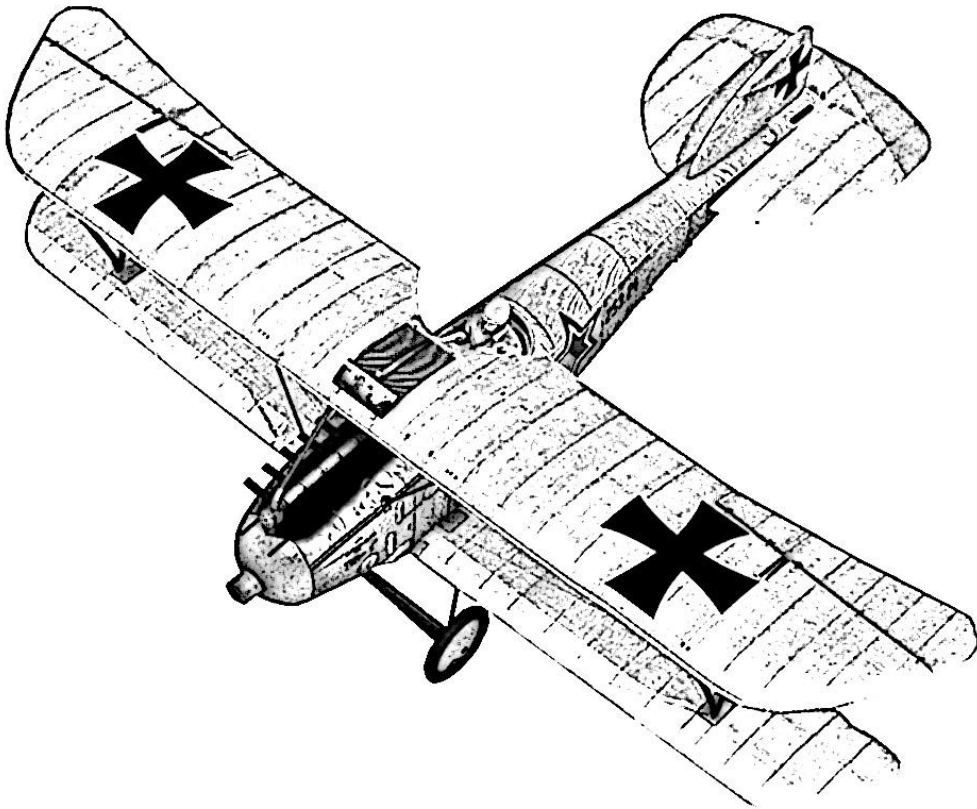


AIRCRAFT FACTOR



Albatros D.III (Oeffag) series 253

Flight Manual

AIRCRAFT FACTORY

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System Requirements:

The Aircraft Factory Albatros D.III Oeffag requires the following to run:

Requires licensed copy of Microsoft Flight Simulator X

Service Pack 2 (SP2) required

NOTE : The plane has been compiled using the MS FSX Acceleration Toolkit. While AF Oeffag D.III may work with SP1 or earlier, some of the features may not work. It is strongly suggested to have SP2 or Acceleration Pack installed (or the MS FSX Gold Package)

OPERATING SYSTEM:

- Windows XP SP2
- Windows Vista
- Windows 7

PROCESSOR:

2.0 GHz single core processor (3.0 GHz and/or multiple core processor or better recommended)

HARD DRIVE:

400MB of hard drive space or better

VIDEO CARD:

DirectX 9 compliant video card with at least 128 MB video ram (512 MB or more recommended)

OTHER:

