

Chapter 1

Boys Who Learned to Fly

If you had been a citizen of Dayton, Ohio, many years ago, you might have had your curiosity aroused by two boys who spent many hours lying flat on their backs beneath the trees on the commons, gazing intently into the blue sky above.

Had you made inquiry, you would have learned that these youngsters were the sons of Bishop Wright, Wilbur and Orville, and that they were studying the birds in their flight, hoping to learn from the sparrow, the crow, or the hawk some secret about flying.

Little did Bishop Wright realize one autumn day in 1878 when he returned home from downtown with a toy for the boys, that this little trinket would mold the destiny of his two sons, then aged eleven and seven years. But sometimes the most insignificant things have their influence. As the father entered the home that cool autumn day he produced a package and proceeded to unwrap it. In doing so, he released a queer contraption, which leaped from his hands and flew around the room much to the surprise of the boys.

It was somewhat similar to the toy airplane of today; it had wings and was propelled by rubber bands. Wilbur and Orville were delighted beyond words, and they kept the toy flying until there was no more fly in it. Though the toy was gone, the idea of it was stored away in the back of their heads, and they determined to make another one like it. From bits of cork, paper, wood, and rubber bands they did make another, and it really flew.

Both boys were mechanically inclined, and their experiments were many and varied. One enterprise they entered into was a small print shop. Later we find them operating a bicycle shop in Dayton, where they built bicycles as well as repaired them. Their product was known for excellence of

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material, utility, and durability. The Wright Cycle Company was a busy place.

Wilbur was an omnivorous reader, and after a long day at the shop spent his evenings studying books and magazines. The home library contained some two thousand volumes, and the children were encouraged to read only the best books. The Bible was often read. Many happy evenings the bishop, Katharine, and the two boys spent around the home fireside. Katharine was a schoolteacher, and always took a deep interest in her two brothers; the death of their mother had left her to take the place of both mother and sister to them. There was never any tobacco smoke, for none of the Wrights used tobacco in any form.

One evening in 1886 Wilbur read in the home newspaper of the accidental death of a German by the name of Lilienthal. This man had been experimenting with huge man-carrying kites, and had actually ridden on them. In an experimental flight his kite had darted suddenly to earth, carrying him to his death. The discussion of this incident ended in a resolve on the part of both boys that they would learn all they could about flying and what keeps things in the air.

That is why the boys were seen flat on their backs out on the commons, peering up into the blue sky. They often dropped their work in the shop, and hurried to a near-by window if they heard a bird on the wing, eager to study the bird in flight. It is not strange that those who were watching the boys thought them a little queer. But by reading, studying the birds, and experimenting with scraps of paper, Wilbur and Orville Wright learned some of the rudiments of flying.

An interest in human flight had meanwhile sprung up in different parts of the world, and several men had been carrying on experiments. The two brothers studied with meticulous detail the reports of what had been accomplished by Lilienthal, Chanute, Durant, and others. The unsympathetic public wondered why they did not apply themselves to their bicycle business, and even went so far as to call them "the crazy Wright brothers." But this did not bother the young

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enthusiasts. They had courage, backbone, perseverance, and determination, and they didn't bother about public criticism. In their reading they had probably learned that most of the world's benefactors had not had much encouragement.

Wilbur was alone in the bicycle shop one evening in 1899, when he picked up an empty cardboard box which had much the shape of a glider that had been built by a man named Chanute. He noticed that the box could readily be twisted so its surfaces would have different angles. "Why couldn't the surfaces of a glider be changed in this same manner?" he thought. Orville happened in, and found Wilbur fumbling with the box, and drawing a plan for warping the wings of the glider they were planning to build. Both were enthusiastic and excited over the possibilities of this twisted cardboard, and their biographer declares that this incident "marks more than any other event the moment when the secret of flight was discovered."

For four years they had read everything they could get on the subject of aviation. This study and their endless experiments satisfied them that they were ready to build a glider in which either would be willing to risk his life. What was needed now was a place where they could have the right kind of air currents, - a wind not too strong and fitful. They wrote to the United States Weather Bureau, inquiring for some location where the wind would be moderate and have a "fairly constant velocity." The reply came back: "Go to Kitty Hawk, North Carolina, just north of Cape Hatteras, Currituck County. On Albemarle Sound there is always a wind. It should be just the place you want."

North Carolina was a long, long way from Dayton, Ohio, and Kitty Hawk was in a barren and lonely, almost inaccessible section. It would cost considerable to go so far to try out their ideas; but they had some money in the bank, and they had gone too far with their study and experiments to think of giving up the idea of flying. They were not the kind to be discouraged by obstacles, real or imaginary. "We studied and worked four years for the chance to get into the air," Orville declared; "think

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anything could hinder us from going to this Kitty Hawk place?" They were sure now that they knew how to make the glider; and if this were the best place to try it out, to Kitty Hawk they must go.

