

The Dreidecker

Specific Purpose: To inform my audience about the development, operational history, strengths and weaknesses of the WWI Fokker Triplane.

Introduction

We regularly see TV images of air strikes in Iraq, Afghanistan and Lebanon. But today I'd like to go back nearly a century and turn our attention to a particular type of aircraft made famous by Germany's Red Baron in World War One. Many people know that the Red Baron was a real person from history. Others may only know him as an adversary of Snoopy from the comic strip Peanuts, or as a ghost-like magic man dreamed up by lonely housewives hungry for a particular brand of frozen pizza. Well, his real name was Manfred von Richthofen. He was the greatest ace of World War One, which was fought between 1914 and 1918. Towards the end of his career he flew a bright red aircraft with three wings, the Fokker Dreidecker.

The Fokker Dreidecker - or Triplane - was one of the most controversial aircraft of the war. It is best known as the aircraft of aces such as the Red Baron, who flew #102/17 of a total production run of 320 airplanes. But it was not as well-liked as many suppose. I have been studying Fokker triplanes since I was a young boy; I've read widely about them, and I've interviewed pilots, historians and aeronautical engineers. Fokkers have always fascinated me for some reason I cannot explain. I am going to tell you about the development of the Fokker Triplane, its operational history, and its strengths and weaknesses.

Body

I. Let's start with its development

- A. Its designer, Anthony Fokker, was a Dutchman who built airplanes for the Germans after being turned down by the Allies
 - 1. In addition to being a designer, Fokker was a gifted pilot and a shrewd businessman.
 - 2. Fokker built the first fighter airplane to have a machine gun

synchronized to fire through the propeller.

- B. His German rival Albatros came up with a single seat fighter powered by the excellent Mercedes D-III six-cylinder inline engine and armed with twin Spandau machine guns.
 - 1. Fokker's planes fell into disfavor. Weakly built and underpowered with the Oberursel rotary/110, they could not compete with the Albatros.
 - 2. The British Sopwith Triplane could outturn and outmaneuver the German Albatros. Suddenly the German high command wanted triplane fighters.
- C. Fokker had already been working on a series of experimental aircraft with wooden cantilever wings, now seen as one of the most important inventions in aeronautical science during the war.
 - 1. Cantilever means without external bracing. In other words, these wings were not held together with a bunch of outside wires like other World War One aircraft.
 - 2. The Fokker triplane was the first airplane to enter service with wooden cantilever wings.

II. Now let's look at how the Fokker was used in battle - its operational history

- A. Not a promising beginning...
 - 1. In September of 1917, Kurt Wolff and Werner Voss were killed in the first two triplanes to reach the front, both fighting against overwhelming odds in separate battles a week apart.
 - 2. At the end of October, the triplanes of Heinrich Gontermann and Günther Pastor both suffer catastrophic wing failures. These incidents grounded the aircraft until the wings were rebuilt.
- B. By the time the aircraft flew again, they were no longer a surprise to the Allies
 - 1. Encounters with Richthofen, Wolff, and Voss in September 1917 gave the Allies ample warning of the triplane's existence. Then triplanes were grounded for November while the wings were rebuilt, and December's weather was bad for flying.
 - 2. Stapenhorst was forced down and captured in January 1918. This gave the Allies an operational Fokker triplane which they examined thoroughly.
- C. Black and white photographs of the period do not do justice to the elaborate paintjobs featured on the Fokkers.
 - 1. From the factory the Fokkers arrived pale blue underneath and with

streaks of olive green on upper surfaces and sides. The streaks came from the manner of painting by hand with 3-inch wide brushes.