DirectX 9 hardware compatibility and audio card with speakers and/or headphones

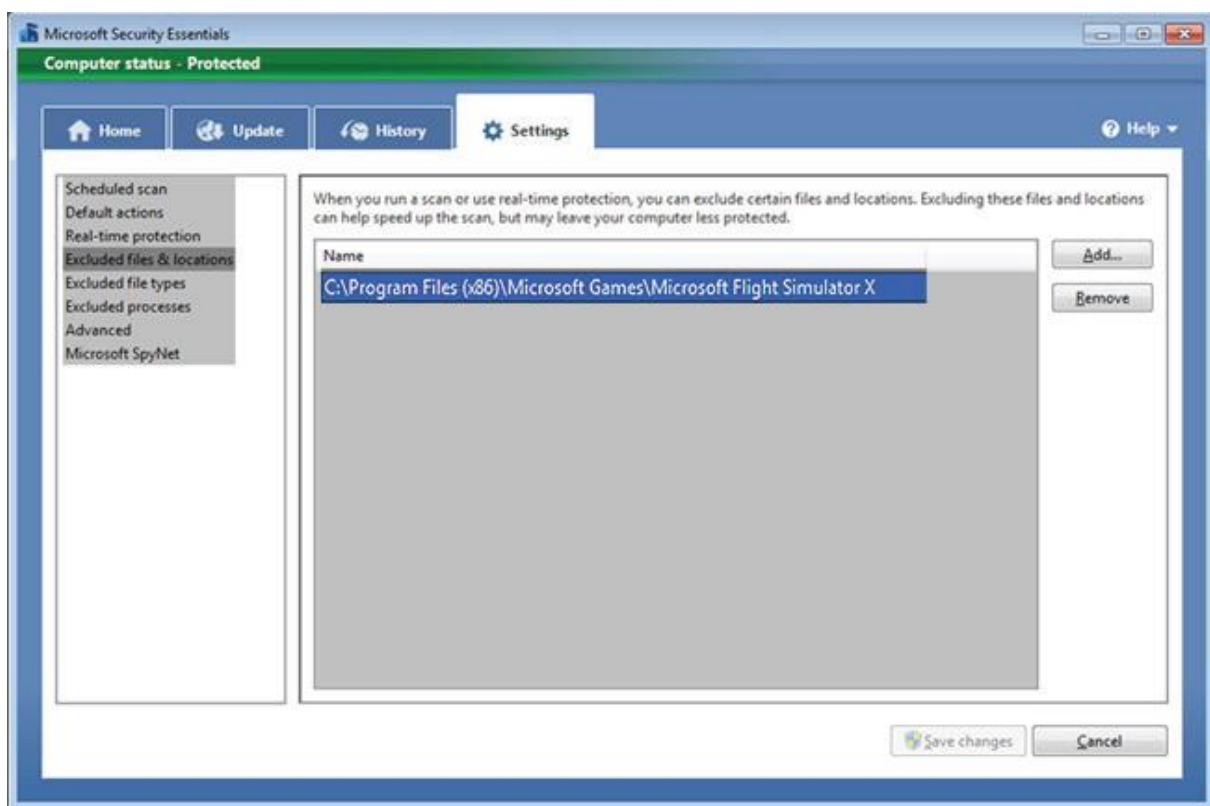
Installation:

Included in your downloaded zipped (.zip) file, which you should have been given a link to download after purchase, is an executable (.exe) file which, when accessed, contains the automatic installer for the software.

To install, double click on the executable and follow the steps provided in the installer software. Once complete, you will be prompted that installation is finished.

IMPORTANT:

If you have Microsoft Security Essentials installed, be sure to make an exception for Microsoft Flight Simulator X as follows:



TECHNICAL SUPPORT

www.a2asimulations.com

Feel free to register and post on our forums. We watch these forums daily, and will try to be very quick to answer any of your questions.

A brief history of the Albatros D.III (Oeffag)

The history of this plane begins in Spring 1916 when the German Air Force (Luftstreitkräfte) HQ ordered several factories to design a new single seater biplane capable to compete with the new Entente scouts such as Nieuport 11.c1, Nieuport 17.c1 and the D.H.2. The new Allied designs combined with the new tactics managed to completely wipe from the air the monoplane-type Fokker E.III and to create air superiority over the Western Front. New planes were desperately needed and the Fokker, Halberstadt and Albatros soon presented new scout planes such as Fokker D.II, Halberstadt D.II and Albatros D.I. The last one was especially well designed. Powered by the 160HP Mercedes D.III inline engine and heavily armed with the twin Spandau machine guns, the Albatros quickly earned the reputation of a very good scout. The HQ quickly ordered a series of 50 D.I's which were pushed into newly created Jastas (Jagdstaffeln) in September 1916. The Albatros Werke soon released another version, the Albatros D.II which had a smaller gap between the upper and lower wing and few other improvements. This version gave the German Air Force some breathing room and their squadrons started to become very effective.

The successful Albatros D.II was quickly noted in the allied Austro-Hungary. In the Fall of 1916, Austrian company Österreichische Flugzeugfabrik AG (Oeffag) in Wiener Neustadt purchased a license from the Albatros Werke and managed to introduce the own version in January 1917. The prototype, marked 50.01, differed from the original design. First of all, it was powered by the more powerful, 185HP Austro-Daimler Dm 185 inline engine. The cylinders were covered and the wing chord was enlarged from 1,60 meter to 1,70 meter. The armament was also different. Apart from the twin 7,92mm Spandau machine guns, one 8mm Schwarzlose machine gun was mounted inside of the fuselage, much lower than in the German Albatros. It improved forward visibility, but made reloading the gun problematic.

The Austro-Hungarian Army ordered 50 Oeffag D.II's, but after completing 15 planes (numbers from 53.02 to 53.16), the factory cancelled production and switched to the new design, marked as D.III. This version was inspired by the new design from the German Albatros Werke – the Albatros D.III which was introduced in December 1916 and became a deadly adversary to the Entente planes in the Spring 1917. The plane received a completely new wing, inspired by the French Nieuport 17.c1 sesquiplane design. This improved the climb and turn ratio over the older D.I and D.II versions.

The licensed-built Albatros D.III prototype, marked as 53.20, was constructed in February 1917. Again, the design differed from the original model from the Albatros Werke. The engine was covered, and the fin under the fuselage was enlarged. The gravity tank was fitted into the upper wing along with the radiator which was in the center position, while the tank was moved to the left. The armament was redesigned, too. A second 8mm Schwarzlose machine gun was installed, which gave the plane much better firepower. The upper wing could be regulated and the incidence could be adjusted.

