

# Technology in WWI

Pre-teaching for Friday's Field Trip

## Today's Learning Goals

Identify technological developments from WW1

Describe the advent of aerial warfare

Briefly explain the purpose of the New Deal

# Aerial Warfare



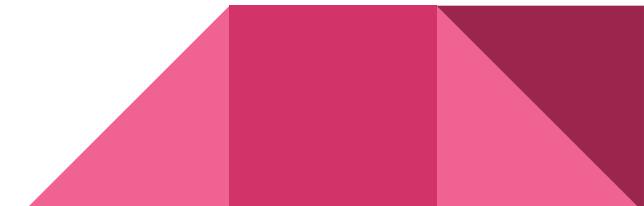
# Origins

Aerial warfare was by no means a First World War invention. Balloons had already been used for observation and propaganda distribution during the Napoleonic wars and the Franco-Prussian conflict of 1870-1871. Planes had been used for bombardment missions during the Italo-Turkish war of 1911-1912. Yet, aerial warfare during the First World War marked a rupture with these past examples. It was the first conflict during which aircraft were involved on a large scale and played a significant role.



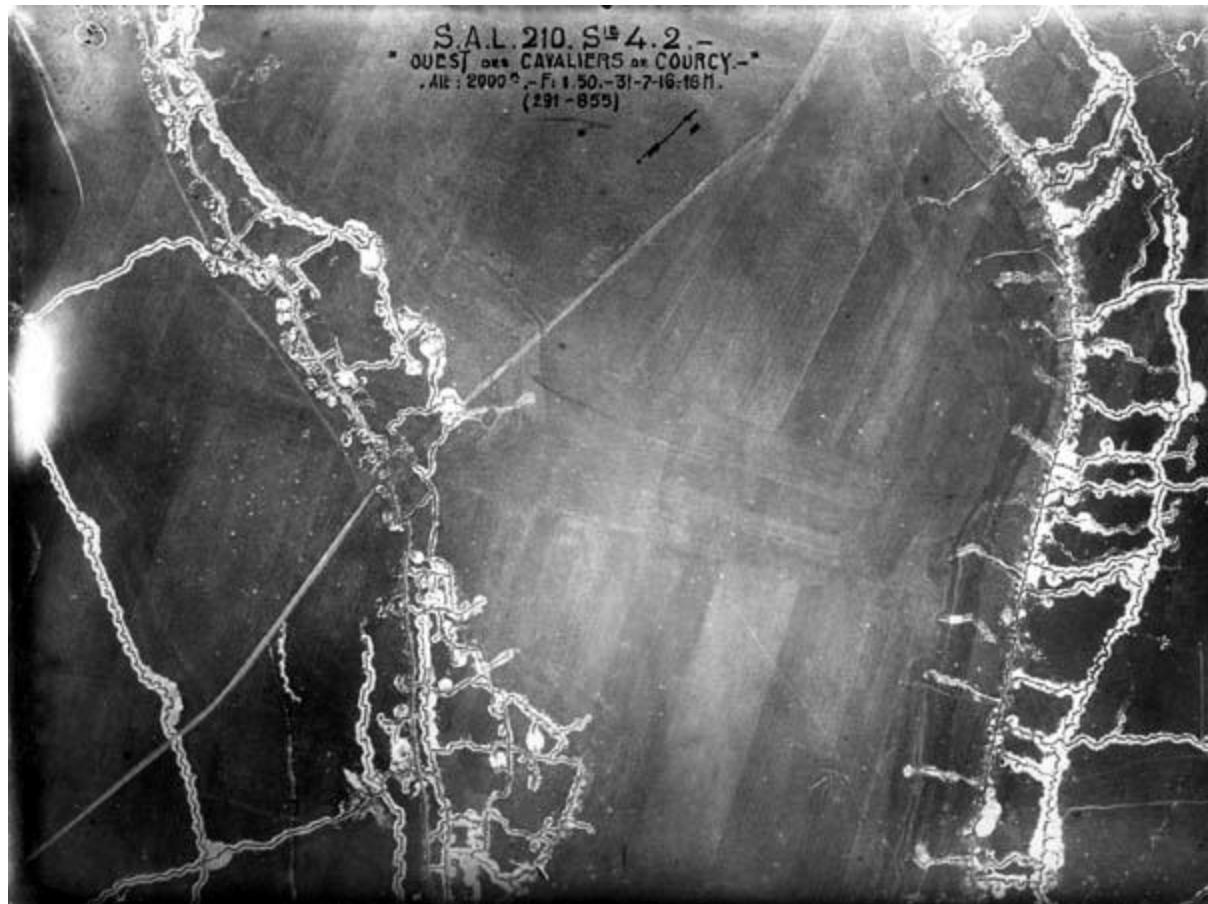
# Skepticism

At the beginning of the war, the usefulness of air machines was met with a certain amount of scepticism by senior officers on all sides. In fact, aeroplanes were