

John Joseph Montgomery,

The Unheralded Aeronautical Pioneer of Santa Clara County:

His Flights

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INTRODUCTION

The studies and breakthroughs of John Joseph Montgomery, California's greatest pioneer in aviation, have contributed to aeronautical history no less significantly than Lithienthal, Chanute, and the Wright Brothers. Though he is rarely acknowledged for it, Montgomery's first successful flight, on March 17, 1883, of six-hundred feet, took place eight years before Otto Lithienthal, the great German inventor, defied gravity for an outstanding one-thousand feet in 1891; thirteen years before Octave Chanute began his glider studies in 1896; and seventeen years before the Wright Brothers' unsuccessful glider experiments on the Kill Devil Sandhills near Kitty Hawk, North Carolina. Montgomery's most acclaimed legacy is the first manned and controllable, heavier-than-air flying machine, but, because he failed to include the use of the internal combustion engine in his studies, his success has been, until recently, heavily overshadowed. Montgomery patented the use of a parabolic curve principle, or the cambered wing, in his gliders. This was the basis of a law suit against the Wright Brothers and the United States government for violation of the patent, pursued by his family after his death in 1911. He is the inventor of the Ailieron, the standard device for maintaining equilibrium in an aircraft; he is responsible for the placement of the rudder controls at the rear of an aeroplane; and, he was the originator of theories of the relationships between wing surface and wing weight, theories integral to modern

aviation. Though Montgomery's first flight was in Otay Mesa, south of San Diego, much of his time and a great deal of effort was spent in Santa Clara County. This article will cover some of his greatest flights across the skies of Santa Clara, including some of his most tragic.

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Flight of April 29, 1905

John Joseph Montgomery's most publicized success in Santa Clara was his flight of April 29, 1905. It was a celebration to honor one of Montgomery's friends, the president of the Santa Clara College (University of Santa Clara), Reverend Robert Kenna, on President's Day. Only college students, twenty-five newspaper reporters, and a few of Montgomery's immediate family were invited, but thousands of spectators showed up to investigate.¹

Frank Hamilton had come from Santa Cruz with one of his great hot-air balloons to elevate the aircraft. Aeronaut Daniel John Maloney was to pilot a tandem-winged aircraft named "The Santa Clara." It was built of a tough and sturdy spruce frame. Across the wing frame fortified canvas was stretched, totaling a twenty-four foot wingspan. Maloney was to sit in a special saddle and steer the wings by means of stirrups and steel shafts with his hands and feet. The aeroplane, carrying Maloney, was to be dropped from an altitude of four-thousand feet by the huge hot-air balloon.

Space was cleared on the college campus vineyard at the corner of

¹In one picture, more than 1,000 people can be counted.
Spearman, Arthur Dunning, John Joseph Montgomery 1858-1911 Father of Basic Flying. (Santa Clara; University of Santa Clara Press, 1967), p. 60.

Lafayette and Santa Clara Streets for the event. Montgomery directed the sitting of the "deadman" anchor-hold and the winch rope, used to ease the inflated balloon over the plane, while Frank Hamilton supervised the balloon. As Montgomery and the others maneuvered the balloon carefully over the plane, a sudden gust of wind broke the rope and snapped the aircraft upward. Fortunately, no one was hurt, and Maloney was unshaken. When the aircraft had risen to a height of four-thousand feet, Maloney cut away the ropes holding them to the balloon, and as the balloon soared off, he floated breathlessly down through the clouds. He was the first man ever to enact every possible flight maneuver in high air. He landed safely on what is now the southeast corner of Poplar and Alviso Streets.

Flight of May 21, 1905

The next exhibition of Montgomery's work took place at the race track oval on Race Street and The Alameda on May 21st, 1905. The purpose of the demonstration was not only to attest to the authenticity of the Montgomery planes, but also to raise funds for further aeronautical research. Admission of twenty-five cents for adults and ten cents for children was charged. Again, arrangements were made for Frank Hamilton and Dan Maloney to participate in the demonstration. "The Santa Clara" was again to be used, while its identical, "The California," was put on display as a back-up.

While the crowds attention was diverted, several unauthorized persons opened the rear gates of the track and collected entrance fees illegally from more than a thousand people. In the midst of all the

confusion, someone loosened bolts and tampered with wires on the control mechanisms and fuselage of "The California," posing as a mechanic. Furthermore, when Maloney had barely been lifted to an altitude of one hundred and fifty feet, the men at the grip-hold and the winch of the balloon cable both let go. The aircraft was released and landed safely, but Maloney was greeted by only a chorus of boos and dissatisfied spectators.

Ignoring this, Montgomery and Maloney prepared "The Santa Clara's" ill-fated twin, "The California," unmindful of its "mechanical" adjustments. Maloney took his seat and the balloon began rising. Once again, the men holding the balloon cable fumbled, and the plane and balloon jerked upward, carrying Maloney with them.

Fortunately, it was immediately after the release that Maloney noticed the tampered condition of "The California." He realized, then, that there was nothing he could do but stay with the balloon until it came down. It carried him as far as Gilroy, which was thirty miles away, before it landed. Meanwhile, Montgomery and his brother, Richard, loaded up their remaining cargo and fled the abusive crowd.