The Oeffag D.II's and D.III's appeared on the Italian Front in June 1917 after being certified by the Fliegerarsenal a month before. At the beginning, they served in the general – purpose Fliegerkompanie (Flik) units which were responsible for various tasks. But very soon the new scout units, marked as Flik/J, were introduced because the front needed specialized fighter units. The Oeffag scouts received a good input from their pilots. The planes were easy to fly, well armed and durable. There were no accidents of losing a lower wing, just like in the German Albatros D.III, because the Oeffag engineers strengthened the construction by using thicker wing spars and wing ribs. The root wing was mounted to the fuselage using an additional metal brace.

Albatros D.III (Oef) Ba.253 for Microsoft Flight Simulator X

While German engineers at Albatros Werke wanted to decrease the weight of their next scout, their Austrian colleagues at Oeffag did the opposite thing. Their next designs known as Bauart 153 and 253 (series 153 and 253) were heavier and powered by the stronger engines. The production of the 153 series was launched in July 1917. Apart from the new 200HP Austro-Daimler Dm 200 six-cylinder inline engine, the upper wing was slightly moved forward. The planes after 153.111 had redesigned forward fuselage, because the propeller cowling was removed. The Austro-Hungarian Army ordered 280 Oeffag 153's. The model had much better parameters than the earlier Oeffag series, and the new German Albatros D.V which had appeared on the Western Front in the late Spring 1917.

After the new Austro-Daimler Dm 225 was designed by Ferdinand Porsche, the engineers at Oeffag started to adjust the existing design to the new engine. The new version, known as Bauart 253 (Series 253) was introduced in May 1918. There were 230 planes ordered, but only 201 were delivered until the Armistice. The production was however continued after World War I.

The Oeffag Ba.253 was the final version of the successful series. It was said to be the best Austro-Hungarian fighter plane, which possessed reasonable level speed close to 200 kph (120mph) and a very good climb ratio. The plane could reach 5000 meters in 20 minutes, while the 153 series did the same in 13 minutes more. Because of the more powerful (and heavier) engine, the construction was again strengthened. The fuselage and outer wings received additional plywood bracing. The wing's trailing edge was made of wire rather than a steel tubes. Some planes (253.31, 253.64, 253.116-120) had machine guns moved up, so the pilot had full access to them.

The Oeffag scouts were popular among the Austro-Hungarian Aces, including Godwin Brumowski, Frank Linke-Crawford, Benno Fiala or Franz Rudorfer.

After the war the Oeffag planes were used by the Air forces of Poland and Czechoslovakia. One was used in the Kingdom of Serbs, Croats and Slovenes as a trainer. Some were used in civil aviation. Sadly, no Oeffag-built Albatros survived to the present times, however two Oeffag Ba.253 replicas have been constructed by Mr. Koloman Mayrhofer, one of which is on display in the Aviaticum Museum in Wiener Neustadt near Vienna, Austria. Both planes use many original parts, such as gauges and Austro-Daimler engines.

Albatros D.III (Oeffag) Ba.253 construction:

Single-engine, single-seated biplane scout plane. Fuselage covered with plywood with wooden spars and ribs. Front section covered with aluminum plates. Upper wing with two spars and plywood ribs, canvas covered. Lower wing with one spar. Ailerons and tail controls were canvas covered.

Engine: six cylinder, inline, water cooled Austro Daimler Bauart 23000. Nominal power – 225 HP. Radiator placed in the center section of the upper wing.

Fuel system: two fuel tanks: main tank: 85 liter capacity, gravity tank: 10 liter capacity. Some earlier models had also a small tank which was used during the engine start.

The post-WWI service. The Kosciuszko Squadron

The career of the Oeffag D.III continued after the collapse of the Central Powers in November 1918. The Central and Eastern Europe became the place where new countries were born and some got independence after a very long time.

Poland very quickly became interested in the Oeffag design. From the very beginning, the country had border and having the new aero planes was an essential thing. On the 1st of January 1919 a former pilot of Austro-Hungarian AF, Obl. Stefan Stec, came to Vienna to choose the best plane from the available Austrian scouts. The Poles were interested in Oeffag D.III and WKF D.I. But during the demonstration flights in Wiener Neustadt, one WKF D.I crashed, and a second had a serious structure failure. This is why the Polish Government became interested in the Oeffag D.III and finally ordered 38 planes in total.

The first batch of 17 planes was delivered in July 1919. Apart from them, 67 spare Austro-Daimler engines were bought. 12 Oeffags were delivered to the 7.Eskadra Mysliwska (7th Fighter Squadron), the rest was delivered in March 1920 to the 13.Eskadra Mysliwska.

The 7.Eskadra Mysliwska was also known as a “Kosciuszko Squadron”. The personnel consisted mostly of the volunteer pilots from the USA. The CO became Cedric Fauntleroy, who was a test pilot during WW1 and was also responsible for acquiring the French planes from the factories, and delivering them to the US squadrons in France. In 1919 he was a CO of 138th Aero Squadron. Another pilot was Merian C. Cooper who served in the 20th Aero Squadron during the WW1 and was shot down during the mission over the Western Front. After the war he was a producer of the famous “King-Kong” movie. Harmon Rorison was a pilot from the 22nd Aero Squadron. Other pilots were Elliot Chess (author of the unit's insignia) and Edmund Graves. The rest of the flying personnel were Polish.