mostly involved in observation missions during the first year of the conflict. However, rapid progress enhanced aeroplanes' performance. In 1915, the Dutch aircraft manufacturer Anthony Fokker, who was working for the Germans, perfected a French invention allowing machine-gun fire through the propeller. This discovery had a revolutionary consequence: the creation of fighter aircraft. This type of plane gave an edge to the Germans during 1915.

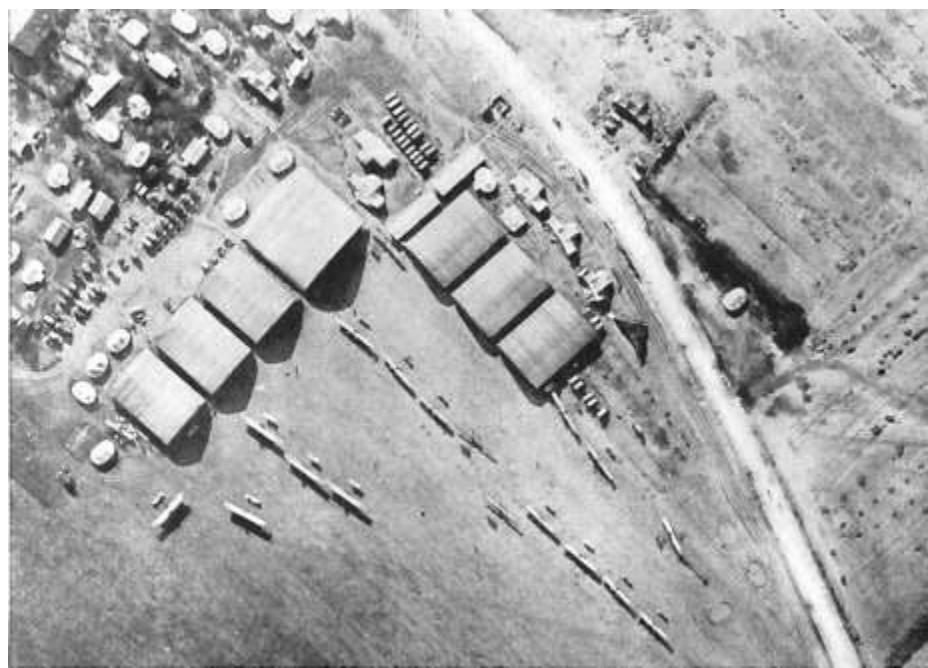








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# Early in the war

As the combatants clashed in the opening days of World War I, the newly invented airplane provided each side with a "bird's eye view" of the battlefield. The value of this new reconnaissance tool was proven at the first major engagement of the war - the Battle of Mons on August 23, 1914. It was at Mons, a small industrial town in southern Belgium, where the advancing British Army collided with the Germans as they marched towards France.

