



# Pilot Manual

## Klemm Kl 25 d VII R

(Do not use for real flight operations)

A Microsoft Flight Simulator 2020 Addon

by

# Classics Hangar

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## **System Requirements**

Microsoft Flight Simulator version **2020** must be installed and running on your PC.

Not suitable for Xbox.

This product only works in Microsoft Flight Simulator **2024** in free flight mode and possibly with further restrictions!

## **Installation**

Extract the content of the download file to the MSFS Community folder. This is located in the following path for a standard installation:

### **Marketplace-Edition**

C:\User\YourUsername\AppData\Local\Packages\Microsoft.FlightSimulator\_8wekyb3d8bbwe\LocalCache\Packages\Community

### **Steam-Edition**

C:\User\YourUsername\AppData\Roaming\Microsoft Flight Simulator\Packages\Community

## Features:

- Exact replica of the Klemm Kl 25 d VII R 'D-EJOL', built in 1934, based in EDTE, Eutingen im Gäu, in its current state.
- Engine and cockpit sounds recorded from Klemm KL25 d 'D-EJOL' and converted for Flight Simulator with Audiokinetic Wwise.
- Realistic implementation of the open cockpit sound environment including propwash and dynamic acoustic perception of the engine when changing the head position.
- Authentic flight dynamics, based on MSFS's "modern flight model".
- 5 historical liveries and two standard paint schemes with dynamic registration numbers.
- Highly detailed and fully functional virtual cockpit with accurately reproduced historical instrumentation.
- Interactive Checklist.



## **The Klemm L25**

The Klemm L25 was produced in around 610 units and 30 variants between 1928 and 1941. Almost forgotten today, the aircraft was flown by many famous aviation personalities, de-facto, it was the standard sports aircraft of the time and an important part of European aviation history.

The L25 won numerous records and competitions and was used on spectacular flights, for example by the famous German aviatrix Elly Beinhorn on a flight around Africa and a round-the-world flight.

## **Development**

Hanns Klemm worked as an aircraft designer during the First World War, initially for Hansa-Brandenburg and later for Daimler. Aircraft production during the war and in the early post-war period centred primarily on the construction of cargo or commercial passenger aircraft and war planes. Private aviation was reserved for a small class of wealthy people and was essentially limited to gliding.

Hanns Klemm recognised early on that, in addition to these areas of aviation, there was also the aspect of 'flying purely for its own sake, for example to enjoy the beauty of the earth or simply out of sporting enthusiasm'. However, travelling long distances in a glider was rarely possible. As early as 1919, he developed the concept of a small, light and inexpensive aeroplane for everyone that could cover long distances with a weak but reliable engine. With this in mind, he developed the Daimler L15 from 1919, which by 1924 had become the Daimler L20, the world's first light aeroplane suitable for series production.

In 1926, the newly formed Daimler-Benz A.G. decided not to pursue aircraft construction any further. Hanns Klemm took over the factory building and the rights to the Daimler L20 in 1927 and founded



Leichtflugzeugbau Klemm GmbH. Around 80 Daimler/Klemm L20s were still produced in the old Daimler halls in Sindelfingen near Stuttgart before production was moved to Böblingen in 1928. Series production of the Klemm L25, which had been further developed by designer Robert Lusser, began here in 1929, initially with a 20 hp Daimler F7502 or a French 40 hp Salmson AD 9 engine, and from the 'c' series onwards usually with an 80 hp Hirth HM60. Individual aircraft were also equipped with other engines, e.g. the Siemens SH 13 a radial engine. At the same time, other variants of the L25 were offered, such as the VL25, which offered reasonable space for two people in the front seat, and the L26 with structural reinforcement and a larger engine. The L26 was also available with a widened fuselage as the VL26. Like most aeroplanes of its time and class, the Klemm L25 was certified for basic aerobatics. After the standardisation of aircraft types in Germany by the Reichsluftfahrtministerium in 1930, the aircraft was given the designation Klemm Kl25.