The Kosciuszko Squadron became fully operational in late Autumn 1919 but because of the weather conditions and lack of front operations, they spent the whole winter on the Lewandowka aerodrome in Lviv (Lwów), Ukraine. In the spring of 1920 they moved to the front and started supporting a Polish offensive in Ukraine against Soviet troops. Because of the lack of aerial opposition, the Kosciuszko Squadron was responsible for the recon and ground attacks. Such attacks were very dangerous and so the Oeffags had to be replaced soon by the Italian Ansaldo Balilla's.

The Kosciuszko Squadron played a very important role during the Soviet counter-offensive in June 1920 which was launched on the northern and southern part of the huge front. First of all, the unit spotted the so-called “Horse Army” lead by Semen Budionny – a huge 30.000 cavalry formation which was launched against the Poles and proved to be a very dangerous opponent. The Kosciuszko Squadron pilots were attacking them, trying to slow down the offensive. The most difficult time period for the squadron came in August 1920 when the Red Army got close to Warsaw and Lviv. The Kosciuszko Squadron pilots together with the other Polish units were doing their best to stop Bolshevik troops and their did so. Although outnumbered, they played a very important role during the defense of Lviv.

After the war, the members of the Kosciuszko Squadron were given the Virtuti Militari – the highest Polish medal for bravery and in 1921 they left the Polish Army and returned to the USA. The Kosciuszko Squadron was later renamed to the 111.Eskadra Mysliwska and became a part of the 1.Pulk Lotniczy (1st Air Regiment). After the outbreak of WW2, it's flying personnel were defending Warsaw from the Luftwaffe and after the collapse of Poland they became the backbone of the 303(Polish) RAF Squadron which played an important role during the Battle of Britain.