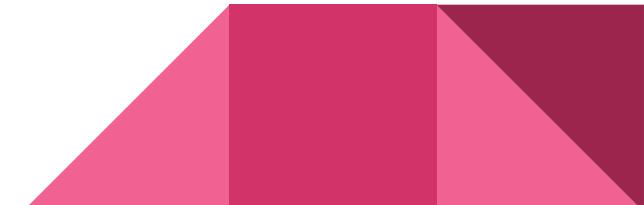
From their vantage point above the battleground, a British observation team could see that the Germans were moving their forces to surround the unsuspecting British army. Alerted, the British high command ordered an immediate retreat into France. As embarrassing as the withdrawal was for the British, the move saved the army. A few days later, French aerial observers noted a shift in the movement of the German army that exposed its flanks to attack. The resulting battle of the Marne (September 5 - 12), halted the German drive into France and saved Paris.

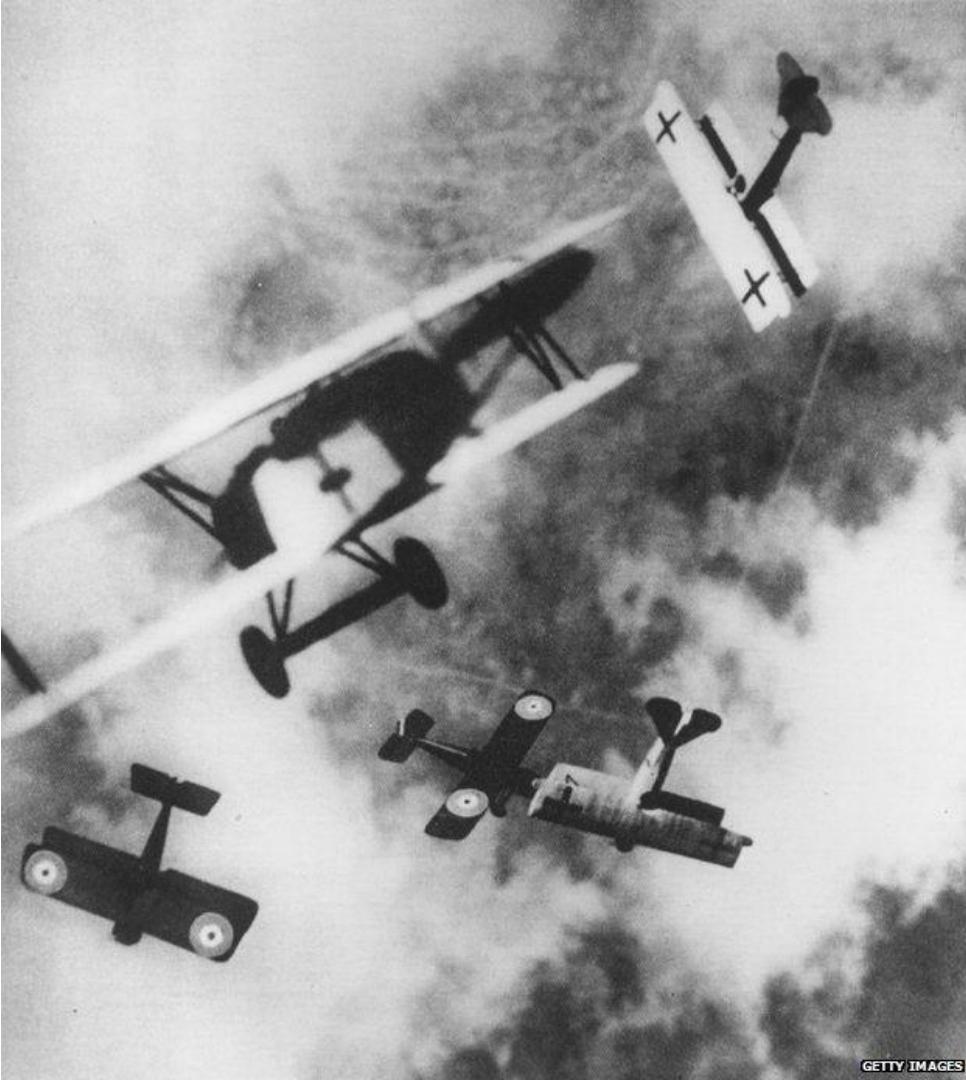




# The battle for the sky begins

The airplane's value as an observation platform had been proven. This revelation led to the next developmental step in air warfare - the effort to blind the enemy by shooting down its eyes in the sky. It would be months before a French pilot would strap a machinegun to the nose of his airplane to create the first true fighter plane (see [The Birth of the Fighter Plane, 1915](#)). In the interim, warfare in the air was characterized by the occupants of enemy observation planes firing at one another with pistols, rifles or throwing an unloaded revolver at an opponent's spinning propeller.



