of another professor's house. Each earned a comment. But he asked me to circle only when we came to his own house, built among others near an expensive day school. He was absorbed, as all people are, by the unexpected proportions and angles and by the strange lay of a familiar neighborhood.

"It's like seeing your face in the mirror for the first time," I suggested.

My friend did not answer. From riding the airlines, he insisted still on the airplane as just a better sort of train, and he was secretly proud of his impatience with the tedium of flight--such impatience being the mark of the modern traveler. In life he had crossed those thresholds of success and self-confidence beyond which he could not easily learn or change his mind. After we landed, he said he remained unconvinced. Of course. And he will not read this book, which is meant as a guide to a still unsettled place in the human experience. But during the flight he did not once turn away from the view of the old settled place, and that was a start.

THE BEST AERIAL VIEWS are low views, but only down to a certain altitude, because there is also such a thing as flying too low to see. This happens at that height above the ground where, depending on the airplane's speed, the scenery rushes by too quickly. From the cockpit of a jet flown at treetop level at, say, 500 miles an hour, the rushing-by is sometimes described in schoolchild terms as a blur. In fact, to the accustomed eye the land remains visually distinct--a complex mix of definable points, of trees and houses and mountaintops. The points slide by in a spectrum of softening speed, from brutally fast directly below, to merely brisk one mile ahead, to not quite stationary up on the distant horizon. There is no blurring to it. You register the points coming in time, and can slow things down by looking a bit farther away.

But if not a blurring, there is indeed a visual frustration to such high-speed treetop flight, and it is a structural one. The details which pass by slowly enough to make sense of are precisely those details which lie too far away to see clearly. For example, you know it's a house that just went by, but for lack of time or clarity you cannot consider its design and setting, or the litter in its back yard--the house as an expression of its inhabitants. The airplane jars through upwelling

surface winds. Its speed dominates your thoughts like an obsession. No matter how you twist and turn, you cannot get beyond it.

Even at a relatively slow 200 miles an hour, speed may rob the low view of its content. The obvious solution is to throttle back and fly still more slowly--and that indeed you can do, though not economically in a jet. I will ignore the levitational magic of helicopters, which can hover in any direction, matching the contours of the land, but which are inefficient, disruptive, and nearly as expensive as a jet to operate. For about the cost of driving a car you can fly an old two-seat, propeller-driven airplane and float low across the countryside at road speeds--slow enough to see the hats on the farmers and to judge the quality of their work.

And even that now seems too fast. Let children dream of their supersonic futures. For today's practitioner, the advance is rather at the other end of the scale, with a foot-launched aircraft in which the pilot hangs on shrouds from a wing made of loose fabric like a sail. How appropriate that the French, who are good sailors, have championed this form of aircraft. Calling it the paraglider, they developed it in the 1980s as an alternative to standard delta-wing hang gliders, which are exhilarating to fly, and reasonably safe, but which suffer from the weight and bulk of their tubular frames even when disassembled. The paraglider by contrast has no frame, weighs about the same as a family's picnic lunch, and can be stuffed into a rucksack and carried easily up a mountain. In essence, it is a rectangular high-performance parachute, a close relative to the tethered "parasails" pulled by powerboats at beach resorts, with the important difference that it has no connection to the ground and flies independently, under the pilot's control.

High on some mountain, you invert the fabric on the ground behind you, strap yourself into a seat-harness, and with a tug on the shrouds allow the wind to send the wing aloft directly overhead, where it assumes a cambered form and floats at the ready. With a short run downhill you give it flying speed. It answers by lifting you off your feet, and beginning to coast downhill toward the valley below. Once it gains speed it flattens its glide angle, and takes you out across the trees, the ravines, and the valley itself. The experience is primordial, a feeling of lift and wind like a throwback to the earliest elemental era of flight, before the Wright brothers, when pioneers like the great Berliner Otto Lilienthal floated downhill on homemade wings.

Lilienthal was a mechanical engineer, the manager of a factory that manufactured small steam engines. He crashed and died in 1898, at age forty-eight, after having made 2,000 hang gliding flights, the longest of which lasted fifteen seconds. It seems quaint now that he flew only on weekends and that he fell to his death at walking speed from only fifty feet up--but he was doing serious work, and he knew it. The epitaph on his tombstone records his famous words, Opfer mussen gebracht werden, or "Sacrifices must be made." If that now seems like the wrong way to approach the weekend, it was the right way in the 1890s, because at any cost the time had come for human flight.

The difference for us today is not that the designs have improved, though they have, but that as a species we have now had a century of experience inside the sky. The modern paraglider does not advance history but offers the human animal a bit of stitched fabric, some lines, and a harness--a cheap personal portable wing. The flying of such aircraft has become an indulgence and does not call for heroics. In turn, this means that our flying is safer.