Albatros D.III (Oeffag) Bauart 253 Specifications

Wing span (upper) – 9,00 meters

Wing span (lower) – 8,70 meters

Length – 7,35 meters

Height – 2,80 meters

Wing area – 20,56 m²

Wing chord (upper) – 1,50 meters

Wing chord (lower) – 1,10 meters

Empty weight – 716 kg

Maximum gross weight – 1005 kg

Wing loading – 48,9 kg/m²

Climb to 1000 meters – 2 min 13 sec

Climb to 2000 meters – 5 min 20 sec

Climb to 3000 meters – 9 min 15 sec

Climb to 4000 meters – 14 min 22 sec

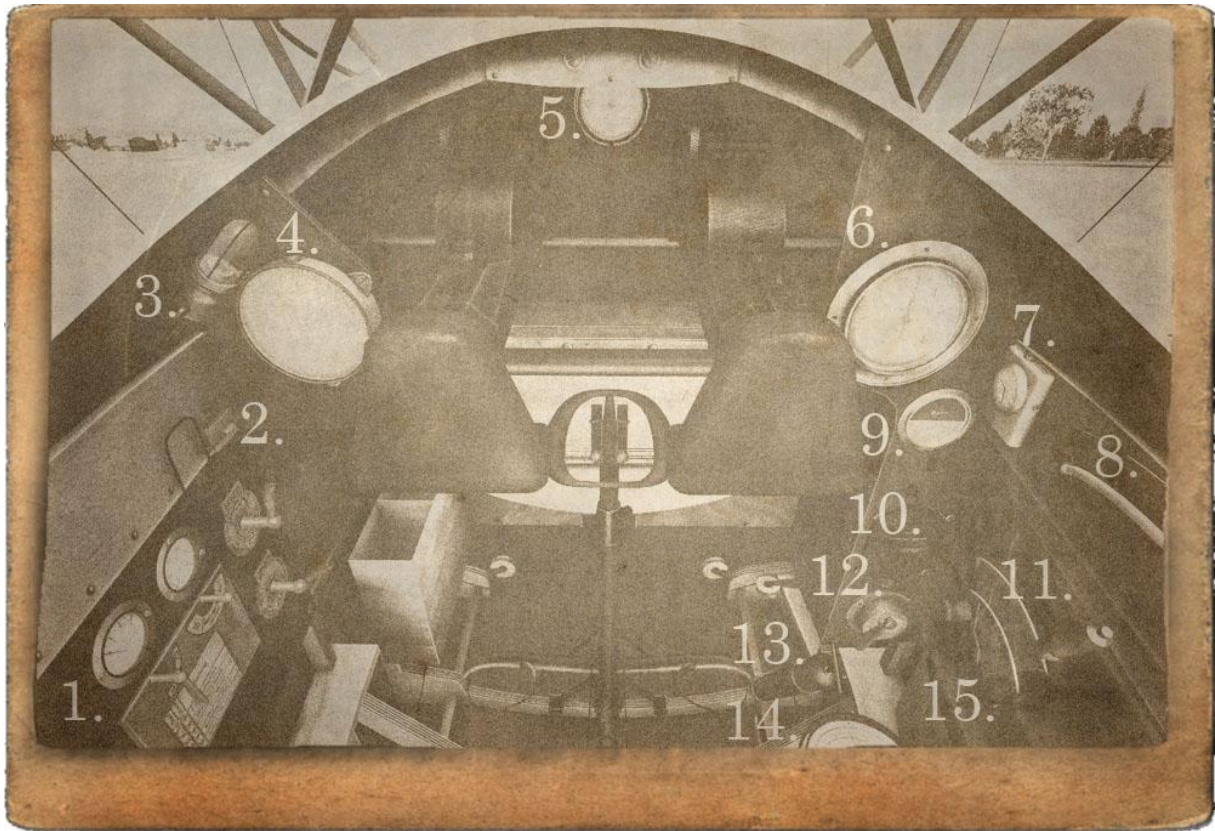
Climb to 5000 meters – 20 min 20 sec

Top speed at sea level – 198 km/h

Range – 300 km

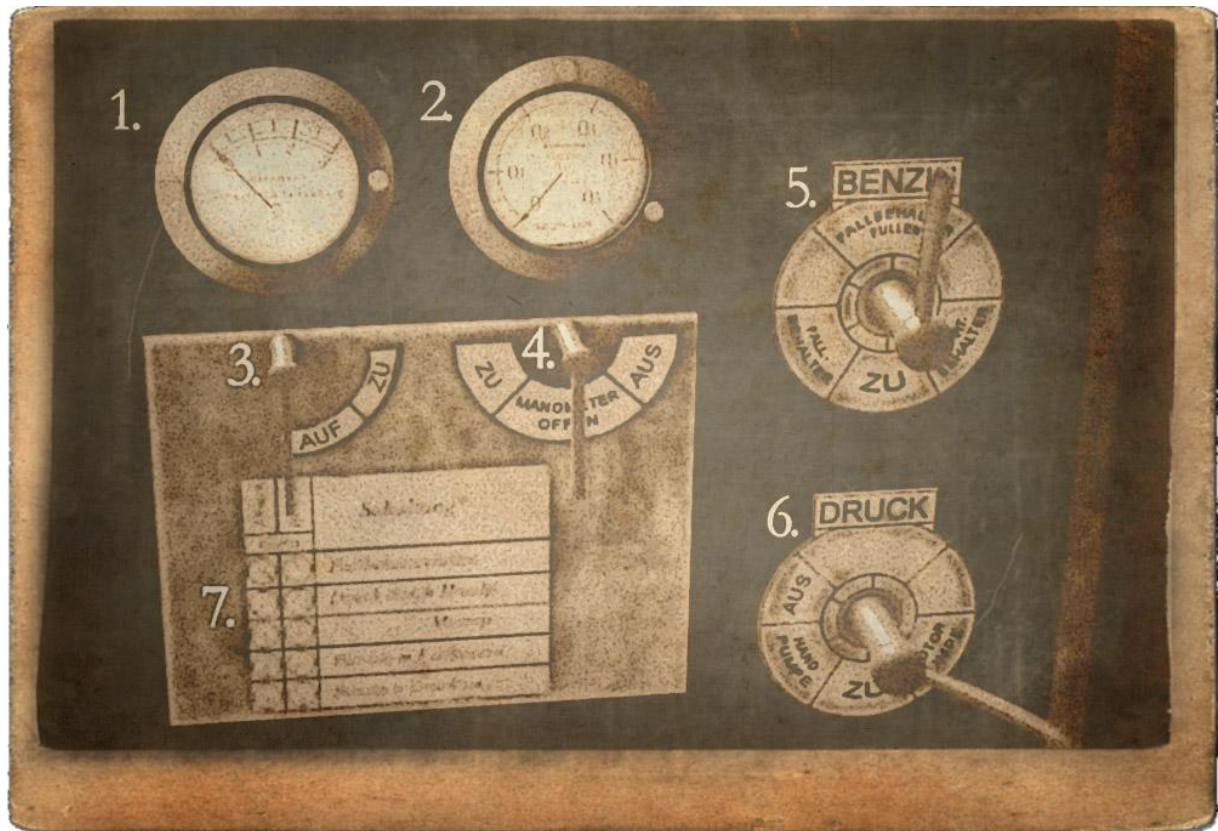
Flight endurance – 1h 30 min

Albatros D.III (Oeffag) Ba.253 cockpit layout



1. Fuel and pressure panel (see the next chapter)
2. Emergency throttle lever (not functional)
3. Cockpit light
4. Altimeter (0-8000m)
5. Main fuel tank gauge (80 liters)
6. RPM gauge (0-1600 RPM)
7. Clock
8. Pitch indicator
9. Bank indicator
10. Bosch starter
11. Throttle and mixture lever
12. Bosch magneto switch
13. Manual air pump
14. Magnetic compass
15. Map case