The fall of 1900 was a quiet time in the bicycle shop, so they got their materials, tools, charts, and other information ready, and headed for North Carolina. Wilbur was thirty-three and Orville twenty-nine when they started on this first trip to Kitty Hawk. The desolate, uninhabited, swampy region where they were to work did not lessen their enthusiasm.

In a short time the glider was ready. It was an intricate collection of wires, braces, struts, crossbars, and cloth covering, and resembled somewhat a large box kite. One night the Wright brothers went to their beds wondering-and pondering whether their machine would fly or not. We can easily imagine that they were astir early the next morning. They examined with the greatest of care every brace and stay, making this or that adjustment. There were few spectators in this lonely section, and the world at large knew nothing of their experiments. A few of the citizens of Dayton knew that the Wright boys had gone off on a "crazy experiment," but they were not at all interested.

It has not been found out which took the first ride in the glider, for in referring to the incident they both insist on using the pronoun "we." One of them took his position in the glider, lying flat on his stomach and gripping with both hands the controls, while the other was busy unfastening the ropes that held it to the ground. There was no engine to start, no propeller to whirl, and no cry of "Contact," as when a plane is being tuned up today. One of them inquired, "Ready?" And the other one, who was ready to risk his life in the big kite, answered, "Ready."

There was an instant of breathless suspense, then the plane and its anxious pilot nosed off into the wind, and started up. It didn't work exactly as they had planned it would, but it was brought safely to earth. Boys flying kites have to do some experimenting as a rule before the kite flies right - adding a little

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tail or taking off a tiny bit. This first experiment had satisfied them that they were working on right principles, and on succeeding days they flew the big kite, pulling the different controls by strings attached to the handles and left long enough so they could pull them from the ground.

Finding a more suitable location for experiments, they moved their camp site four miles south, where there was a hill with exactly the right slope. The second day in this new location the wind was right. One brother took his place in the glider. A visitor and the other brother stationed themselves on either side, and, taking hold of the wings, started the machine down the hill and into the wind. It rose in the air, and after a short flight settled gracefully and birdlike to earth. The man who had helped start the big kite off bounded, two steps at a time, down hill to shake hands with the man who had made the successful flight.

“She flies!” cried one. “Did you see how she landed?” excitedly remarked the other. They must try it again. At least a dozen flights were made that day, every one successful. The glider had actually remained in the air for two minutes.

The brief, busy vacation period was soon gone, and the Wright brothers must return to their bicycle shop at Dayton. As their train rumbled homeward, they dreamed of the excursion to Kitty Hawk the next year, and of the changes they would make in their glider.

Bishop Wright and Katharine listened eagerly to a detailed and enthusiastic report of the experiments. But they were the only interested persons in Dayton. The citizens of their home town merely remarked, “The Wright boys are still tinkering with flying machines.”

The following July the brothers were back at Kitty Hawk, with more tools and materials, and began immediately to build a new glider. They had been experimenting for the sport of it; they now began to awaken to the fact that they were inventors of a modern wonder. Their experiments had also taught them that they could not rely on the data and calculations of others; that they must begin at the bottom and secure information for

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themselves. As he thought of the task ahead of them, Wilbur ventured the prophecy that "man will not fly for a thousand years;" but, not being the quitting kind, they began their experiments immediately.

Their bicycle shop took on the appearance of an aeronautical laboratory. In the center of the room they constructed a wind tunnel, where they worked out many facts they had been wanting to know for certain.

When they returned to Kitty Hawk in 1902, a great deal of guesswork had been eliminated, for they had their own facts and figures to depend on. The 1902 glider was built entirely on their own calculations, and made hundreds of flights - one of them over a distance of 622 feet. It was far ahead of any flying apparatus built by man up to that time. They returned home that fall as scientists ranking with the "greatest in the world's history," even though the world did not acclaim them as such. "Nuts," they were called by the few who knew them. "If God had intended man to fly," the critics said, "He would have fitted him with wings. Hopes of flying are only idle dreams."

This last glider had been so successful that Wilbur and Orville began to dream about a motor-driven plane, which would not be so dependent on the right velocity of winds. They began to look for a motor, but could not find one of the right size. "We will make a motor," they declared, and they did; so there was a motor packed in with their equipment on the next trip to Kitty Hawk. As they left home this time, their white-haired father, now seventy-five years of age, slipped the brothers a dollar bill, so they could telegraph him the news. Katharine was sure, too, that they would succeed; and they were so confident that they gave up their bicycle shop.