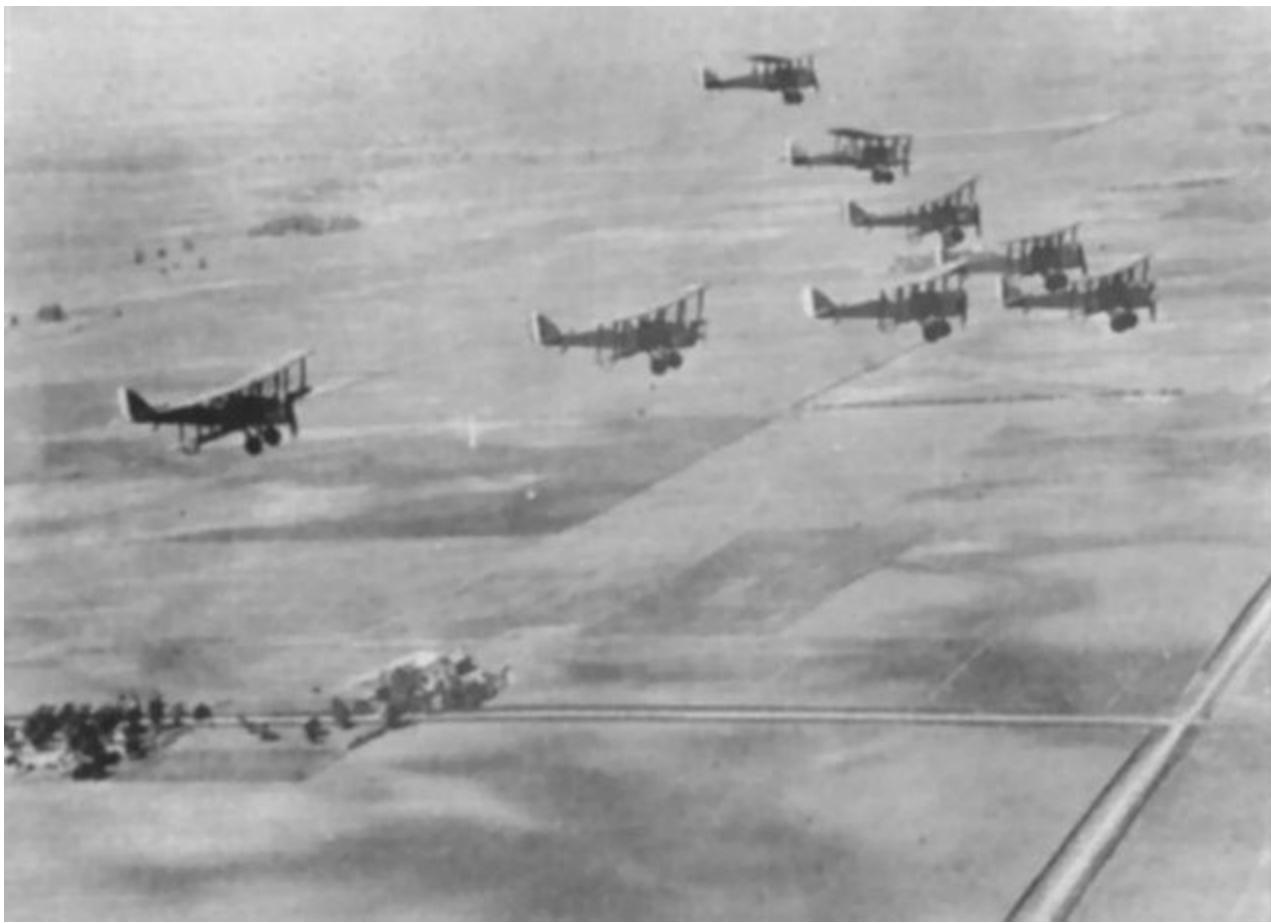


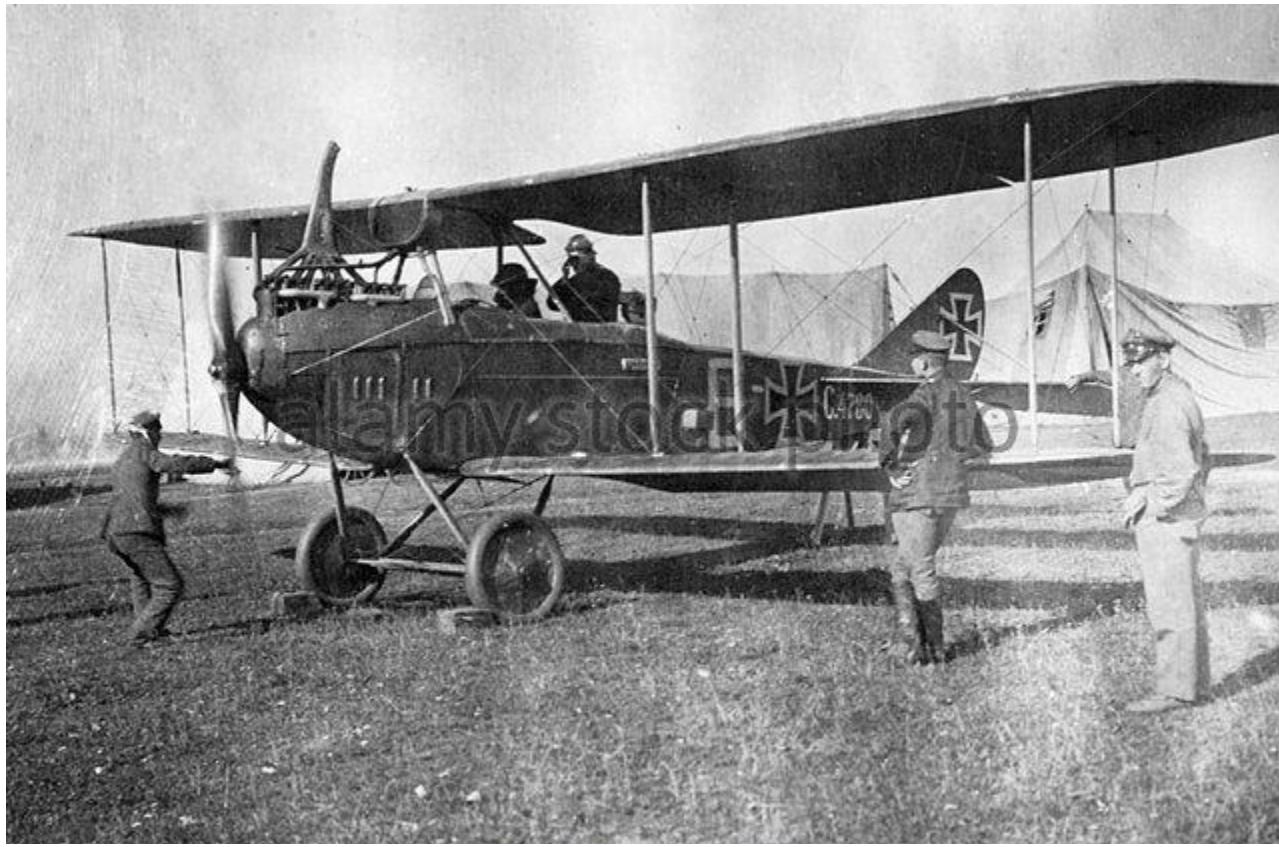




# Other Developments

During 1915, another important step was taken when the Germans organised strategic bombing over Britain and France by Zeppelin airships. In 1917-18 'Gotha' and 'Giant' bombers were also used. This new type of mission, targeting logistic and manufacturing centres, prefigured a strategy commonly adopted later in the century. Inevitably, bombardments of ports and factories were quickly adopted by all sides and led to civilian deaths. Although the number of civilians killed by aerial machines remained small during the war, these air raids nonetheless caused widespread terror. Yet, planes were on occasions a welcome sight. Indeed, aircraft and balloons were used by the Allies from 1915 to 1918 to drop propaganda leaflets over occupied France, Belgium and Italy in order to combat German psychological warfare. [Propaganda](#) was also dropped on German soldiers in an attempt to demoralise them.