Albatros D.III (Oeffag) Ba.253 fuel and pressure panel



1. Oil pressure gauge. 0-3 kg/cm²
2. Air pressure gauge. 0-0,5 kg/cm²
3. Oil valve
Auf – open
Zu – closed
4. Air pressure valve
Zu – closed
Manometer offen – pressure gauge open (in use)
Aus - off
5. Fuel tank selector (BENZIN)
Zu – closed
Fallbehälter – gravity tank
Fallbehälter füllen (fill gravity tank) – fuel goes to the engine from the main tank through the wing tank
Startbehälter – small tank for starting the engine (not available in the Oeffag 253 series)
6. Pressure source selector (DRUCK)
Aus – off
Handpumpe – manual pump
Zu – closed
Motorpumpe – engine pump
7. Fuel and pressure selector scheme table

Fuel and pressure selector scheme table

<i>Druck</i>	<i>Benzin</i>	<i>Schaltung</i>
<i>Hahn</i>		
		<i>Fallbehälterfüllen</i>
		<i>Druck durch Handp.</i>
		<i>„ „ Motorp.</i>
		<i>Betrieb m.Fallbenzin</i>
		<i>Benzin u Druck zu</i>

The table depicted above presents the lever positions during the different stages of flight in the Oeffag D.III series. Note that because the original table has not survived, the authors used the similar one taken from the Aviatik Berg D.I scout. The lever positions in that scout were slightly different, so the drawing was reworked to fit the Oeffag and its panel.

The table has two main columns – Druck (Pressure) and Benzin (Fuel) which correspond with the appropriate levers on the left panel. Each column has a drawing showing the exact lever position during the specified conditions:

Fallbehälterfüllen – (fill gravity tank) – Pressure lever set to 4 o'clock, Fuel lever set to 12

Druck durch Handpumpe – (pressure from the hand pump) – Pressure set to 8, Fuel set to 4

Druck durch Motorpumpe – (pressure from the engine pump) – Pressure set to 4, Fuel set to 4

Betrieb m.Fallbenzin – (operating from the gravity tank) – Pressure set to 6, Fuel set to 8

Benzin u Druck zu – (Fuel and Pressure levers set to off) – Pressure set to 6, Fuel set to 6

Oeffag D.III 2D Panel

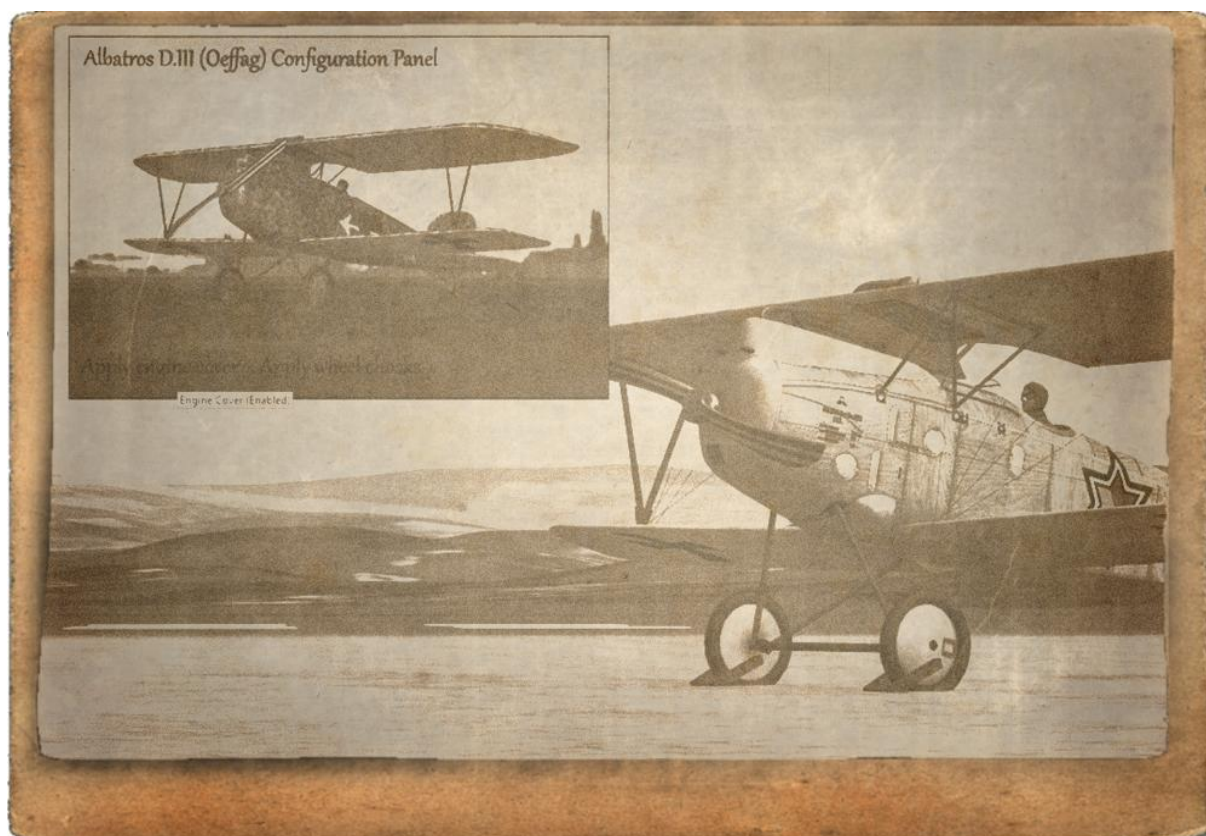
The Oeffag D.III model for the Microsoft Flight Simulator X has been equipped with the 2D panel. You can access it by pressing combination SHIFT +1. The panel gives you the ability to enable wheel chocks and to apply an engine cover.