Due to the global economic crisis of the early 1930s, sales were initially slow, although the L25 was able to win numerous national and international cross-country and performance competitions. After the National Socialists came to power in 1933, privately organised aviation in Germany came to a halt. All flying clubs were incorporated into the German Air Sports Association - the Deutsche Luftsportverband - and private flying was organised centrally. The DFL chose the Kl25 as the new standard training aircraft and ordered several hundred of them in 1934 and 1935. With the introduction of the Kl35 as the new training aircraft, production of the L25 for the German market ended in 1936. However, as the new Kl35 was subject to export restrictions, the L25 continued to be produced for export. By the end of production in 1941, around 610 units had been built, with the Kl25 d VII being the most frequently built variant with



around 270 units. As early as 1938, many L25s were taken out of service by the DFL and mostly sold abroad. In 1943, the Reich's Aviation Ministry issued the decommissioning order and most of the remaining models were scrapped.

The L25 was exported to numerous countries worldwide. Licensed models were produced in the USA under the designation Aeromarine-Klemm AKL-25 and in Great Britain as British Klemm L25C Swallow or British Aircraft Swallow.

### **Klemm KI 25 d VII R ,D-EJOL'**

The 'EJOL' is the third oldest airworthy aircraft in Germany. Since its restoration between 2009 and 2013, it has been flying regularly from its base in EDTE, Eutingen im Gäu, and is a welcome guest at many air shows and events.

The pilots of FSG Hanns Klemm e.V. have supported this flight simulator project from the very beginning and granted us unrestricted access to the aircraft. It was therefore obvious to take the 'EJOL' as a complete model for the development of this project. This FS aircraft is not a historical reconstruction, but an exact copy of the 'EJOL' in its current state.

Several changes were made over the decades. For example, the tail skid was replaced by a tail wheel. A radio and transponder were retrofitted underneath the instrument panel. As the 6 volt alternator cannot provide sufficient power, these are supplied by a battery in the luggage compartment. An elevator trim was retrofitted and is operated via a retrofitted lever on the left cockpit wall. The instrumentation in the cockpit was largely adapted to the original equipment. Where original instruments could not be found, comparable models from the 1930s were installed.



## Characteristics and handling

*For detailed procedures, please refer to the interactive checklist in the simulator.*

The flight behaviour of the L25 is often described as good-natured. On a calm and windless late summer afternoon, this is certainly true. The stability around the pitch and roll axes is poor, so that even in mild turbulences the aircraft needs to be flown actively.

Although the aerodynamically clean airframe has a low inertia, it also has low drag compared to other aircraft of the time. The aircraft therefore glides relatively well. Hence, landings should be planned and initiated in good time.

The L25 has no tendency or ability to spin. Turns must be flown with ample rudder and little aileron. Take-offs and landings in crosswinds should be avoided. The cockpit is very sparingly equipped. For example, there is only an RPM indicator for engine monitoring.

The method of fuel measurement was standard at the time, but seems rather unusual today: a dip tube is pressurized by means of an air pump mounted on the panel, whereupon the contents of the gravity tank at the front are displayed on the fuel gauge for a few seconds.

From time to time, fuel must be pumped from the two wing tanks into the main tank using the hand pump on the left cockpit wall.

There is no lighting in the cockpit. As was customary at the time, the digits on most of the instruments are coated with “Leuchtpaste”, a radioactive material that fluoresces green in the dark.



