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### LEADERS & SUCCESS

#### **Orville Wright Soared With Plane's Invention Team Up: His perseverance with brother Wilbur paid off**

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FOR INVESTOR'S BUSINESS DAILY

1,199 words

25 March 2014

Investor's Business Daily

INVDI

A03\_LS

English

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Orville Wright didn't really enjoy running a business.

After his brother Wilbur, who co-invented the airplane with him, died in 1912, Orville became bored with managing Wright Co. **and** wanted to get back to tinkering in his shop.

Not that he wasn't interested in making money. He gradually bought out the other shareholders **and** in 1915 sold the firm to a syndicate, clearing \$1.5 million — worth \$35.4 million today.

It was well earned.

He had risked his life hundreds of times in glider experiments before piloting the first powered **and** controlled flight in history at Kitty Hawk, N.C., on Dec. 17, 1903. The [Wright Brothers National Memorial](#) commemorates the event.

"Wilbur **and** Orville were among the blessed few who combined mechanical ability with intelligence in about equal amounts," wrote Fred Howard in "[Wilbur and Orville.](#)" "One man with this dual gift is exceptional. Two such men whose lives **and** fortunes are closely linked can raise this combination of qualities to a point where their combined talents are akin to genius."

Orville (1871-1948) was born four years after Wilbur in Dayton, Ohio, but Wilbur would die early, leaving him to promote aviation to new heights for another four decades.

One of their two older brothers, Lorin, assisted them.

On The Go

Their father, Milton, was a leader in the United Brethren church **and** editor of a church newspaper. They had to move often with his changing assignments.

Their mother, Susan, liked to invent things **and** inspired her sons to have the self-confidence to confront conventional thinking.

Orville dropped out of high school after his junior year in 1889 to build his own printing press.

He, Wilbur **and** a friend started publishing a newspaper, but a year later it went out of business.

So they switched to print jobs for businesses.

Next they capitalized on the bicycle craze. In 1881, Orville bought a bike with the rider sitting above the large front wheel. That resulted in frequent falls. The modern style, with two same-size wheels, appeared that decade **and** became popular with women because it was safer. The brothers steered toward that model, opening a shop to repair, sell **and** make such bikes.

Business thrived.

Meanwhile, they grew fascinated with newspaper reports of experiments with gliders. But no one could seem to keep the aircraft up very long or control their direction, so pilot deaths were common.

Wilbur began studying glider design in 1899, **and** Orville soon joined him. They had three technical challenges for the airplane:

- The need for wings designed so air would lift it.
- Propulsion so it would go far.
- Steering.

"The Wrights made a critical decision to focus on exercising control, since no one had solved its mysteries," Bernard Carlson, author of the Teaching Co. DVD "[Understanding the Inventions That Changed the World.](#)" told IBD. "They also went against everyone else's goal of essentially keeping the plane level, like a train or car on a surface. Instead, they designed it like a bike, requiring forward motion **and** continuous adjustment to keep it balanced."

Wilbur noticed that birds changed direction by altering the angle of their wings **and** leaning or banking to make turns.

The brothers achieved that effect by installing cords to pull the ends of the wings up or down, known as wing warping — achieved today by flaps at the back of a wing.

They determined the best place for testing a piloted glider was Kitty Hawk because of its 60-mile-long, mile-wide beach **and** constant wind. It was also far away from prying reporters or rivals.

They arrived in September 1900 **and** in six weeks accrued just three minutes of flying time.

Returning in July 1901, they were frustrated by cold **and** rain **and** often crashed after gliding low. Discouraged, Wilbur declared that "controlled flight would not occur for a thousand years."

Back in the Dayton bike shop, they set up a tiny wind tunnel to test 200 miniature wing designs. Soon they narrowed down the designs to 38.

In Gear

Then they tried to find a lightweight, powerful car motor that could fit in a plane, but struck out.

So they built their own.

As for propellers, they carved two 8-footers.

By now, they knew enough about how to control a plane to file for patents, but the U.S. Patent Office considered flying a fantasy **and** rejected the application in March 1903.

That was nine months before Orville's 12-second flight in what became known as Flyer I.

"The key to the Wright brothers' success was controlling every aspect of flight," said **George Haley**, professor of marketing **and** innovation researcher at the University of **New Haven** in Connecticut. "Others had invented ways to fly, but without control the use of flight would not take hold. They patented these advanced controls, which enabled them to demonstrate flying circles **and** figure eights to mesmerized crowds."

After experimenting further near Dayton with motorized planes in 1904, the brothers stopped in order to keep their work secret until after the patents were awarded in 1906.

With rivals stealing their ideas from reports, they refused to do demonstrations for prospective customers without a contract. Newspapers in America **and** abroad ridiculed their claims.

The Wrights had patent disputes for years, but managed to land a document from the French government. Wilbur went over there in 1908 **and** stunned a skeptical public with his plane maneuvering. The result was organization of a French company capitalized at \$140,000 — worth \$3.6 million now — with the Wrights owning most of the stock **and** receiving royalties.

Soon, Orville flew tests for the U.S. Army, which had agreed to pay \$30,000 for a plane that could stay up an hour with a passenger.

He set world records, but on the last flight a propeller broke. The crash killed his passenger **and** put Orville in the hospital for two months. After another set of trials, though, the Army eagerly paid up.

#### In The Money

The plane-building Wright Co. was incorporated in America with big-name investors in 1909. The brothers held a third of the shares **and** received \$100,000 in cash **and** a 10% royalty on each plane sold.

The Wrights spent much of their time training pilots. One was a Canadian, Roy Brown, who during World War I would shoot down Germany's Manfred von Richthofen, aka the Red Baron.

Like his brother, Orville never married. He bought a mansion where he lived with his father **and** sister, Katharine. His mother had died when he **and** Wilbur were teens.

Although the Wrights won the patent war in 1914, rivals continued for decades to try to discredit them as the first to make manned flight practical, which resulted in the Smithsonian Institution refusing to display Flyer I.

Frustrated, Orville lent it to the London Science Museum in 1928.

Orville spent much of his final decades giving speeches about the brothers' experience, helping write Fred Kelly's "The Wright Brothers"

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