The wheel chocks were added just for fun, as the aircraft does not have any brakes. They can be turned on when the plane sits on the ground with the engine turned off.

The engine cover was used during bad weather to prevent the Austro-Daimler from overcooling. Just like in reality, it is strongly suggested to apply it before flying in cold weather. The engine cover “turns on” the carburetor heat, and so your engine will not fail after a couple of minutes of flying. Note, that in the original plane design, the carburetor was heated by the water from the radiator.

To enable the engine cover, the plane has to sit on the ground with the engine turned off, otherwise it will not appear.

The Oeffag D.III for FSX has also been equipped with a simple radio stack, which can be accessed by pressing SHIFT+2.



Aircraft checklists:

1. Before the engine start:

- Magnetos – OFF
- Oil pressure valve – Closed (Zu)
- Air pressure valve – Closed (Zu)
- Fuel tank selector (Benzin) – Closed (Zu)
- Pressure source selector (Druck) – OFF (Aus)
- Mixture – OFF
- Throttle – 0%
- Install engine cover when the temperature is below 0C (38F)

2. Engine start procedures

- Check fuel tanks
- Oil pressure valve – Open (Auf)
- Air pressure valve – Open (Manometer offen)
- Mixture – fully rich
- Throttle – 5%
- Fuel tank selector (Benzin) – set to main tank (Fallbehälter füllen)
- Pressure source selector (Druck) – set to manual pump (Handpumpe)
- Magneto switch – set to 1
- Pressurize the fuel tank by using manual air pump. Provide a pressure of 2,5 kg/cm²
- Crank the starter handle

3. Taxi and take off

- Magneto switch to Both
- Warm the engine for a few minutes at 600 RPM
- Fuel tank selector (Benzin) – set to Fallbehälter (gravity tank)
- Pressure selector (Druck) – set to Closed (Zu)
- Mixture to 85%
- Slowly advance the throttle to 90%
- Take off with 1450 RPM once the tail comes up

4. Normal flight

- Once in the air switch to the main tank by:
- Setting Pressure selector (Druck) to engine driven pump (Motorpumpe)
- Setting fuel tank selector (Benzin) to Fallbehälter füllen (fill gravity tank)
- Set mixture to receive the best RPM value depending on the altitude
- Reduce throttle to 80-85%
- Avoid sharp turns and high G-loading maneuvers above 7G
- Do not dive with the throttle fully open or you will overrev the engine

5. Landing

- Mixture fully rich
- Fuel tank selector (Benzin) set to Fallbehälter (gravity tank)
- Pressure selector (Druck) set to Closed (Zu)
- Due to the light construction, avoid crosswinds
- Reduce throttle

6. After landing

- Throttle to 5%
- Magnetos set to 2, then to 1 and finally to OFF
- Watch for the RPM to decrease to 0
- Fuel tank selector (Benzin) set to Closed (Zu)
- Pressure source selector (Druck) set to OFF (Aus)
- Oil pressure valve set to Closed (Zu)
- Air pressure valve set to Closed (Zu)
- Mixture lever - closed

Credits:

Tomasz Chudzik - original 3D model

Lukasz Kubacki - aircraft painting, manual, flight dynamics, research

Michał Puto – pilot figure, 3D/2D consultant, advanced animations, XML coding

Robert Rogalski – 3D/2D consultant, quality control, system consultant, XML coding

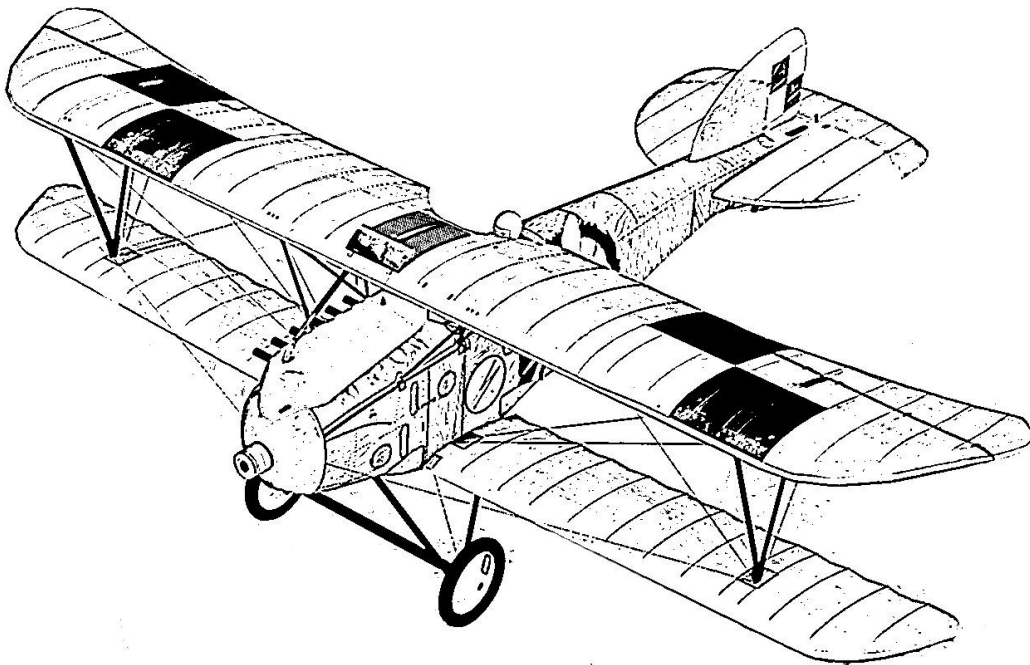
Thomas Dullnig – aircraft system consultant, research, translations