July 18, 1905

Maloney's Last Flight

Despite his recent failure, Montgomery waited less than a month to put on another performance. Unfortunately, his poor luck continued. The demonstration was to entertain The League of Cross Cadets, a prohibitionist group for young men, of which Dan Maloney was a member. It was held in the vineyards of the Santa Clara College campus, where the league had been encamped for the last three days.

Everything went as planned and, this time, Montgomery himself handled the winch rope. Unfortunately, as the balloon was released, a rush of wind snapped the balloon upward, entangling the cluster of loose cables and ropes in the "control tower"² and the wings of the aircraft. Maloney, failing to notice this little mishap, unhesitantly sawed through the balloon cable to free the plane. He immediately noticed the problem, but it was too late. Despite his frantic effort to gain control of the aircraft, viewers from below

"saw the right wing start to bend upward...the wing continued to bend until it was almost at right angles to the left wing...we could hear the crackling sound of the wooden part of the plane breaking, and Maloney started his fatal plunge."³

The wing had been caught by a number of ropes and broken. The "control tower," which yielded control of the tail and was a brace for the rear wings, had also broken in the tangle of ropes.

Maloney went down in a tannery yard southeast of the college.

²The "control tower" stabilizes the rear wings and controls the tail.

Ibid., p. 86

³Ibid., p. 86

Workers there saw him "(wave) to them in a kind of farewell, just before he hit."⁴ They found him alive but unconscious, his only injury a small scratch on the back of his neck, and they quickly carried him to the college infirmary. He died less than one half-hour later. Six doctors had been called to the scene, but not one of them could explain the cause of his death. One man, Dr. Fred Gerlach, thought that Maloney may have suffocated from the high fall, but modern experience contradicts this hypothesis.⁵

Montgomery was crushed by this incident and the loss of a good friend, but he refused to let it inhibit his work. Instead, he used it as a learning experience and made improvements in the wings and the "control towers" of his future aircrafts. Yet a delay of aerial exhibitions for the next six months set Montgomery back much more than he realized. During this time, detailed accounts of Montgomery's accomplishments were published in France, England, Germany, and across the United States. His theories and designs, explained through written correspondence from Montgomery to Chanute, were all forwarded to the Wright Brothers. Not surprisingly, the Wright Brothers had attained a height of fifteen feet by September of that year.⁶ They and other aspiring aviators proceeded to

⁴Ibid., p.86

⁵Ibid., p.89

⁶Ibid., p.114

"re-evaluate" their theories and designs, what Arthur Spearman called "sincere flattery by imitation."⁷

Montgomery later began further demonstrations using David Wilkie as his pilot, then, eventually, himself.

"The Evergreen"

October 31, 1911

The last Montgomery innovation was his four-wheeled monoplane, "The Evergreen." In the year 1911, after his marriage to Regina M. Cleary of San Francisco, Montgomery resumed his test flights. He and two mechanics, Cornelius Reinhardt and Joseph Vierra, chose the foothills on the outskirts of San Jose's Evergreen Valley to experiment with the monoplane. In just two weeks they achieved a series of forty-five successful flights with the new plane. For take-off, it was propelled down a hilltop runway of wooden rails; when the runway stopped, the plane became airborne. It could effectively rise, glide, circle back up the hill, or be landed in the valley without the aid of an engine.

Reinhardt was especially concerned with the over-extension of some stove bolts holding the main wing supports to the fuselage. The bolts protruded ominously above the pilot's head, but Montgomery was adamant that they be left as they were, in case he might want to make a length change in the future.

It was October 31st, 1911, when Montgomery decided to make an angle

⁷Ibid., p.114

adjustment on the horizontal- stabilizer of the plane. He piloted it that day. As the plane reached the end of the wooden runway, it suddenly shot upward at a precarious angle. Montgomery struggled to stabilize "The Evergreen," but a few seconds later the aircraft faltered. Striking the ground with its right wing-tip, the aircraft flipped. Vierra rushed for a doctor while Reinhardt hurried to Montgomery's aid. Though he was alive and conscious, Reinhardt saw that one of the stove bolts had punctured Montgomery's skull, into his brain, just behind his right ear. It took the doctor two hours to find them, and by then John J. Montgomery was dead, but "For 45 cents worth of stove bolts,...Montgomery could have been alive to continue to work."⁸

⁸Ibid., pp. 129-130

Epilogue

John Joseph Montgomery has yet received only partial recognition for what he has left us. A collection of original letters, diaries, manuscripts, and other legal documents, "The Montgomery Papers," can be found in the archives at the University of Santa Clara. His monoplane glider, "The Evergreen," is being rebuilt by Lockheed Missiles and Space Company to be put on display at the Smithsonian Institute. (It was started in 1967.) In the Evergreen Valley, the hill marking the scene of Montgomery's death has been christened "Montgomery Hill." One-half mile from there stands a plaque in honor of his vast contributions to science. There were also plans to build the Montgomery Hill-Evergreen Park near Yerba Buena Creek. The park would have marked the flight pattern intersections of Moffet Field, San Francisco International, San Jose Municipal, and Reid-Hillview Airports. Funding for this project was cut off by Proposition Thirteen, and thus it never materialized.

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