## Specifications

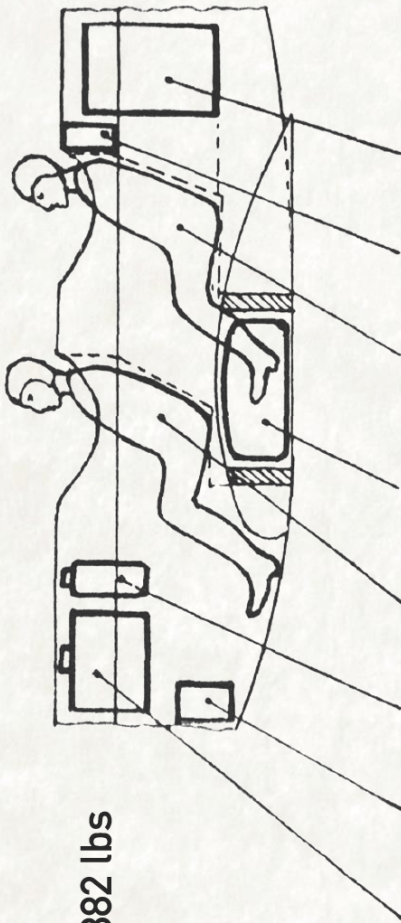
The Klemm L25 is a cantilever low-wing monoplane made entirely of wood with an open tandem cockpit. The fuselage, horizontal stabiliser and wings are planked with 1.6 mm plywood. All control surfaces and the wings from the rear spar upwards are covered with fabric. The undercarriage consists of a tubular steel construction with rubber suspension and a rubber-suspended tail skid. This was subsequently fitted with a tail wheel on the EJOL.

The aircraft has no landing flaps. The angle of attack of the horizontal stabilizer can be adjusted on the ground to balance the load with different payloads. The EJOL was retrofitted with a trim tab on the left-hand elevator so that it can also be trimmed in flight.

<b>Klemm KI 25 d VII R</b>	<b>Hirth HM60R/2</b>	
Engine performance	82 hp	
Weights for use and load group:	P3 ( Passenger transport )	S4K ( Training and aerobatics )
Empty weight, equipped	400 Kg / 882 lbs	400 Kg / 882 lbs
Payload	320 Kg / 705 lbs	250 Kg / 551 lbs
Flight Weight	720 Kg / 1587 lbs	650 Kg / 1433 lbs
Performance at flight weight S4K:		
Max. Speed	160 kph / 86 kts	
Cruise Speed	140 kph / 76 kts	
Landing Speed	60 kph / 32 kts	
Climb time to 1000 m	5,8 min.	
Service Ceiling	4.800 m / 15.750 ft	
Best Climb Speed	100 – 110 kph / 54 – 59 kts	
Max. Allowed Dive Speed	290 kph / 157 kts	
Approach	85 – 90 kph / 46 – 49 kts	
Touchdown	60 – 65 kph / 32 – 35 kts	
Stall Speed	78 kph / 42 kts	
Fuel	90 L / 23.775 gal	
Fuel Consumpt. per 100 km/miles	14 L / 5.95 gal	
Range	650 km / 350 nmi	
Takeoff Run	100 m / 330 ft	
Landing Distance	150 m / 490 ft	



## Load Plan

<div>Empty Weight: 400 kg / 882 lbs</div> <div><div>* buckle up on front seat</div><div>**after consultation with the manufacturer</div></div> <div></div>											
Usage	Gravity-tank	Tools	Oil	Passenger with Parachute	Wing-tanks	Pilot with Parachute	Medical Pack	Baggage up to	Additional Loading Options	Total Load	Flight Weight
Group P3 Cruise flight, passenger transport	kg/lbs	kg/lbs	kg/lbs	kg/lbs	kg/lbs	kg/lbs	kg/lbs	kg/lbs	**kg/lbs	kg/lbs	kg/lbs
	31.5/69.5	5/11	5.5/12.1	90/198.5	36/79.4	90/198.5	2/4.4	25/55.1	**35/77.2	320/705	720/1587
Group S4K Training and basic aerobatics	kg/lbs	kg/lbs	kg/lbs	*Baggage up to 90/198.5	36/79.4	90/198.5	2/4.4	25/55.1	**35/77.2	320/705	720/1587
	31.5/69.5	-	5.5/12.1	90/198.5	31/68.3	90/198.5	2/4.4	-	-	250/551	650/1433
	kg/lbs	kg/lbs	kg/lbs	*Baggage 85/187.4	36/79.4	90/198.5	2/4.4	-	-	250/551	650/1433
	31.5/69.5	-	5.5/12.1	85/187.4	36/79.4	90/198.5	2/4.4	-	-	250/551	650/1433



