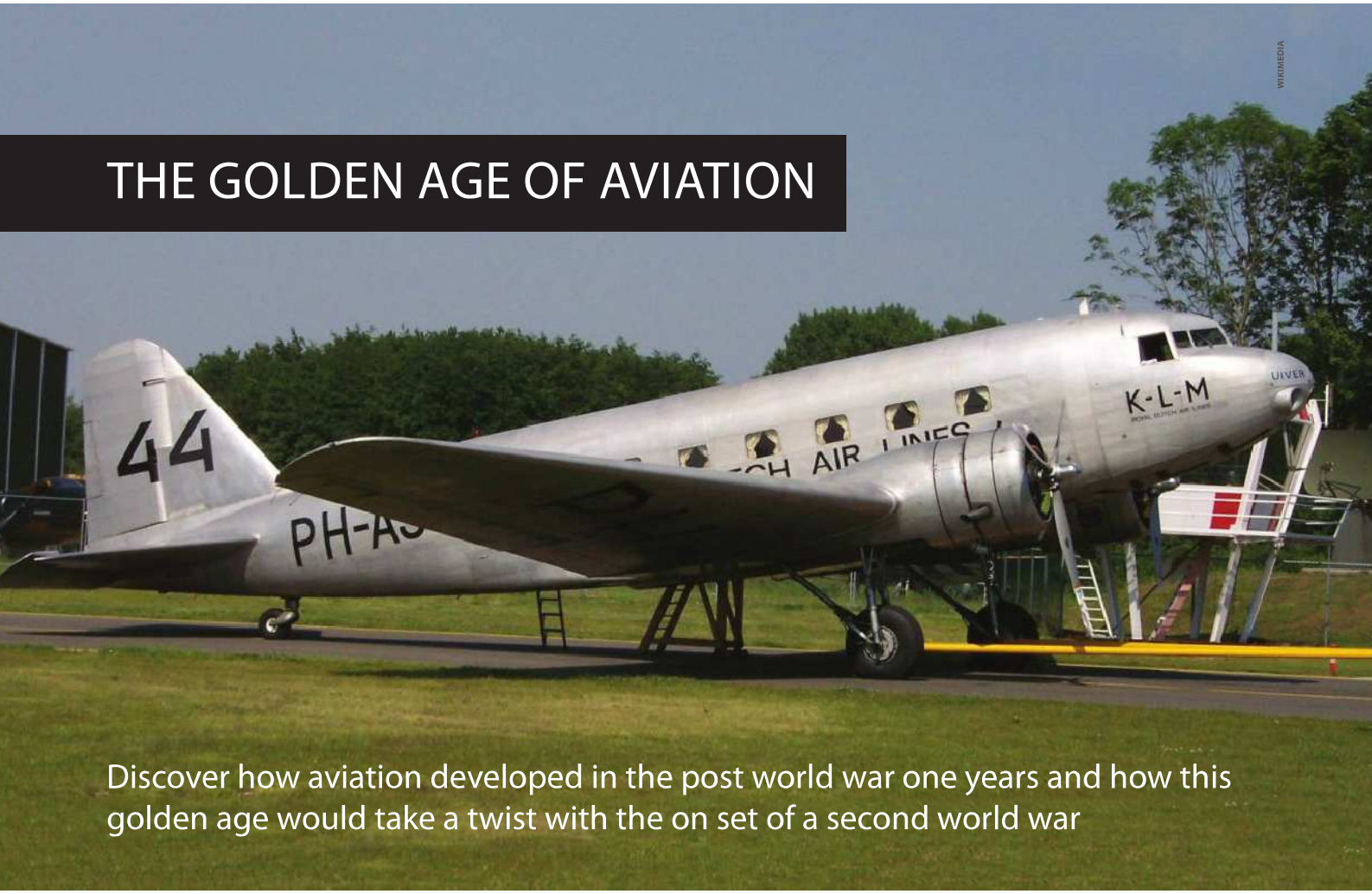
THE GOLDEN AGE OF AVIATION



Discover how aviation developed in the post world war one years and how this golden age would take a twist with the on set of a second world war

The Twenties and Thirties were a great period for aviation development with rapid developments in both civilian and military technology, a period known as the Golden Age of aviation. Brilliant designers and daredevil pilots led the way in the development of aircraft and everything that kept them going. The tail end of this golden age though had a twist in it due to the Second World War, which forced a new way of building and flying aircraft into the world.

