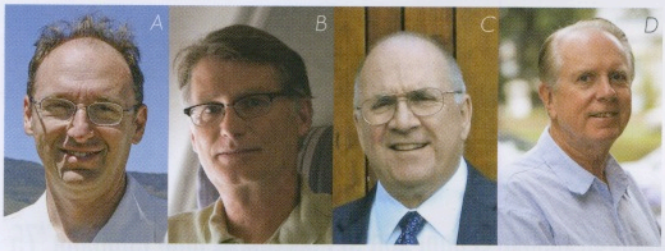
FOUR AUTHORS RALLY TO DEFEND JOHN MONTGOMERY'S PLACE IN HISTORY



A & B: Authors Gary Fogel and Craig Harwood published *Quest for Flight* to set the record straight regarding John Montgomery's place in the pantheon of aviation pioneers.

C & D: Cousins Bernard and John Burdick are also working on their own book, soon to be published. John Burdick, a teacher at Watsonville High School, led his students in the construction of a replica of Montgomery's *Santa Clara* glider in 1987.

Ask any child in school who invented the airplane, and you'll hear a chorus of Wright answers.

According to the authors of two upcoming books, that answer, and the question prompting it, are both deeply flawed.

These authors credit the airplane's invention to the combined efforts of dozens of early aviators and inventors who toiled for decades on several continents.

The better question, they argue, is this: Who made heavier-than-air controlled flight possible? And they have no doubt that John J. Montgomery, a graduate of St. Ignatius College (BA 1879, MS 1880) and a professor at Santa Clara College from 1898 to 1911, flies higher than any other aviator in this regard.

Montgomery is all the more significant, the two books argue, as his efforts helped make the early Silicon Valley the epicenter of aviation development in the Western U.S.

Despite the historical facts, only a minority of history books make mention of Montgomery, the result of a concerted effort by Orville Wright and the many advocates of the Wright Brothers, according to the authors.

In short, the friendly skies haven't been that friendly to Montgomery's legacy.

To set the record straight, Craig Harwood (a descendent of Montgomery's brother, James) and co-author Gary Fogel wrote *Quest for Flight: John J. Montgomery and the Dawn of Aviation in the West,* published in October by the University of Oklahoma Press.

When their book was released, California State Historian and USC University Professor Kevin Starr ('58) praised the book as being both "informed and vividly written. *Quest for Flight* revises the chronology of aviation in America decades prior to 1903 and, in terms of geography, locates its emergence on a far, far shore from Kitty Hawk."

Fogel and Harwood aren't the first to write Montgomery's biography. The late Rev. Arthur Dunning Spearman, S.J., a former SCU archivist, wrote the seminal biography, *John Joseph Montgomery: Father of Basic Aviation,* in 1967.

In addition, two cousins, John Burdick (SCU '65) and Bernard Burdick (SCU '63) are nearly finished with their book, which has the working title *The First American Pilot.*

What makes these two recent books all the more significant is the scholarship and scrupulous research done by all four authors, three of whom are trained scientists. Harwood is a geologist, and Fogel is a skilled model glider pilot who holds a BA and Ph.D. in biology. Bernard Burdick holds BS, MS and Ph.D. degrees in physics. John Burdick, the only person not rooted in hard science (he was a political science major at SCU), is skilled at rooting out answers, as he worked as an intelligence agent in Vietnam. (He is now pitching his book, *A Sphinx: The Memoirs of a Reluctant Spy in Vietnam,* to Hollywood producers.)

