

LEGEND & LEGACY

The Story of Boeing and Its People

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1. The Early Years

The founder of the aircraft company which would bear his name was William Edward Boeing, born on 1 October 1881 in Detroit, Michigan. His father was very wealthy from a timber and iron ore project, so Boeing was sent away to a private school in Switzerland and then to Yale to study engineering.

While in his first year at Yale, his father died and Boeing's mother remarried. Unfortunately, William didn't get along with his new stepfather so he decided to move to the other side of the United States to be as far away as possible. Therefore, Boeing set up a lumber business near Seattle in the Pacific Northwest section of the United States.

Boeing set up his new business in 1903, the same year that the Wright brothers made aviation history at Kitty Hawk, North Carolina. However, Boeing didn't see an airplane until the 1910 Los Angeles air show. He took his first ride with a barnstormer in 1915, along with a friend, Conrad Westervelt, a young Navy officer.

Boeing and Westervelt loved flying, but were not impressed with the Curtiss seaplane. In fact, they felt together they could build a better airplane, so they purchased a Martin seaplane and began building their own. Boeing was the financier and test pilot, Westervelt designed the new plane and they hired Herb Munter as a mechanic and pilot.

When Westervelt transferred back east with the Navy, Boeing hired an engineer to keep working on improving the design of their plane. On 15 July 1916, William Boeing incorporated the Pacific Aero Products Company, with himself as President, his cousin as Vice-President and a friend as Secretary.

Fortunately, the new company was formed just as America entered World War I, and the Navy tested his new seaplane. They thought it was adequate and ordered 50 as trainers, awarding Pacific Aero Products a \$575,000 contract. Boeing was in the aviation business for real now.

Boeing hired staff, changed the name of the company to the Boeing Airplane Company and set up a manufacturing operation. Soon he had 100 workers and an office staff of 10 people. Things looked even brighter when he won a second contract to build 50 Curtiss flying boats under contract.

With the end of the war in 1918, however, all airplane contracts were canceled, and Boeing was forced to lay off most of his staff. In fact, the only sales made in 1919 were to Boeing's first international customer - the New Zealand Government. They purchased two seaplanes to form the National Airways Corporation - the forerunner of the airline that would eventually become Air New Zealand. The seaplanes were also used to develop an airmail service around New Zealand. (Today these planes would be extremely valuable as collector items, but they were destroyed in 1924 when used as artillery targets for the New Zealand Army).

Meanwhile, Boeing had to lend his aircraft company \$30,000 to meet the payroll. He also raised additional working capital for the company by issuing new stock, most of which he had to buy himself. To keep the factory workers busy, Boeing began turning out furniture: dressers, dressing tables, night stands and beds. He also started making speedboats.

Just when it looked like the Boeing Aircraft Company would have to close the doors in late 1920, General Billy Mitchell began clamoring for an Air Force, separate from the U.S. Army, to be established. Gen. Mitchell suggested heavy bombers should be the mainstay of the Air Force, and Boeing won a contract to construct 20 bombers using a U.S. Army design. Boeing Airplane Company won this contract because planes at that time were mainly built of spruce, and William Boeing owned a lot of timberland.

The Army bombers turned out to be grossly overweight, slow and clumsy, featuring a cockpit with small windows which made pilot visibility the equivalent of trying to see out of a closed phone

booth. However, the bomber contract was followed by a contract to manufacture 200 fighters, and Boeing was finally able to get out of the furniture business and concentrate on airplanes. 1921 was looking promising.

While assembling the fighters, Boeing's designers decided they could build a better fighter themselves. They set to and developed the PW-9 - a biplane with a steel-welded tube fuselage. Eventually, the Army ended up ordering 30 PW-9s.

Even though these planes still had fabric-covered wings with wood spars and ribs, they gained a reputation for being able to take incredible punishment.

"One thing that all Boeing biplane fighter series had in common," wrote Frank Tallman of movie stunt fame, *"was that they were all built like a certain brick edifice and the pilots took advantage of the planes near-indestructibility in flight and outstanding performance to practice maneuvers unknown to the earlier generation of pilots."*

Boeing's proudest and longest serving tradition would later come to be based on a reputation for building airplanes that could take incredible punishment and still keep flying.

While Boeing's now growing airplane business was based solely on military planes, the company noted an announcement by the U.S. Post Office of its interest in the development of a new airplane for carrying the mail. It was to be this project that would eventually project Boeing into commercial aviation.