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## Was aviation in the First World War invaluable to the war effort?

Most of the nations involved in the war, including countries such as Austria-Hungary, Belgium, Bulgaria, Italy, Russia and the United States, developed their own air forces. It is certain that aerial photography was hugely helpful for artillery, the most devastating weapon of the war. Tactical air support had a big impact on troop morale and proved helpful both to the Allies and the Germans.

Operations were too dependent on the weather to have a considerable effect. Meanwhile, fighting planes had a significant impact in facilitating other aerial activities. Aviation made huge technological leaps forward during the conflict. The war in the air also proved to be a field of experimentation where tactics and doctrines were imagined and tested. Air force units were reorganised on numerous occasions to meet the growing need of this new weapon.

Most importantly, aerial strategies developed during the First World War laid the foundations for a modern form of warfare in the sky.



# The New Deal and the Public Works Administration

# The Great Depression

The Great Depression in the United States began on October 29, 1929, a day known forever after as “Black Tuesday,” when the American stock market—which had been roaring steadily upward for almost a decade—crashed, plunging the country into its most severe economic downturn yet. Speculators lost their shirts; banks failed; the nation’s money supply diminished; and companies went bankrupt and began to fire their workers in droves. Meanwhile, President Herbert Hoover urged patience and self-reliance: He thought the crisis was just “a passing incident in our national lives” that it wasn’t the federal government’s job to try and resolve. By 1932, one of the bleakest years of the Great Depression, at least one-quarter of the American workforce was unemployed.

# President Franklin D. Roosevelt

When President Franklin Roosevelt took office in 1933, he acted swiftly to try and stabilize the economy and provide jobs and relief to those who were suffering. Over the next eight years, the government instituted a series of experimental projects and programs, known collectively as the New Deal, that aimed to restore some measure of dignity and prosperity to many Americans. More than that, Roosevelt's New Deal permanently changed the federal government's relationship to the U.S. populace.



# Public Works Administration

Public Works Administration (PWA), part of the New Deal of 1933, was a large-scale public works construction agency in the United States headed by Secretary of the Interior Harold L. Ickes. It was created by the National Industrial Recovery Act in June 1933 in response to the Great Depression.

# US Army Corps of Engineers

The United States Army Corps of Engineers (USACE),<sup>[5]</sup> also sometimes shortened to CoE<sup>[6]</sup> is a [U.S. federal agency](#) under the [Department of Defense](#) and a major [Army](#) command made up of some 37,000 civilian and military personnel,<sup>[1]</sup> making it one of the world's largest [public](#) engineering, design, and [construction management](#) agencies. Although generally associated with dams, [canals](#) and [flood protection](#) in the United States, USACE is involved in a wide range of [public works](#) throughout the world. The Corps of Engineers provides outdoor recreation opportunities to the public, and provides 24% of U.S. [hydropower](#) capacity.



# Bonneville Dam

Bonneville Lock and Dam is located 145 river miles from the mouth of the Columbia River and about 40 miles east of Portland, Ore., near Cascade Locks, Ore., and North Bonneville, Wash.

The project's first powerhouse, spillway and original navigation lock were completed in 1938 to improve navigation on Columbia River and provide hydropower to the Pacific Northwest. A second powerhouse was completed in 1981, and a larger navigation lock in 1993.

A Public Works Administration project of President Franklin D. Roosevelt's New Deal, portions of Bonneville Lock and Dam Project were declared a National Historic Landmark in 1987.