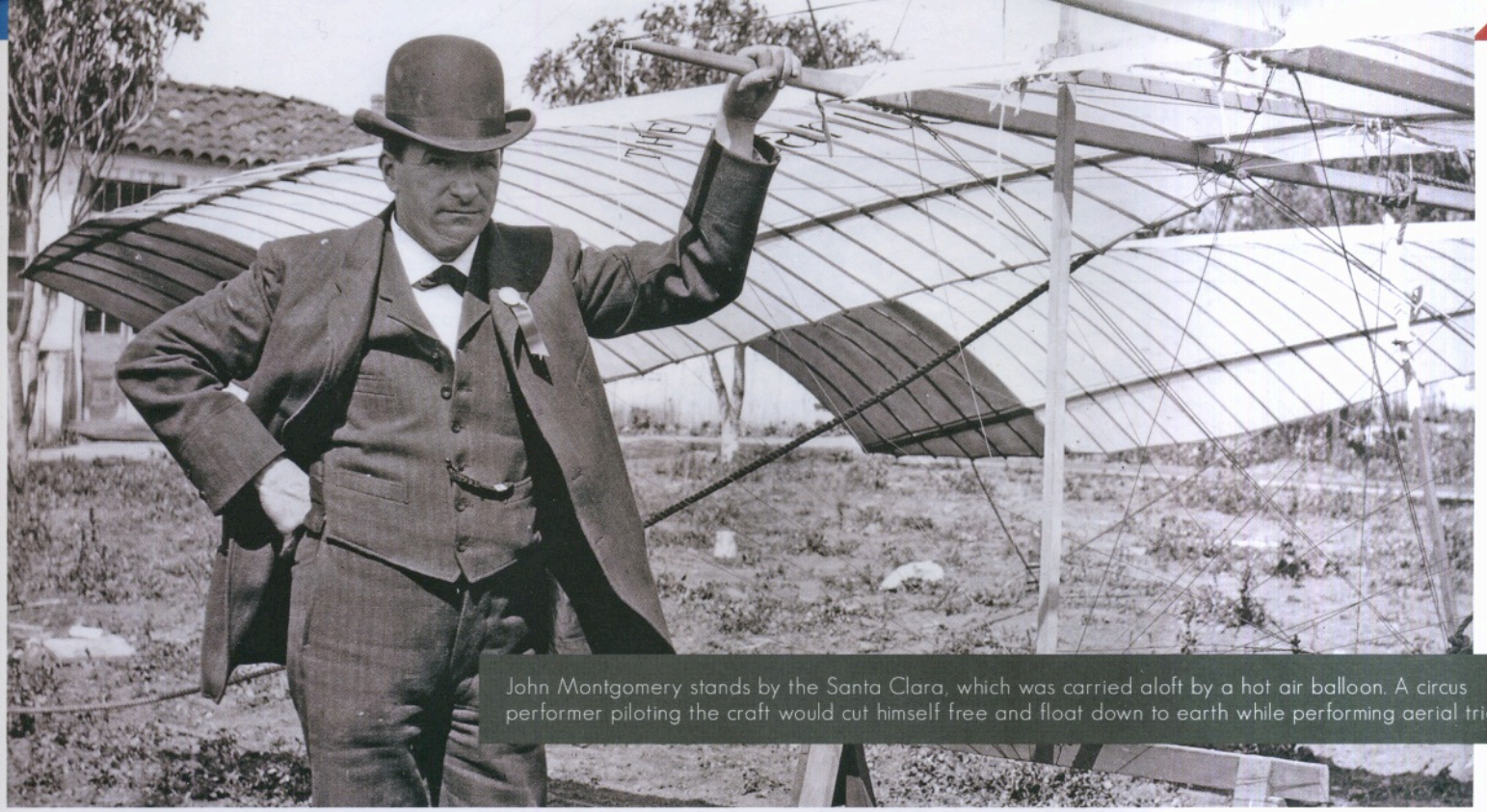
"Montgomery was the only designer of 'aeroplanes' at the time who was well-educated and who had done fundamental research in the nascent field of aeronautics," said Bernard Burdick. "All his [gliders] were based on a sound understanding of the physics of fluids. Montgomery was most concerned with stability and control prior to adding a motor. All the other builders were just guessing. Today, all modern airplanes possess many of the features of Montgomery's early aeroplanes, such as cambered and tapered wings, tandem wings or canards on some, advanced flight controls, ailerons [flaps] on the wings, and control surfaces at the rear."

In July, Harwood was interviewed at the Hiller Aviation Museum and Institute inSan Carlos, which houses several replicas of Montgomery's gliders. While sitting in a lounge of a 747 on display at the museum (only one of the ironies involving Harwood's book; the other is that he is a self-proclaimed nervous flier), Harwood told the story of how Montgomery became fascinated by flight.