## Cockpit

### Main Panel

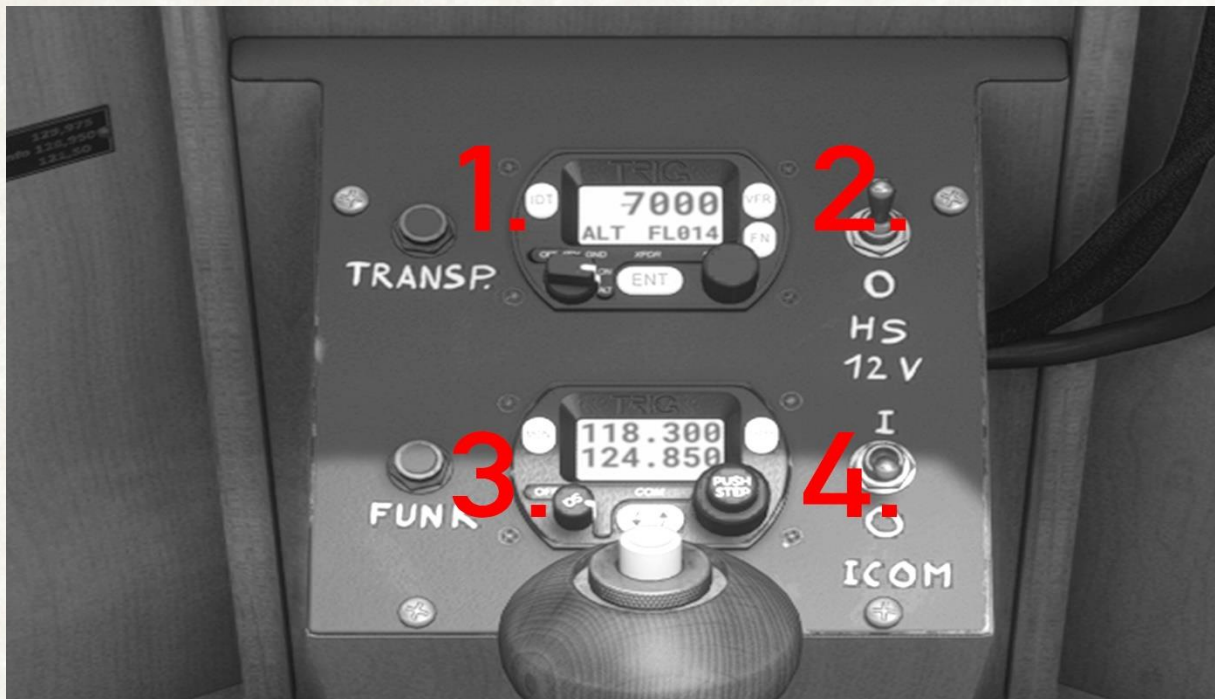


- |                           |                                |
|---------------------------|--------------------------------|
| 1. Airspeed Indicator     | 8. Switch Position Lights      |
| 2. RPM Indicator          | 9. Turn Propeller/Engine Start |
| 3. Conversion Table ft/m* | 10. Clock                      |
| 4. Altimeter              | 11. Turn Coordinator           |
| 5. Compass                | 12. Fuel Indicator             |
| 6. Deviation Table        | 13. Air Pump Fuel Gauge        |
| 7. Magneto Switch         | 14. Switch Alternator          |
|                           | 15. Registration Number**      |

\*Clickspot for displaying international units.

\*\*Clickspot to toggle static/dynamic registration numbers.