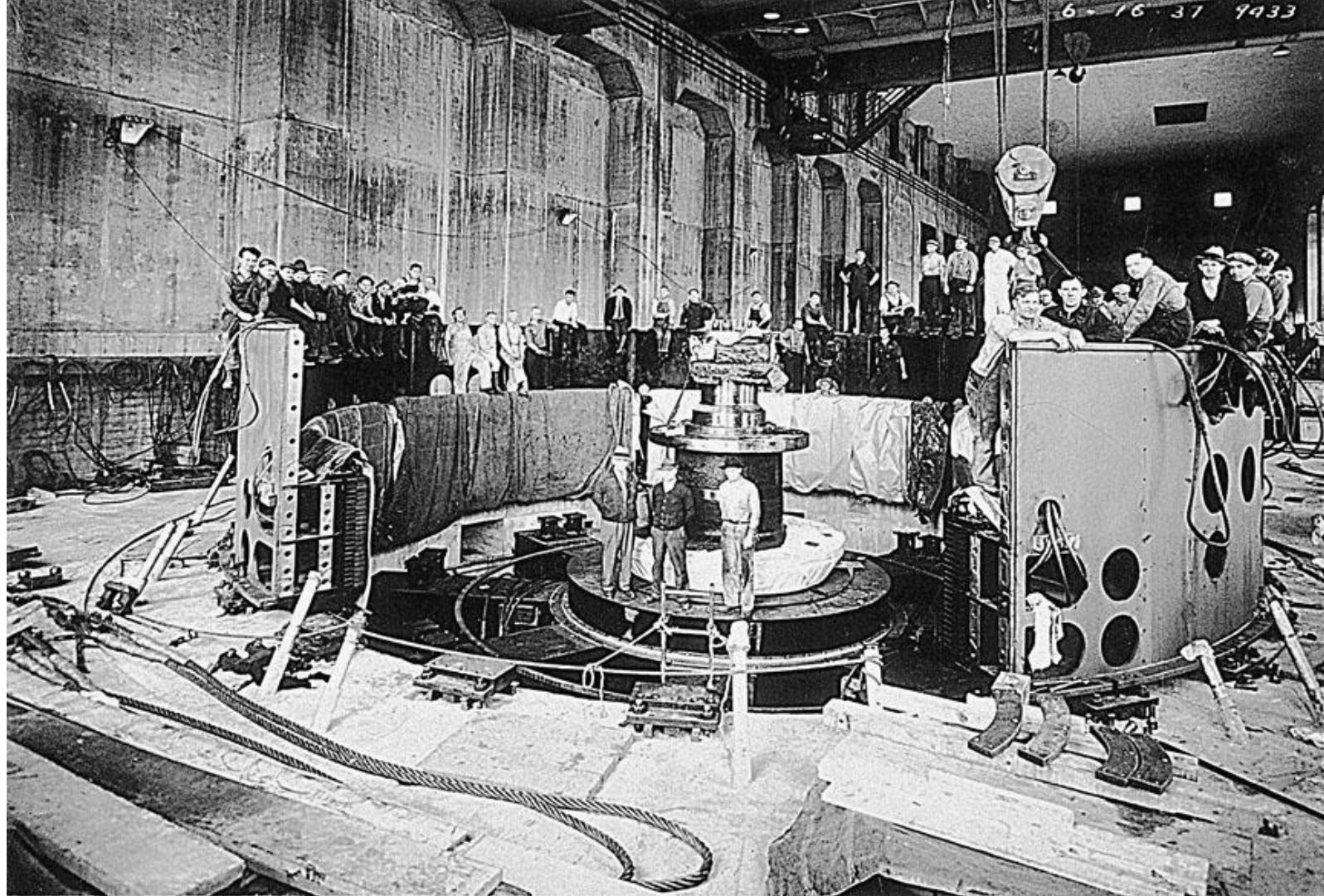
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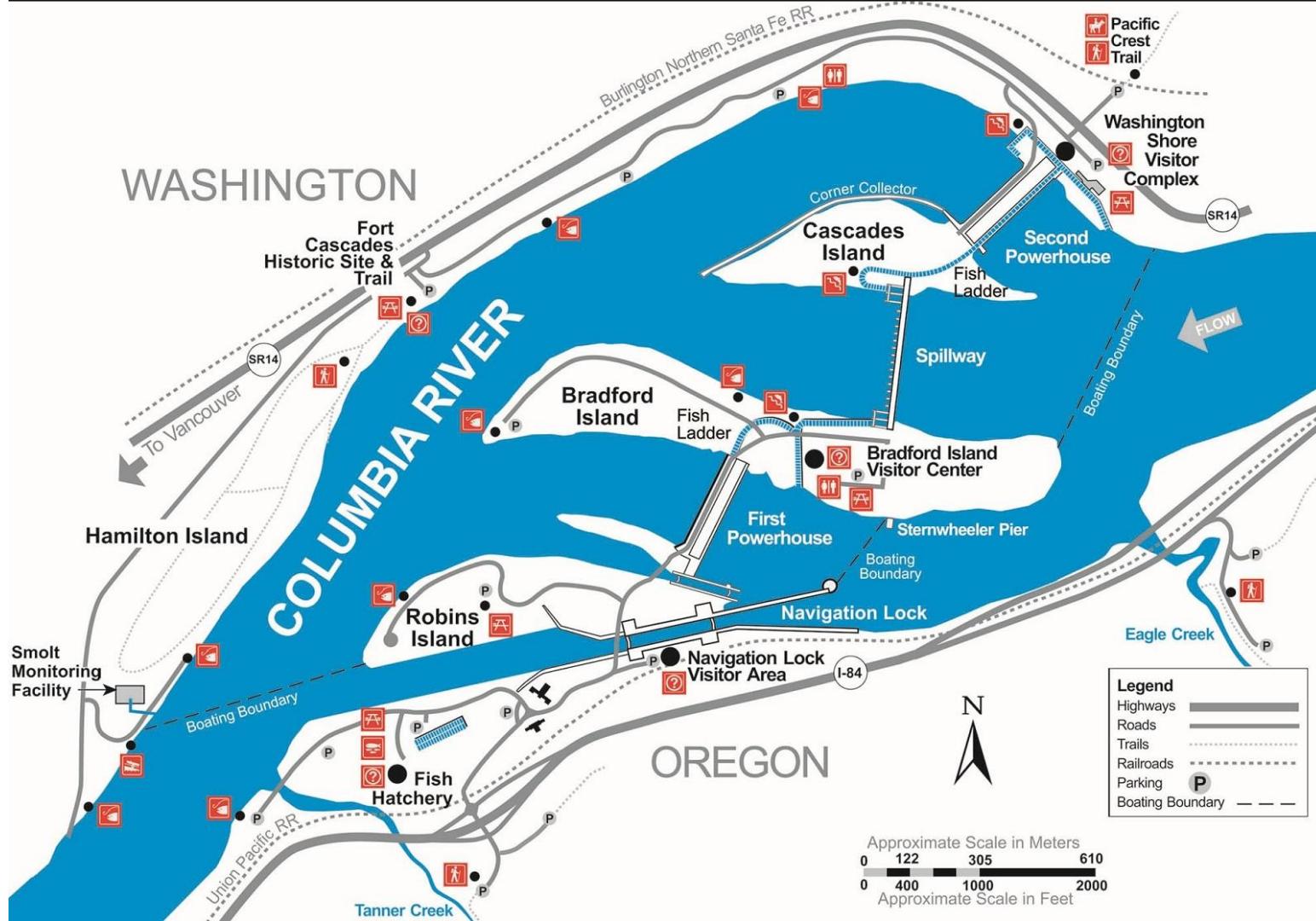
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# See Bonneville Dam Fact Sheet



# Sources

As used in this presentation

Beginning of Air Warfare-

<http://www.eyewitnesstohistory.com/airwar1914.htm>

Aerial Warfare During WWI-

<https://www.bl.uk/world-war-one/articles/aerial-warfare-during-world-war-one>