"After moving from Yuba City to Oakland with his family, Montgomery's life changed forever when he saw a demonstration flight of an airship, *The Avitor,* in Millbrae on July 4, 1869," said Harwood. "At home, he built a model, complete with undercarriage and wheels, and he tried to lift a hatchet with it, but it lacked sufficient buoyancy."

At 16, Montgomery attended the preparatory division (high school) at Santa Clara College (1874–76) to prepare him for St. Ignatius College, where he studied under Fathers Joseph Bayma, S.J., and Joseph Neri, S.J., two gifted and influential educators.

As a student in San Francisco, Montgomery must have mentioned his desire to build a flying machine, according to Fogel and Harwood. They include an observation in their book, made by Montgomery's contemporary, Rev. Fred Morrison, S.J.: "In those days anyone who even mentioned 'man being able to fly' was considered a little bit off. So, when John was in the vicinity, there was a general tapping of heads, which in our present day would be the sign that the party was crazy."



John Montgomery stands by the Santa Clara, which was carried aloft by a hot air balloon. A circus performer piloting the craft would cut himself free and float down to earth while performing aerial tricks.

After leaving SI, Montgomery worked as a foreman on his family's farm in the Otay Valley near San Diego, where his fascination with flight led him to study the flights of birds as well as insect wings under a solar microscope. "He would encourage his sisters to chase his grandmother's geese across the property," said Harwood.

"John would lie down by a fence and watch the geese take off so that he could study the shape and movement of their wings. John's grandmother, Bridget Evoy, who knew nothing about this, always remarked that her geese could fly farther and faster than her neighbors' geese. John would grin slyly whenever repeating that story."

Those experiences led Montgomery to perform years of comprehensive experiments and mathematically formulate theories of how the curved surface of a bird's wing gave it the lift needed for flight.

Given the nearly universal suspicion at the time that anyone building a flying machine must be crazy, Montgomery pursued his glider construction in secret while working on his family's ranch. He built his own wind tunnel to test the lift of various airfoil shapes, he experimented with "the ratio of wing surface area to lifted weight, and he studied how birds' wings interacted with air currents," according to Fogel and Harwood.

Some controversy still remains as to the date of Montgomery's first glider flight. Both Spearman and the Burdicks hold with evidence that points to 1883, while Fogel's and Harwood's research has led them to an 1884 date. A dam break in 1916 caused the Lower Otay Reservoir to flood the Otay Valley and wash away important documents that could have resolved the dispute.

Both James and John Montgomery often recounted those first flights. The two men went to the Otay Mesa at the edge of the farm, taking along in a hay wagon their disassembled 38-pound wood and fabric glider. Still fearful of ridicule, the two brothers brought rifles so they could pretend to be hunting in case anyone stumbled upon them.

The Montgomery brothers pushed their wagon to the edge of the mesa, assembled their gull-winged glider (later named *The Gull*) and waited for the wind to pick up. When it did, they were ready. James positioned himself a dozen feet below the glider, holding onto a rope attached to its front, and John, at all of 130 pounds, sat inside the glider. When John cried, "Now!" James ran, and John rose 15 feet high and flew for 600 feet. John landed on his feet, holding the 38-pound craft in his arms. All of this happened 20 years before the Wright Brothers flew their plane at Kitty Hawk.

This wasn't the first glider flight in human history. That occurred in 1853 when Sir George Cayley's coachman took to the skies above England. "The coachman was so frightened by the experience and lack of control that he refused to do it anymore," said Harwood. Another early pioneer, Louis Mouillard, flew a glider in 1856 that didn't approach Montgomery's in terms of stability. That same year, the first controlled flight occurred when Jean Marie Le Bris flew more than 600 feet in France in his glider.