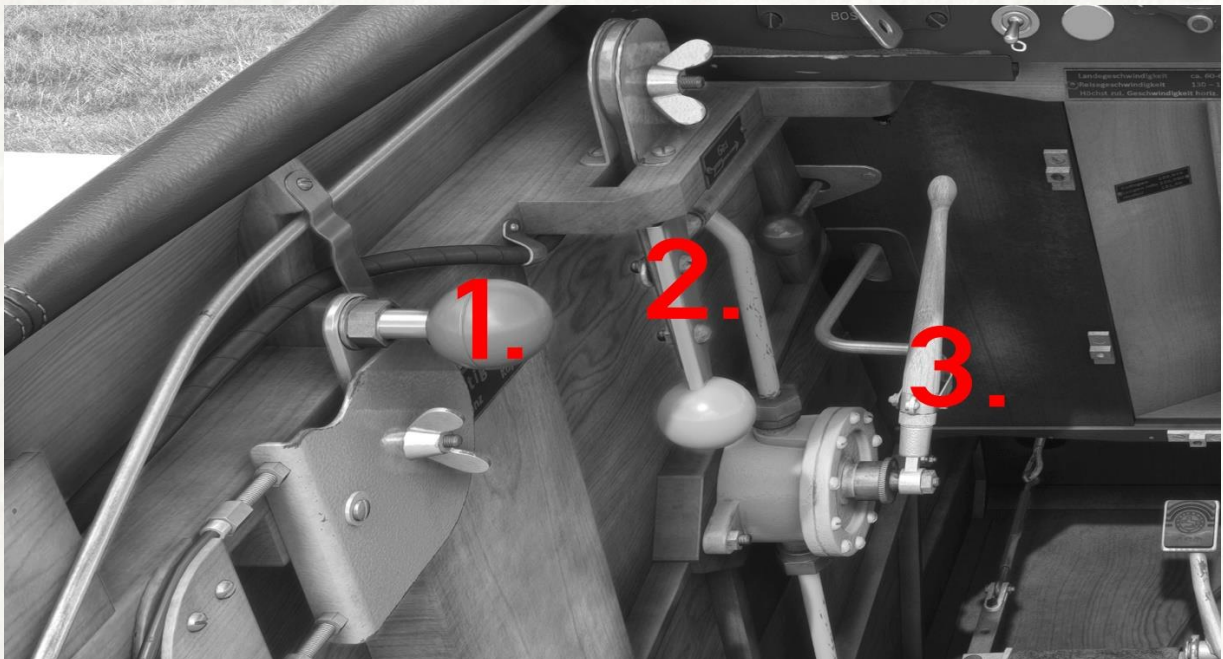
## Radios Below Main Panel



- 1. Transponder
- 3. COMM-Radio

- 2. Battery Switch
- 2. Switch Intercomm

## Left Cockpit Wall

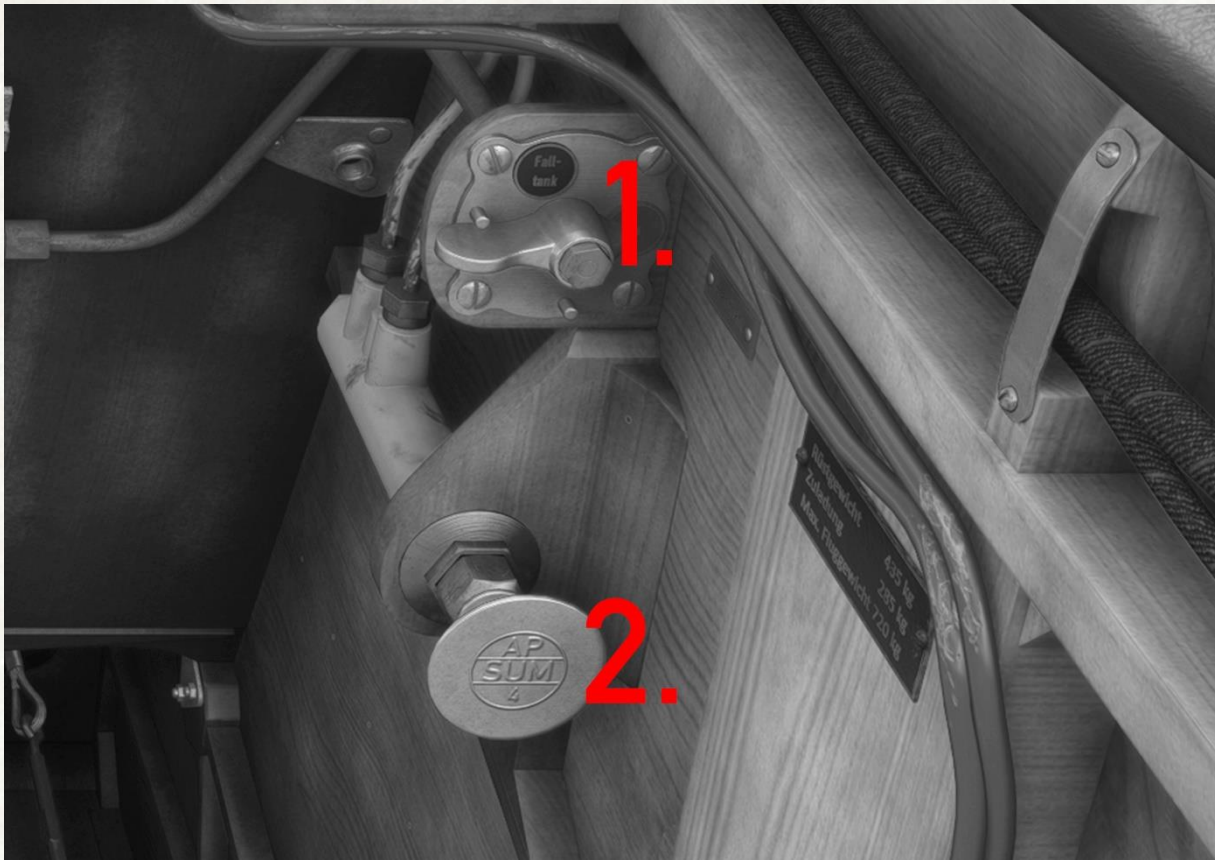


- 1. Elevator Trim
- 3. Fuel Hand Pump

- 2. Throttle



## Right Cockpit Wall



1. Oil-/ Fuel Ventile
2. Primer



## Liveries

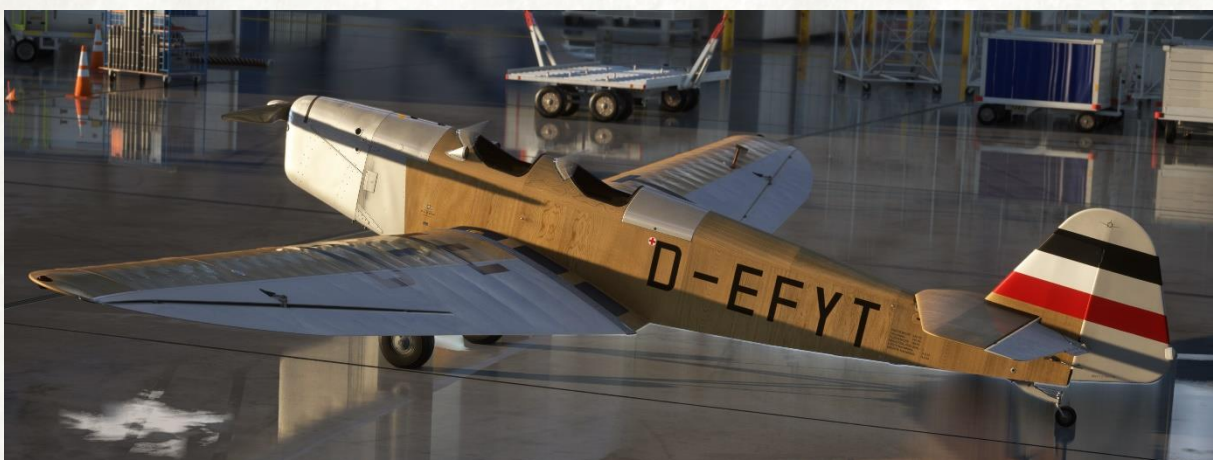
### D-EJOL



The aircraft was built in 1934 and first registered as D-ELAH in September of the same year. Shortly after the start of the Second World War, the aircraft was preserved and stored well hidden, sparing it the fate of being scrapped. In 1957, it was put back into service with the registration D-EJOL. After several changes of ownership, the EJOL was finally acquired by the town of Böblingen - the former site of Klemm-Werke - in 1985 and initially put into storage. The aircraft was then restored in 2009 by the Luftsportgemeinschaft Hanns Klemm e.V., which has been looking after the L25 since 1985, in collaboration with the Böblingen Model Flying Club. Great importance was attached to restoring the aircraft as faithfully as possible.