On 2 February 1925, the U.S. Congress passed the Contract Air Mail Act which turned the entire job of flying the mail over to private contractors who would tender for the mail routes. Boeing entered a successful bid for the San Francisco to Chicago route. To service this contract, Boeing set up a new subsidiary company, Boeing Air Transport (BAT), which purchased a Model 40A plane from Boeing. The 40A had been developed by Boeing engineers as a copy of a de Havilland DH-4. It featured 425-horsepower air-cooled radial engines and two passenger seats, while the pilots sat in an open cockpit.

BAT commenced operations on 1 July 1927. The flight from Chicago to San Francisco took 23 hours. Before long, BAT had bought 24 Model 40As from Boeing, at \$25,000 per plane. BAT, run as a separate company, grew by leaps and bounds as it took on more air mail contracts and merged with other small airlines.

By 1928, U.S. airlines were starting to grow large rapidly. To keep up with this market, Boeing introduced the Model 80 - a three engined biplane with 12 passenger seats and for the first time a closed cockpit for the pilots. When the Model 80 went for a test flight, engineer Lyle Wood was on board as an observer. He noticed the pilot did a series of repeated S turns before landing.

Wood asked the pilot, *"Why did you do those S-turns? Were you looking for a place to land?"*

"Hell, no," the pilot replied. *"We were out of control."*

The Model 80 was never really a commercial success, and Boeing realized the era of the biplane was drawing to a close. Luckily, however, Boeing was still building fighter planes for the U.S. Army, and BAT had grown so large it was now carrying about 30-percent of the United States' mail and passenger traffic.

In fact, in late 1928, Pratt & Whitney, the engine manufacturers, approached William Boeing with a proposal to merge the Boeing Airplane Company, Boeing Air Transport and Pratt & Whitney into one large, well-funded holding company. That made good commercial sense to William Boeing, and all three companies were merged into the United Aircraft & Transport Corporation by the end of 1928. The holding company formed a subsidiary called United Air Lines, Inc.

The close relationship between United Air Lines and Boeing turned out to be both good and bad. On one hand, when Boeing developed a new 10-passenger plane, the Model 247, United ordered 60 new planes in a \$4 million contract. That tied up Boeing's production capacity for a year, and forced United's competitors, American Airlines and TWA, to go to a small manufacturer in Santa Monica, California. Donald Douglas developed the 14-seater DC-2, which turned out to be a huge commercial success. On the success of the DC-2, Douglas became Boeing's fiercest commercial rival in the years ahead.

However, in 1934, the U.S. Congress passed the Air Mail Act of 1934 which specified that no aircraft or engine manufacturer could be connected in any way to an airline. There was huge controversy about this Act, and for a time the U.S. Army was ordered to fly airmail around the United States while everything was sorted out. This was spectacularly unsuccessful, with eight planes crashing and five pilots being killed in the first month alone.

William Boeing was disgusted by the fact that the airline industry was being used as a political football. He was now 53 years old and independently wealthy, even aside from his share holding in United Aircraft & Transport. He therefore decided to retire, sell his share holding and leave management of Boeing to a new team of managers.

William Boeing's legacy to the company which bore his name was summed up in a quote he wrote in 1929:

"I've tried to make the men around me feel, as I do, that we are embarked as pioneers upon a new science and industry in which our problems are so new and unusual that it behooves no one to dismiss any novel idea with the statement that it "can't be done!" Our job is to keep everlastingly at research and experiment, to adapt our laboratories to production as soon as practicable, to let no new improvement in flying and flying equipment pass us by."

2. Transition

United Aircraft & Transport was split into an airline, United Air Lines Transport, an engine manufacturer, Pratt & Whitney and an airplane manufacturer, Boeing Airplane Company. Claire Egtvedt, the long time chief designer for Boeing, was named as Boeing's President and Chief Executive.

Boeing was again facing a struggle for survival in an extremely cyclical industry, made worse by the Great Depression. The workforce was reduced from 1,700 workers to less than 700, and the layoffs would have cut even deeper except the remaining workers agreed to work a two-weeks-on two-weeks-off system. In effect, the workers halved their pay just to spread the work around.

In 1934, Boeing managed to secure a U.S. Air Force contract to develop a long-range experimental bomber, the XB-15. This was a huge plane for the era, three or four times larger than any bomber previously built. It was also the first plane to feature a flight deck instead of a cockpit, a separate station for a flight engineer and bunks for off-duty crew members to rest while on long flights. The XB-15 weighed 37,709 pounds empty, and could deliver four ton of bombs over a range of more than 5,000 miles. The plane was so large that the wings included small tunnels through which a mechanic could crawl to make emergency repairs on an engine while in flight.

By the time the XB-15 made its first test flight in 1937, Boeing engineers were hard at work designing a more practical plane using the lessons learned from the XB-15. From this came America's most legendary plane of the Second World War, the B-17 bomber or Flying Fortress.

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