Montgomery's flight reached new heights of control and stability. In a speech to the Aeronautical Society of New York, Montgomery noted that after "a little run and a jump … I found myself launched in the air. I proceeded against the wind, gliding downhill for a distance of six hundred feet. In this experience I was able to direct my course at will. A peculiar sensation came over me. The first feeling in placing myself at the mercy of the wind was that of fear. Immediately after came a feeling of security when I realized the solid support given by the wing surface. And the support was of a very peculiar nature. There was a cushiony softness about it, yet it was firm. When I found the machine would follow my movements in the seat for balancing, I felt I was self-buoyant …"

In the 1880s, Montgomery built two more working gliders. In 1893, he spoke at a convention in Chicago organized by the aviation pioneer Octave Chanute. There, for the first time, Montgomery's ideas about flight did not lead to a tapping of heads. He lectured on his first flights and his experiments with wing design and controls, and he met other aviators, including Samuel Langley. Montgomery felt buoyed by their support and by their joint efforts. Years later, Montgomery would write, "I was working purely as a scientist, with no intention of making money, and I proposed publishing my discoveries for all investigators, and giving it to the world as I did, I did not think it necessary to take out patents in those circumstances."

Montgomery put aside his study of controlled flight for a time to work on other inventions (more on those later), to teach at a Jesuit college in Humboldt County and, starting in 1898, at Santa Clara College. He returned to his gliding experiments in 1903 when a former circus performer, Thomas Baldwin, suggested to Montgomery that a hot air balloon could lift a glider, which upon release would perform aerial acrobatics and then land in front of a crowd. Montgomery began again his experiments with small gliders, just months before the Wright Brothers flew 120 feet in 12 seconds at Kitty Hawk. (That first powered airplane of 1903, Harwood argued, lacked the stability and controllability of Montgomery's gliders.)

Montgomery is pictured here seated in *The Evergreen*. He died after a whirlwind led to a crash landing in 1911 in a field in the eastern part of San Jose.

Montgomery also perfected propeller designs to help Baldwin's efforts to build a working airship. He first began with six screw blades, similar to those found on boats, but rejected them for a two-bladed propeller designed with a parabolic curve. He also built two more gliders, each with one set of wings behind the other – the scale model *Pink Maiden* and the full-scale *Santa Clara*, the latter piloted by circus performer Daniel John Maloney. Montgomery took up Baldwin's suggestion and, in 1905, had a hot air balloon lift Maloney in a glider to 4,000 feet before sailing to earth before 1,000 gathered below. (An obelisk near the Ricard Observatory marks the spot of those flights.)

The same year as Maloney's first aerial demonstration, Montgomery filed for a patent, issued the following year, for "Aeroplane," which would become the basis of lawsuits stretching for years after his death.

Among those who praised Maloney's flight and Montgomery's glider were Alexander Graham Bell, who claimed that, "all subsequent attempts in aviation must begin with the Montgomery machine," and Victor Lougheed (half-brother to the founder of Lockheed Aircraft), who called the flight "the greatest single advance" in aviation. The press also praised Montgomery's achievement and used Montgomery's term "aeroplane" to refer to the entire craft — the first time the word was widely used to mean more than a part of the machine.

For the next three months, Montgomery's aeronaut flew the *Santa Clara* in front of large crowds. Tragically, when Maloney repeated the stunt three months later, he failed to see a tangled cable that broke a strut and led to a fatal crash. As he fell, Maloney waved, according to Spearman's book, "in a kind of farewell" to the crowd below just before the impact.

Montgomery continued experimenting with models in wind tunnels, trying to perfect wing design and controls. His final flight came in 1911. Despite his physician's advice to stay on the ground, Montgomery took a new glider, a monoplane called *The Evergreen,* named after the region south of San Jose where he and Joseph Vierra made 55 successful flights. He launched it from a rail to gain enough lift to take off. He hoped, at the end of his experiments, to install an engine to give it powered flight. On October 31, 1911, *The Evergreen* got caught in a whirlwind and crashed, and a stove-bolt in the fuselage frame entered Montgomery's head behind the ear. He died before help could arrive; he now lies buried in Holy Cross Cemetery in Colma.

More than a century of controversy and attempts to discredit Montgomery followed his death. Some attempts to honor Montgomery succeeded (see sidebar) though his widow, Regina, failed in her lawsuits to seek compensation for her late husband's 1905 patent. A 1912 lawsuit was dismissed and two 1917 lawsuits, one against the Wright-Martin Aircraft Corporation and another against the U.S. government (which had pooled patents to expedite plane production during World War I), both proved unsuccessful.