Arriving at the testing ground in September, they spent some weeks in preparation. Some parts proved defective, and new ones had to be made. It was December when all was in readiness, and they flipped a coin to see who should be the pilot. Wilbur won, and climbed into the plane and started the motor.

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A wire that held the machine was released, and the plane darted forward, and for a moment nosed up into the air. But it was for only a moment, then it settled to the ground 105 feet from the take-off, having been in the air three and one-half seconds. Orville was the pilot for the next flight, on December 17. Only five spectators were present, but one of them snapped a picture of the plane at the moment it left the earth. Twelve seconds the plane remained in the air - not a long time, but man had actually flown! The plane was an awkward contraption, made of struts, braces, wings, and propeller.

On that same day Wilbur started on the second flight, remaining in the air about a second longer, and covering some 75 feet more. Then in twenty minutes followed the third flight, covering 852 feet in 59 seconds. The boys were jubilant, and their first thought was of their promise to send their father the news. Only one newspaper gave a detailed report of their accomplishment; five or six other dailies made mere mention of it.

The next year the boys chose a proving ground eight miles from Dayton, and decided on a public exhibition. The newspapermen were invited to be present. Being dubious about those "west-side bicycle manufacturers," only about fifty citizens were present. Unfortunately the motor did not work, and the machine refused to leave the ground. The crowd returned to Dayton, saying, "Just as we expected!"

Successful flights soon followed, however, and the Wright brothers were ere long flying a mile, and remaining in the air for several minutes. One morning in 1905 a farmer shucking corn near the testing grounds saw a shadow flit across the ground, and the great white bird gliding serenely overhead. "Well, the boys are at it again!" he remarked to his hired man, and went on shucking corn. He worked across the field, and the plane was still in the air. "I thought it would never stop," he said. On September 30 it actually flew twelve miles in one flight, coming down only when the fuel was gone.

People began to take notice of "the crazy Wright boys," and from Dayton and distant points came crowds to Huffman

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Prairie. A market for their machine must be found, for the inventors' bank account was exhausted. Being patriotic, they felt that the United States Government should have first chance at the invention. Imagine their surprise, when, in reply to an offer sent to the Government by mail, they received this blunt answer : "We cannot consider your suggestion that we buy your inventions or that we send a commission to investigate them. We have neither time nor money to waste on a couple of Ohio cranks. We are not interested."

The Wrights must have been disappointed, but they did not let the world know anything about it. They had the courage and determination that knows no discouragement. If the United States Government was not interested, the boys determined to seek a market elsewhere. In 1908 Wilbur went abroad, where he thrilled the French people with his daring exploits. Meanwhile, Orville was setting the whole of the United States to talking of his accomplishments in the air.

The world began to take notice of these modest, unassuming, persevering brothers. Royalty came to see them in action. Reporters sought interviews, and the editors, who a short time before refused even to mention the-experiments, now told of the accomplishments in bold, glaring headlines on the front pages of their papers. Colleges and universities on both sides of the Atlantic conferred honorary degrees upon the inventors. The same people who a few years previous had called them "the crazy Wright brothers" were asking that monuments be built to perpetuate their memory. Banquets and dinners were on the program wherever they went, and skeptical Dayton was at last proud to call them her sons.

As the days went by, the Wright brothers made longer and longer flights, and their planes grew in public favor. They had been helped financially by Charles R. Flint, a wealthy New York businessman; now some of the money they had invested began to return to them. Relief came from their harassing financial struggles.

France paid them \$100,000 for the French right to their patents. Not to be outdone by France, Italy bought Italian

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rights for \$200,000. After a grueling test, the United States Government bought its first plane for \$30,000. Six English sportsmen bargained for six planes at \$25,000 each. Charles R. Rolls, English automobile manufacturer, was the first individual to purchase a plane for his own use, and, in America, Robert J. Collier was the first private buyer.

But when the whole world began to believe in aviation, Wilbur was taken ill with typhoid fever, and died. All mankind mourned his premature death. The partnership was broken, and Orville was left to carry on the work alone.

From boyhood these men had been the subjects of jokes, ridicule, and scorn, but their faith remained unshaken. Financial difficulties at times threatened to stop their work, but they struggled on. The Wright Company at Dayton was at last a prosperous and busy concern. In a very brief time there were more fliers demanding planes than the Wrights had even imagined there ever would be. Aviation was a success - man could fly, and the honor belongs to two clean, courageous, hardworking boys, the Wright brothers.