

(Kera O'Bryon)

By 1915, the United States was already falling behind the Europeans. President Woodrow Wilson asked that an aeronautics in aircraft design and manufacturing. To stem this tide, organization be developed, modeled after the British Advisory Committee for Aeronautics. With only a \$5,000 initial appropriation and 12 unpaid members, the National Advisory Committee for Aeronautics was born. Its mission was to supervise and direct the scientific study of flight here in the United States. With the first aeronautics lab at Langley Field opening for business in 1917, aviation would soon be entering its golden age. From 1917 through 1958, NACA was responsible for many pioneering flight achievements in history. NACA was involved in virtually every area of flight and would soon be known as the foremost aeronautics lab in the world for its pioneering research.

(Francis Rogallo)

I had heard about it when I was in college because two of my aeronautics professors had worked at Langley, and they said that they thought all aeronautical engineers ought to work at Langley for a couple of years just for that experience. Well, I went there for the couple years and then stayed for 35.

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One of NACA's first major accomplishments came in 1922 with the construction of the variable-density wind tunnel. Before this tunnel was built, researchers could only test aircraft models at sea level, which left huge gaps in the understanding of aircraft performance at high altitudes.

With the new variable-density tunnel, NACA researchers for the first time could compress air and simulate high-altitude flying. This provided accurate data for aircraft manufacturers, greatly improving the quality of aircraft being produced. The variable-density tunnel was just the first of many NACA and NASA wind tunnels to come. NACA wind tunnel research helped define and alter many problems that early aircraft were experiencing in flight. Through the 1920s and '30s, this research helped engineers with breakthroughs in cowling research and in new wing designs.

However, some of the most important work in NACA wind tunnels came at the dawn of World War II. Just a few short years before the U.S. entered World War II, it was found that many of the aircraft that American pilots were flying were slower and less maneuverable than the aircraft that their future enemies were piloting.

In an effort to find a low-cost way to increase American aircraft performance, NACA engineers began an aircraft in a wind tunnel, engineers could look at the evaluating aircraft in drag cleanup experiments. BY placing entire area of the aircraft and determine which area could be made aerodynamically smoother. This evaluation process greatly improved American aircraft performance. During one month alone, July 1944, 36 U.S. Army and Navy planes were evaluated in detailed studies of stability, control, and performance. All in all, NACA engineers tested 137 different airplane types between 1941 and 1945, either in wind tunnels or in flight. A typical performance improvement was seen on the Navy's F4F aircraft. When Langley researchers streamlined the U.S. Navy's Wildcat, it was able to fly a full 45 miles per hour faster. Improvements

like this were seen in virtually every aircraft evaluated, undoubtedly saving many lives.

After the war, a large part of NACA's focus turned to jet-powered aircraft. With the success of Chuck Yeager and the x-1, America had once again taken the lead in aircraft design. In the years to come, NACA researchers would make key aeronautical breakthroughs in quick succession. Many believe that the freedom that was given to engineers to explore possibilities fueled many of these great breakthroughs.

(Richard Whitcomb)

I give plenty of credit to Langley because they provided so much for-- I could never have done what I did without the Langley research center. They provided vast amounts of money and equipment, personnel required to demonstrate these ideas. One of the things I mentioned was the fact that when I first had the idea of the area rule, having the idea was not, to me as an engineer, as important than putting the thing in a wind tunnel and demonstrating that it worked. And without NASA, anything that I ever wrote on the damn thing would be, you know, filed somewhere.

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NACA'S mission changed on October 1, 1958, when it was absorbed into the newly formed National Aeronautics and Space Administration, or NASA. This agency was formed primarily to focus on solving problems related to space flight but would also continue to focus on aeronautical problems as well.