Compounding matters, Orville Wright, in an attempt to secure his legacy, described Montgomery's accomplishments as "mere aeroplane hobbies" and spread misinformation about the glider designs, according to *Quest for Flight*. Advocates for the Wright Brothers published that misinformation in the press whenever attempts were made to honor Montgomery. Even as recently as 2005, author Herbert Lockwood published *The Montgomery Myth: The Flight That Never Was*, citing Orville's writings.

As a boy growing up in Soquel, Harwood often heard stories told by his grandmother and mother, who were "obsessed about how unfairly John had been treated. As a teenager, I perceived the injustice in this, which gave me a desire to see that John was given the credit due to him."

The scope of the task seemed daunting. Then, when documentary filmmakers from the PBS series *California Gold* approached Harwood and Fogel in 2003 to be interviewed for a piece on Montgomery (a piece that has yet to air), the two men met, discovered their shared passion and formed a friendship.

An expert glider enthusiast, Fogel grewup "fascinated with aviation and its history. At an early age, I learned about model gliders and also heard stories of Montgomery'smany accomplishments." He also wrote about Montgomery for a book called *Winds and Wings: The History of Soaring in San Diego,* but he felt the section on Montgomery was lacking.

Fogel later convinced Harwood to undertake *Quest for Flight,* and, knowing that their book would come under attack from those who believed Orville Wright's account, they sought primary sources from court records, the SCU archives, the Library of Congress and newspapers from the 1800s and 1900s recently made available online. Harwood admitted that "attempting to be objective was hard given my bloodline. Thankfully, I have a co-author who let nothing slide and who was good at excluding anything indefensible, including stories I had heard from my mother that had been passed down through the years."

Harwood and Fogel finished their book in 2010 and found a publisher, the University of Oklahoma Press, with a reputation for producing noteworthy histories of California.

Their book, Harwood added, "is also a history of technology and aviation in the American West, one that happened primarily in the Bay Area. Montgomery and his fellow aviation pioneers started their work before most people believed that heavier-than-air flight was possible. Montgomery inspired others and connected all the main players."

Fogel also hopes that their book and the one written by the Burdicks

will help others recognize Montgomery "as the first American to fly and as the passionate scientist and naturalist that he was."

Montgomery, who designed an electric telegraphic typewriter, also played a part in the establishment of California's first state park at Big Basin. "He was a polymath, involved in such diverse fields as electricity, wireless telegraphy, astronomy, recycling and gold recovery," said Bernard Burdick. "His patent on 'rectifying electric currents' was a highly efficient means for recharging storage batteries and was sold to the San Francisco Gas and Electric Company for $500,000. He also provided technical assistance to [SCU professor] Rev. Richard Bell, S.J., in his improvements to Marconi's wireless invention and helped Rev. Jerome Ricard, S.J., in setting up and calibrating his telescopes."

John Burdick first became interested in Montgomery while exploring the Mission Gardens as a student in 1962. There he discovered the obelisk in front of the Ricard Observatory. He sought out Fr. Spearman for more information on Montgomery and discovered that the priest was in the midst of writing his book. "I was stunned that I had never heard of Montgomery," said John. "These meetings left me with a desire to learn more about him and why he was unknown. But life intervened, and I ended up serving in Vietnam."

"John never lost his infatuation with Montgomery, and he eventually sought me out as a co-author," added Bernard. "He knew he would need someone with a science background. I've invested thousands of hours in this project, but for John, this book culminates a 50-year quest."

That fascination with Montgomery also inspired John to lead his students at Watsonville High School in 1987 to build a replica of the *Santa Clara*. "Insurance concerns prevented us from flying it manned, but we did fly it tethered and unmanned in a stiff breeze twice," said John. "That research led to many more questions about Montgomery, but I was forced to stop exploring them after the 1989 Loma Prieta earthquake. I was left with a lot of unanswered questions."

In the intervening years, he found many answers to those questions, which he shared with an audience at SCU in February 2012 as part of the School of Engineering's centennial celebration.

For the past year, he has been building and testing replicas of the *Pink Maiden* model. "I went through five versions before I began to be successful. Every failure brought me closer to the answer. Learning how to fly it also brought me closer to Montgomery and the story we were writing. My first successful flights filled me with a feeling I'm sure Montgomery must have experienced when he was successful."