TEXT **Erik van Dijk, Student Aerospace Engineering, Editor Leonardo Times**

COMMERCIAL FLIGHT TAKES OFF

Little more than three years after the end of the First World War the first steps to viable air transportation were already being taken. Ohio, 1921; the US Army developed a line of rotating light beacons along a stretch of 130km between Columbus and Dayton allowing pilots to fly the route at night, provide there was reasonable weather. Only a year later the US mail service took over operation of the system and used it to fly mail between the cities. The mail service would extend this beacon system across the North American continent allowing them to fly mail coast to coast in around thirty hours, a quarter of the time it took the train at that time.

With experience and systems allowing improved navigation the first airlines started to appear on the scene. Especially in Europe several internationally operating airlines appeared using converted bombers that were surplus from the First World War. Some of these airlines are still operating to this day, examples being KLM, Lufthansa and Qantas. Airlines based in the US had somewhat of a slow start however since the general public regarded flying as a dangerous sport and not so much as a new means of transportation.

The start of the thirties saw the real break through for flight above the North American continent with the 1930 McNary-Watress act subsidizing passenger air travel, stimulating airmail and providing bonuses to larger, multi-engine aircraft with the latest instruments. The act effectively provided the economic drive behind what was by then technologically possible. Indeed by 1933 both Boeing and Douglas had competing multi-engine, metal stressed skin monoplanes in service, the B(oeing)247 and the D(ouglas) C(ommercial)2. Two years later the DC-3 made its first flight and would turn out to be an exceedingly successful aircraft. By 1939 the 455 DC-3s were carrying 90% of the worlds commercial traffic.

Radio navigation entered the scene in 1932 allowing pilots to follow directional beams to their destinations. Marker beacons also appeared providing pilots with a means to find airfields in poor visibility conditions. The world's first air traffic