2. Once delivered, each unit usually had its own distinctive marking, and each pilot usually customized it further to his own taste.
 - a.) In the days before fighter planes carried radios, pilots needed a way to identify each other in the air. It also helped people on the ground keep track of who was who.
 - b.) In *The Day the Red Baron Died*, Dale Titler quotes D. G. Lewis, the Red Baron's 80th and last victory, about the colors of Richthofen's Circus in his memorable encounter with them:

The planes were painted all colors of the rainbow, each to personally identify the pilot. One was painted like a draughtboard with black and white squares. Another was all sky blue. One looked like a dragon's head and large eyes were painted on the engine cowling. Others had lines in various colors running along the fuselages or across them; machines painted black and red, dark blue, gray. There was a yellow-nosed one too. Richthofen, of course, led the formation in his Fokker triplane painted a brilliant pillar-box red. Its black crosses were edged with white."

D. Withdrawn from service

1. Richthofen was killed in April 1918 while flying over Morlancourt Ridge, near the Somme River.
2. "Tripples" were withdrawn from service in summer of 1918
 - a.) Engine troubles continued to plague
 - b.) But they were intended from first as "stopgap fighter" until the Fokker D-VII's arrived
 - c.) But some top aces managed to hold on to one or two for personal use when conditions favored them.
3. After the war, only two or three originals were left. None survived the next war, when the museums were bombed along with everything else in Germany.

III. Now that we've seen how the plane was developed and used in war, let's check out its strengths and weaknesses.

A. Strengths

1. Outstanding rate of climb of 1,130 feet per minute
 - a.) three wings provide a lot of lift
 - b.) airfoil on axle generated more lift than the weight of undercarriage
2. Outstanding maneuverability - as Vizefeldwebel Franz Hemer of Jasta 6 said, "The triplane was my favorite fighting machine

because it had such wonderful flying qualities. I could let myself stunt — looping and rolling — and could avoid an enemy by diving with perfect safety.”

- a.) It was stable in all three axes
- b.) The rotary engine provided tremendous torque for right-hand turns

B. Weaknesses

1. Slow

- a.) Those same three wings that gave outstanding lift also gave a lot of drag
- b.) Most Allied aircraft were faster than the Dr-I

2. Weakly built

- a.) Lightweight, at a mere 1,200 pounds
- b.) It developed a history of wing failure, Heinrich Gontermann, etc. (Anthony Fokker may have been chintzy with the glue and varnish}
- c.) What must be remembered is that it was wartime, and aircraft were slapped together to get them to the front as quickly as possible. Also, once there, aircraft were not expected to have a long service life. They were not built to last.
- d.) However, on page 200 of his excellent book, *The Day the Red Baron Died*, Dale Titler quotes an Allied squadron pilot who closely examined the wreckage of the Red Baron's machine after Richthofen was shot down in April of 1918: “We had not known previously how well made the Fokker triplane was, with three-ply box spars, ply leading edges and a steel tube fuselage.”

3. Engine troubles main operational difficulty

- a.) Rotary engine not that powerful
 - i.) Richthofen at first did not want any more fighters with rotary engines.
 - ii.) Fokker V6 was experimental attempt to mount the Mercedes inline engine in a triplane. It was heavier and slower, and lost the maneuverability given by the Oberursel rotary engine.
- b.) Shortage of quality lubricant
 - i.) Castor oil required, native to India, Brazil and

- China, but not to Germany
 - ii.) Sulfated castor oil, a German synthetic substitute, left much to be desired
- 4. Difficult to fly
 - a). The same instability that made it such a great dogfighter also meant it had to be controlled at all times.
 - b). Especially difficult to land, wingtip skids were necessary

Conclusion

So we've seen how the Fokker D-1 triplane was developed and how it was used in war. Only through flying in battle did its strengths and weaknesses become evident.

One might suppose that with all the trouble the triplanes had from the very beginning, and especially considering how difficult they were to fly, that nobody wanted them. Some feared them, but for the most part they were prized for their outstanding climb and maneuverability, qualities that keep you alive in aerial combat. They were much preferred to the lackluster Albatros and Pfalz fighters which they supplanted but never entirely replaced, and Fokker Triplanes were the best German fighters in the spring of 1918 during Germany's last great offensive of the war. To sum up the triplane in the words of the Red Baron, they "climb like monkeys and are maneuverable as the devil."