



PROFILE

# Wings

For a century, John J. Montgomery has been given short shrift when it comes to his role as an aviation pioneer. It's time to set things right.

Ask any schoolchild who invented the airplane, and you'll hear a chorus of Wright answers. But that's wrong—not just the answer, but the question. Better to ask “Who made heavier-than-air controlled flight possible?” In that case, **John J. Montgomery**, a professor at Santa Clara from 1898 to 1911 who started work in heavier-than-air flight when most people thought it impossible, flies higher than any other aviation pioneer.

Making that case is *Quest for Flight: John J. Montgomery and the Dawn of Aviation in the West* by Craig Harwood (a descendant of Montgomery's brother, James) and Gary Fogel, just published by the University of Oklahoma Press. The work draws on sources in the SCU archives and the Library of Congress, as well as court records and century-old newspaper archives. It also provides a “history of technology and aviation in the American West, one that happened primarily in the Bay Area,” Harwood says.

Montgomery's interest in flying started when, as a boy of 10, he saw the demonstration of a lighter-than-air craft

in Millbrae in 1869. High school brought him to Santa Clara, where he attended the preparatory division before studying at St. Ignatius College (now University of San Francisco). He returned to the family farm in the Otay Valley near San Diego, where he worked as foreman; there he also studied the shape and movement of birds' wings in flight and used a solar microscope to examine insect wings. He calculated how the curved surface of a bird's wing gave it the lift needed for flight. He built a wind tunnel to test his theories. But he did this work quietly; after all, most folks thought someone trying to build a flying machine must be a little light in the head.

## A little run and a jump

Montgomery's ideas truly took wing one morning in 1884 (or 1883, according to other accounts), when he and brother James loaded their disassembled 38-pound wood and fabric glider into a hay wagon and drove to Otay Mesa, on the edge of the farm. In case anyone came upon them and asked what they were up to, they brought along a pair of rifles. They could say they were hunting.

At the edge of the mesa they assembled the gull-winged glider (later named *The Gull*) and waited for the wind to pick up. When it did, James positioned himself a dozen feet below the glider, holding on to a rope attached to its front, and John, at all of 130 pounds, sat inside the glider. “Now!” John cried. James ran, and John rose 15 feet into the air. He soared 600 feet, steering with the controls he'd designed.

This wasn't the first glider flight ever, but it was a major advance in control and stability. Montgomery built two more working gliders during the next several years and, in 1893, he spoke about his work at a convention in Chicago organized by aviation pioneer Octave Chanute. But Montgomery put aside his study of controlled flight for a time to work on other inventions and to teach at a Jesuit college in Humboldt County and, starting in 1898, at Santa Clara.

He returned to his gliding experiments in 1903 when a former circus performer, Thomas Baldwin,



The Hiller Aviation Museum and Institute in San Carlos houses several replicas of Montgomery's gliders. At [santaclaramagazine.com](http://santaclaramagazine.com) see an extensive slideshow of archival photos and an interview with Craig Harwood.

suggested 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 new experiments with small gliders, just months before the Wright Brothers flew 120 feet in 12 seconds at Kitty Hawk. However, the Wrights' powered airplane lacked the stability and controllability of Montgomery's gliders, Harwood argues.

One of Montgomery's gliders, the *Santa Clara*, first took flight on the Mission Campus in 1905: Piloted by "aeronaut" and parachutist Daniel John Maloney, it was lifted by hot-air balloon to 4,000 feet and then released. Maloney piloted the craft back to earth before a crowd of 1,000. Montgomery filed for a patent, issued in 1906, for "Aeroplane." That filing became the basis of lawsuits stretching for years. But the flights of aeronaut Maloney in the *Santa Clara* came to a tragic end much sooner—just three months after the maiden voyage—when a tangled cable broke a strut that led to a fatal crash.

Montgomery continued experimenting with models in wind tunnels, trying to perfect wing design and controls. Those experiments led to a monoplane glider, *The Evergreen*, which Montgomery began testing with plans to install an engine for powered flight. But on Oct. 31, 1911, with Montgomery himself at the controls, *The Evergreen* was launched from a rail for greater speed, then was caught in a whirlwind and crashed. A stove-bolt in the fuselage impacted Montgomery's head behind the ear. He died before help could arrive.

### Where credit is due

Montgomery's widow, Regina, failed in her lawsuits to seek compensation for her late husband's 1905 patent. For his part, Orville Wright dismissed Montgomery's accomplishments as "mere aeroplane hobbies" and spread misinformation about the glider designs, as *Quest for Flight* tells it.

But some recognized Montgomery's achievements. *Gallant Journey*, starring Glenn Ford, brought Montgomery's story to the silver screen in 1946. Santa Clara erected a monument in his honor that same year: an obelisk in the Mission Gardens, in front of Ricard Observatory. The obelisk, which includes a quotation from Alexander Graham Bell that "all subsequent

attempts in aviation must begin with the Montgomery machine," sparked the curiosity of **John Burdick '65** when he was a student. He sought out SCU archivist **Arthur Dunning Spearman, S.J.**, who was in the midst of writing *John Joseph Montgomery: Father of Basic Flying*, published in 1967. The encounter launched Burdick's own 50-year fascination with Montgomery.

Service in Vietnam took Burdick on a detour (and yielded a self-published memoir, *A Sphinx: The Memoirs of a Reluctant Spy in Vietnam*), but his career brought Montgomery back into the picture: 25 years ago, Burdick led students at Watsonville High School to build a replica of the *Santa Clara*. Earlier this year he gave a talk at SCU as part of the School of Engineering's centennial celebrations. And he's teamed up with cousin **Bernard Burdick '63**, who holds a doctorate in physics, for work on a book-length project they're calling *The First American Pilot*.

"Montgomery was the only designer of 'aeroplanes' at the time who was well educated and did fundamental research in the nascent field of aeronautics," Bernard Burdick assesses. "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."

The Burdicks argue that giving Montgomery due credit won't diminish the achievements of the revered Wright Brothers. But it will give an early aviation pioneer the place he deserves in the sky. **SCU**

## Montgomery the polymath

John J. Montgomery designed an electric

telegraphic typewriter and 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," says 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." At Santa Clara he provided technical assistance to **Richard Bell, S.J.**, in his improvements to Marconi's wireless invention—the radio—and helped "Padre of the Rains" **Jerome Ricard, S.J.**, in setting up and calibrating his telescopes. **PT**