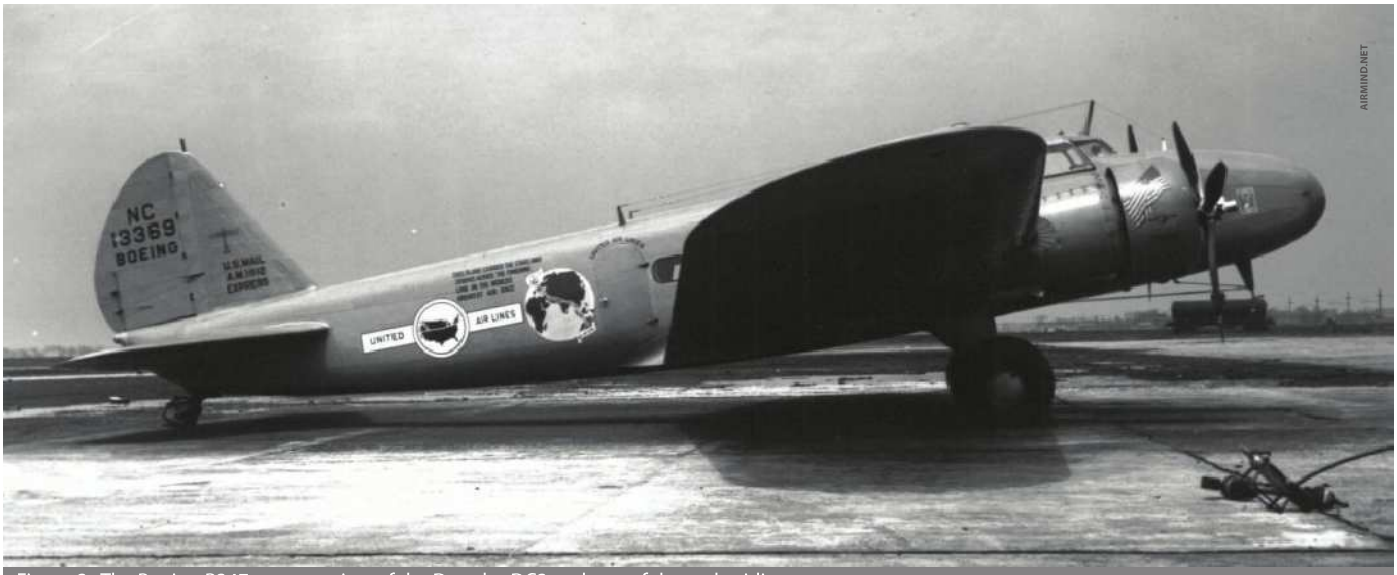


Figure 2. The Boeing B247, a competitor of the Douglas DC2 and one of the early airliners

control tower opened at Newark in New Jersey in 1935. Though the basic elements of aviation as we know it were coming together, the period remained a wild time with few rules and standards. Pilots were seen as heroes and flying for the elite.

As a result of Pan Americans extensive operations over water in the Caribbean region, demand for large seaplanes increased and was met. These flying boats, also called Clippers and built by the Sikorsky, Martin and Boeing companies, later extended their service to transpacific and transatlantic services.

By 1938, just twenty years after the war ended, commercial air traffic had grown from almost nothing to 3.5 million passengers a year. This kind of growth needed to be controlled since it was undermining the stability of the aviation industry. As such that same year the Civil Aeronautics Act was written into law giving the industry an independent regulatory agency, the CAA (Civil Aeronautics Authority), that took care of things like rates, routes, mergers and agreements between airlines. At the same time the increased air traffic started raising safety concerns that led to the establishment of the Air Safety Board.

GREAT PEOPLE OF THE AGE

It was during the Golden Age that the first non-stop flight across the Atlantic Ocean took place. Charles Lindbergh flew the Spirit of Louis, a single seat, single engine monoplane, nearly 5800km from Long Island, New York to Le Bourget, Paris. Beside instant fame he received among others the Distinguished Flying Cross, Legion d'honneur and the Medal of Honor for this incredible feat accomplished in 1927. He would go on to spend much of his distinguished life promoting aviation.

Another person to set firsts and shatter records was Howard Hughes, who managed to fly around the world in less than four days in 1938. For his achievement he received the Collier price for air transportation. Hughes used his business success in both film and aviation to create his own aircraft manufacture, Hughes Aircraft, who are the creators of the famous "Spruce Goose".

Igor Sikorsky also made his name in this period by developing the world's first practical helicopter. The VS-300 took off and landed vertically for the first time in 1939, it used a configuration still common today, a combination of a main and tail rotor. The small aircraft was not only a demonstrator of technology, but it could carry a payload and be used for productive work. Three years later during the Second World War Sikorsky would launch the world's first mass-produced helicopter.

GEARING UP FOR WAR

While the US government promotion of commercial aviation caused the industry to flourish, the military was not sponsored to the same extent. Aircraft were seen primarily as defensive weapons deployed along the coasts and borders and as a result not much emphasis was placed on their development. It took a lot of effort on the part of the Army Air Corps to push through the development of fighters and bombers, resulting in the famous B17 "Flying Fortress" which would later leave its mark in the Second World War.

While bombers saw some lasting development due in part to the advances in large civil aircraft, fighter aircraft were lagging behind in many parts of the world. With the exception of the Germans, the US and European air forces had inadequate and out dated aircraft at the start of the war. As a result the Luftwaffe quickly gained air dominance in Europe while the allies raced to bridge the technological gap.

The start of the war caused most of the development of commercial aviation to slow or stop as engineers and pilots were pulled into military tasks. This did have the effect, however, to speed up military aviation technology as experience gained from building large airliners or manoeuvrable race planes were applied to the war effort.

The technological advances, new strategies and tactics of the war soon put military commanders in a position to unlock the true potential of aircraft, and so they did. Aircraft would see its role shift from simple coast defence to a necessary part of any campaign by fulfilling roles in reconnaissance, support, offensive strikes and of course transportation. Many creative engineers and innovative aircraft would play an important role in this change of mandate… to be continued.

References

www.goldenageofaviation.org

www.wikipedia.org