There is risk to any flight, of course, and pilots do die in paragliders. They die not because paragliding is unregulated--though in the United States it remains delightfully so--but because of the physics of flight. The slowest and simplest flying machines are particularly vulnerable to the winds and dependent upon the pilot's athletic reactions. Those reactions take a while to develop. Wilbur and Orville Wright, who started as bicycle builders in Dayton, Ohio, set about designing, building, and flying the world's first practical airplanes after reading Lilenthal's obituary in the local newspaper. Their most important insight was that lift alone was not enough--that once in flight the pilot would have to be given absolute control of the wing. They were careful, cerebral men, but also supremely Midwestern and pragmatic. During their early experiments with gliding in 1901, Wilbur wrote, "If you are looking for perfect safety you will do well to sit on a fence and watch the birds, but if you really wish to learn you must mount a machine and become acquainted with its tricks by actual trial."

This remains almost as true today. Despite our accumulated knowledge of the air, the best way to go about paragliding is not to sign up for a class but simply to borrow a wing and run downhill with it. Borrow a helmet, too, and choose a calm day and a shallow slope--but indulge in the risk. In each hand you hold a handle connected by shrouds to the trailing edge of the wing. Those handles function as the glider's only controls. To turn, you pull one or the other, twisting the fabric of the wing to spoil the lift in the direction you want to go. Because the paraglider flies slowly, at bicycle speeds, it requires only a shallow bank to turn quickly. At the end of the flight, as you skim the ground, you pull both handles at once, causing the entire wing to rear up and to slow further until against a light wind you put your feet down and land with a few steps--or instead, as I have, you go about gently crashing.

The slowness of the paraglider is the feature that interests me here, not because it makes for soft landings but because it promises in theory to provide ordinary humans with the most detailed yet of the aerial views. Sometimes I think that people should, after all, take classes in paragliding, but that those classes should be taught at every public high school in the country and offered as alternatives not only to gym but to the tedious courses in "civics" and American geography. This is not a serious proposal, of course, because we have taught ourselves if anything to worship safety--to fasten our seatbelts, to act responsibly, and to follow the reasonable paths through life. Opfer mussen nicht gebracht werden. Imagine the price to pay each time a student landed badly and was injured or killed. But imagine also the arrival of an entire generation in which people truly had learned to see themselves from above.

Such dreaming aside, paragliders in recent years have encountered a practical problem masked as an advance. Through steady improvements in their design and construction, the gliding performance of these sky-sails keeps getting better, and is now nearly fifteen to one, which means they can fly fifteen feet forward for every foot they descend. This does not approach the sixty-to-one ratios of enclosed sailplanes, but it is about that of delta-wing hang gliders. Accompanying the flattened glide angle is a lessening of sink rates to about 200 feet per minute. The numbers are important because they are more than matched by the vertical fluctuations of ordinary winds. As a result, paraglider pilots can now soar, which means they can ride updrafts, gain altitude, stay aloft for hours, and even fly trips of a hundred miles and more. My own small regret is that these possibilities encourage a record-setting mentality in which flying becomes a "sport" turned in on itself and pilots come to consider the landscape only for the chances it

creates--the coastal ridge, the sun-heated parking lot, the swirl of dust that marks the start of rising air. To soar you have to stay high and exploit every opportunity. The ground becomes the enemy. You can't afford to see it in detail.

One answer is to abandon soaring and strap an engine to your back, and this indeed is now done. Again the French have led the way. They call the result the powered paraglider and have established enough of a following to support two stores in Paris alone. The wing is slightly shorter. The engine is mounted on a backframe and drives a four-bladed pusher-propeller in a wire cage--an arrangement, including fuel and a small battery for in-flight electrical starts, which weighs about thirty pounds, and which the pilot wears in addition to the standard wing harness. This time along with the control handles, you hold a throttle lever connected by cable to the engine. You take off downhill or on level ground after a short run into the wind with the engine roaring. For the outside observer it is a peculiar sight: this two-legged animal with a parachute overhead and noisy machinery strapped to his back, running awkwardly across a field, then retracting his legs and flying. It is peculiar for the pilot too, until your wings take hold and pull you into the sky. Then suddenly it feels quite natural. The powered paraglider may be the most primitive airplane that has ever existed, but it offers a genuine form of flight. You can climb in it one mile high and hover there for hours.

Better yet you can pack it into an airliner, then unpack it somewhere new and fly it low. I have a Parisian friend named Francois Lagarde, a pioneer of this technique, who has flown his powered paraglider across Tunisia, Niger, Cameroon, Martinique, and Thailand. Even the most timid traditionalists would have to admit that thereby he has "visited" those places. Other than making occasional adjustments to the wing, he has little to do in flight but to look around. Lagarde flies low, sometimes below the treetops, following footprints and trails, chasing rabbits. He maneuvers among giraffes and elephants and smells the dry dung and wet earth, the grasses, trees, and flowers. He waves to villagers and alights like a bird in those villages where people wave back. He flies in the United States and France as well, and he talks of China next. All this may seem like another exercise in European adventurism, but Lagarde is not a faddist. There are good reasons for his obsession. He is extroverted and social and unafraid, and he wants to experience the world in its full vitality. He knows that the view from above is frank and unobstructed. And he has learned that the very low view, when it is also very slow, is often also intimate.

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