Nearing the end of their book, Bernard says he is "mystified by the attitude of many who disregard or disparage Montgomery's achievements. One gets the impression that giving Montgomery any credit will somehow diminish the achievements of the revered Wright Brothers."

Montgomery's accomplishments are all the more real and significant for Fogel whenever he takes to the air with his model gliders. "Gliding is the purest form of flying itself. Many people feel that flying has to involve a motor, but glider pilots are always looking to do more with less. This engineering principle provides a challenge and a unique gratification when you are able to stay aloft for hours with no motor simply because of skilled design and piloting."

It's that feeling, one of freedom and exhilaration, the stuff of legend and flights of fancy, for which Fogel, and all of us, can thank Montgomery.

John Montgomery: A Legacy

Despite the efforts to discredit Montgomery, his many supporters managed to secure a variety of honors including the following (all documented in *Quest for Flight*):

1920: San Francisco renames the Marina Flying Field the Montgomery Field.

1924: SCU establishes the Montgomery Laboratories on the site of the present-day Mayer Theatre.

1934: SCU holds a celebration to commemorate the 50th anniversary of Montgomery's first flight.

1943: Disney features Montgomery in an animated movie called *History of Aviation*.

1940s: A number of San Diego organizations undertake efforts to form a memorial committee, establish the Montgomery Trophy for a soaring contest, construct a Montgomery Memorial at Otay Mesa and rename the Gibbs Flying Field to Montgomery Field.

1946: Columbia Pictures releases *Gallant Journey,* a movie about Montgomery, starring Glenn Ford.

1946: The John J. Montgomery Elementary School opens in Chula Vista; SCU constructs the memorial obelisk to commemorate the 1905 Maloney flight.

1960s: A group of aeronautical engineers from Lockheed construct a replica of *The Evergreen;* Santa Clara County establishes a monument on the Evergreen site; the National Society of Aerospace Professionals creates the John J. Montgomery Award; Montgomery inducted into National Aviation Hall of Fame; Spearman book published.

1970s: The first Montgomery Meet, a hang gliding competition, is held outside San Diego; John J. Montgomery Elementary School is completed and dedicated in San Jose's Evergreen district; the U.S. Air Force Auxiliary Civil Air Patrol Squadron 36, based in San Jose, is named the John J. Montgomery Memorial Cadet Squadron; the Experimental Aircraft Association establishes the John J. Montgomery Chapter.

1990s to date: Santa Clara makes the Montgomery home an historical landmark; Montgomery's first glider is recognized as an International Historic Mechanical Engineering Landmark by the ASME; Norman Mineta reads into the Congressional Record an address commemorating the 70th anniversary of Maloney's 1905 flight; Montgomery is inducted into the U.S. Soaring Hall of Fame; Montgomery is honored at the Centennial Celebration of Soaring Flight in 2005 in Aptos; a 30-foot-tall steel sculpture is dedicated in 2008 in the Evergreen district; that same year, the Hiller Aviation Museum in San Carlos celebrated the 125th anniversary of Montgomery's first flight; in 2011, SCU's School of Engineering and ASME establish a $40,000 endowment fund for the John Joseph Montgomery Gold Medal.

Montgomery's legacy remains at SI, too, as many of his descendants attended St. Ignatius High School and College Preparatory. Montgomery married Regina (Gene) Cleary, the sister of Frank Cleary (Class of 1882) and Alfred J. Cleary (Class of 1900). Both men sent their children and grandchildren to SI, including Mark Cleary '64, who served as chairman of SI's Board of Regents and Board of Trustees. Cleary also served as an altar boy at his aunt Regina's funeral and recalled that even as an adult she would love driving around the city with her brother, Al, who served as San Francisco's first chief administrative officer. "She loved riding with the siren blaring," said Cleary. "After her brother's death, she had no sirens to play with. She tended to 'faint' in public just to ride in ambulances and hear the sirens. In the movie version of Montgomery's flight, *Gallant Journey,* the actress who played my aunt fainted, and my father commented how true to form it was."

To learn more about efforts to make a movie about Montgomery, go to tinyurl.com/jjmflight.

You can purchase *Quest for Flight* online or at local booksellers; you can also buy an ebook version for $9.99.