Scott Gentile - installer

The plane uses sounds originally created by Donald Putnam

Beta Testers: Cody Bergland, Forest “FAC257” Crooke, Glenn Cummings (GlennC), Ryan “Hog Driver” Gann, Mitchell Glicksman, Darryl “KillRatio” Hackett, Jake “Captain Jakey” Gentile, Matt “Mattgn” Newton, Krzysztof “Sundowner” Oleksy, Gunter “Snorre” Schneider, Erwin “Dutch 506” Schultze, Guenter “Guenseli” Steiner, Paul “Gypsy Baron” Strogon, Oskar “lonewulf47” Wagner.

Special thanks: Our families, A2A Simulations Core Team and Quality Control Beta Team, Koloman Mayrhofer for providing valuable information about Oeffag planes, Donald Putnam, Jerry Beckwith, Thomas Dullnig, Andreas Krieger and the members of virtual 1.Pulk Lotniczy.



Albatros D.III (Oef) Ba.253 for Microsoft Flight Simulator X



Albatros D.III (Oeffag) Ba.253, serial number 253.24. Personal plane of Obl. Franz Rudorfer (11 victories) of the Flik 51/J.



Albatros D.III (Oeffag) Ba.253, serial number 253.06, Italian front, Summer 1918. Personal plane of Obl. Fredrich Navratil, Commanding Officer of Flik 3/J.



Albatros D.III (Oeffag) Ba.253, serial number 253.08. Personal plane of Obl. Stefan Stec of Flik 3/J.

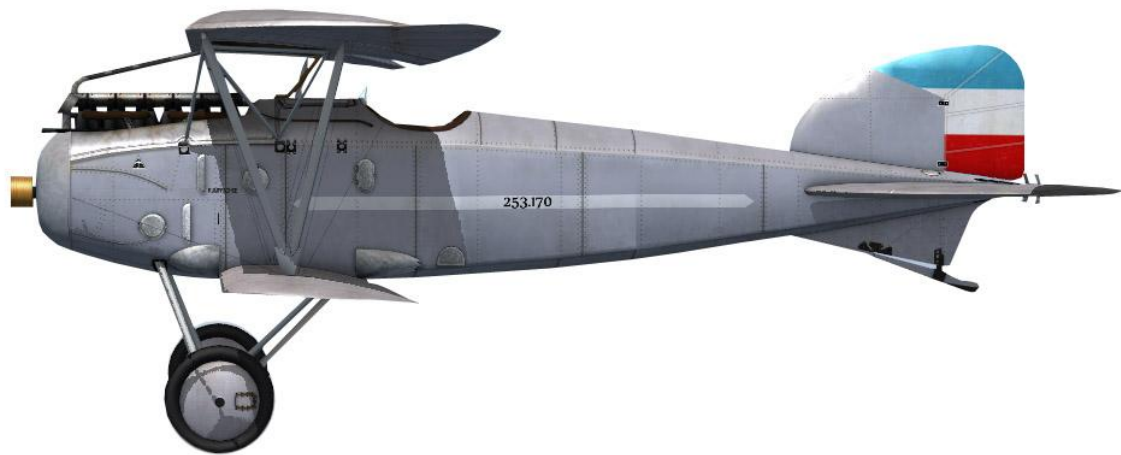


Albatros D.III (Oeffag) Ba.253, serial number 253.64. Personal plane of Kpl.Geza Keisz of the Flik 41/J.



Albatros D.III (Oeffag) Ba.253, Autumn 1919, Lewandowka aerodrome, Lviv, Ukraine. Personal plane of major Cedric Faunterloy, Commanding Officer of 7.Eskadra Myśliwska (7th Fighter Squadron), called "Kościuszko Squadron".

Albatros D.III (Oef) Ba.253 for Microsoft Flight Simulator X



Albatros D.III (Oeffag) Ba.253, serial number 253.170, July 1926, Novi Sad aerodrome. This particular plane was used as a training aircraft in the Air Force of the Kingdom of the Serbs, Croats and Slovenes.

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