After 28 years on the ground, the D-EJOL has been regularly taking to the skies again from its EDTE Eutingen im Gäu base since 2013.

### D-EFYT



Also built in 1934, this is a typical example of an L25 in the default factory livery: all wooden parts are coated with a clear varnish. The fabric upholstery and all metal parts are painted in 'silver-bronze', a type of early metallic paint.



## VH-UUR



Built in 1933 as a KL25 d II with a Siemens Sh 13 a radial engine, this aircraft has an extremely eventful history. The Missions-Verkehrs-Arbeitsgemeinschaft e.V Aachen - 'MIVA' for short - acquired the aircraft in 1934 with the registration D-EHIV. The MIVA had set itself the goal of supplying missionary services worldwide with vehicles. After the EHIV was christened St Paulus by the Cardinal of Cologne, the aircraft was shipped to Papua New Guinea in 1935 with Swiss registration HB-XAL together with the pilot Willy Schafhausen due to the political circumstances of the time, where it operated in the service of the Catholic Holy Spirit Mission out of Madang airfield. After Australia took over the administration of Papua New Guinea in 1936, the aircraft was given the registration VH-UUR.

When the Japanese Air Force bombed Madang in January 1942, the VH-UUR was used to evacuate many people to safety. During one such evacuation flight with four children on board, the Australian pilot Stan Johnson was attacked by a Japanese A6M2 Zero, which he successfully outmanoeuvred and eventually escaped. On 30 January 1942, he reached Brisbane with the aircraft, where it was initially stored but later put back into service.

In the 1960s, the Siemens engine was replaced by a Continental O-200, with which the VH-UUR is still in service in Australia today.

An Australian flightsim buddy had his first ever flight in this very aircraft in the 1950s at the age of 6, which is why we decided to include the VH-UUR in the package despite the not entirely accurate engine.



## LX-MAF



Originally registered as D-EKOL in Germany, the aircraft remained in Luxembourg after an emergency landing in June 1936. After several changes of ownership, it was given the registration LX-MAF in 1953. This Klemm K125 is the oldest privately registered aircraft in Luxembourg and is currently on display in non-airworthy condition at the Luxembourg Aviation Museum.

## HA-OBN



One of 6 Klemm aeroplanes that were delivered to Hungary in 1934. This is the private aircraft of Prince Miklós Odessalchi, who flew in the Hungarian Air Force during the Second World War on Messerschmitt Me 210s, among others, and was executed in 1945 after a failed attempt to defect to the Allies.



## Factory Paint – Dynamic Registration



In contrast to the historical liveries, this livery is equipped with dynamic registration numbers, i.e. an identifier set by you in the menu is displayed on the aircraft fuselage and under the left wing.

## Factory Paint 'Silber-Bronce' – Dynamic Registration



Dynamic registration as above. Completely painted in 'silver-bronze'. This paint was intended to protect the aircraft from the sun in tropical areas.

## Credits

3d-Models, Textures,  
Programming, Sounds

Mathias Pommerien

Aerodynamics

Eric van der Veen

Beta Testers

Claus-Peter Schulz  
John Terrel  
Thomas Röhl  
Thoralf Schulz-Kroenert  
Andreas Scharler  
Alessandro Biagi  
Jan Visser

Special thanks go to the pilots of the Luftsportgemeinschaft Hanns Klemm e.V., in particular to the former chairman Edgar Müller and our 'test pilot' Jann Sinner, without whose active support this project would not have been possible.

A Production by Classics Hangar, Mathias Pommerien.

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