

Pilots Manual



BF 108 B (TAIFUN)

Four-Seat Touring Aircraft
with As 10 E

BAYERISCHE FLUGZEUGWERKE A.G.
KONSTRUCTION MESSERSCHMITT

Aircraft Expansion for
Microsoft Flight Simulator X

- not for real world aviation purposes! -



<http://www.classics-hangar.de>

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System Requirements:

Windows XP SP 2 , Windows Vista or Windows 7,
Microsoft Flight Simulator X @ Service Pack 2, Gold or Acceleration Expansion Pack,
Dual Core Processor @ 2.4 GHz or better
512 MB DX9 graphics card or better
240 MB disk space for the executable file, 1.25 GB for the installation

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Important Notes For Windows 7 & Vista Users

Windows 7 and Vista users may get a Windows Security warning giving one of the following messages:

„Windows needs your permission to continue“

„A program needs your permission to continue“

„An unidentified program wants access to your computer“

It is very important that you give permission to allow the program to run. This most commonly occurs with Setup programs, but it could also occur with other applications during normal operation.

If full permission is not granted, your software may not install or run properly.

More information on User Account Control

By default, Windows 7 and Vista has a feature called User Account Control enabled. User Account Control limits the usage rights for all users of the system, including any Administrator account. What this means is that any software requiring access to your system must be given permission for this access. This requirement is common with setup utilities, as the program in the setup utility may require certain runtime modules be explicitly installed on your system. If you know your software is coming from a trusted source, then it is usually safe to install the software.

User Account Control is enabled by default, but it can be disabled so you do not have to always see the Windows Security warning messages. We recommend that you consult your Windows documentation for more information and specific recommendations on using User Account Control before disabling.

Installation Instructions

Run the file „Classics_Hangar_Bf108_v1.0.exe“.

Should Windows User Account Control be disabled on your computer, please run setup with Administrator privileges because certain components may not install correctly otherwise, such as the start menu shortcuts.

Two popups will appear during installation that prompt you to do certain configurations:

Bf108B Just Fly Utility:

Choose whether to configure your Bf 108 with realistic engine damage scenarios or with default functionality.

You can rer-un the Utility any time from the following shortcut:

„Start\All Programs\Classics Hangar\Bf 108 Taifun“

Bf108B Texture-Manager:

The Classics Hangar Bf 108 Taifun comes with a texture resolution twice or four times as high as the default resolution. Making full use of the higher resolution requires a certain setting in the FSX configuration file that the Texture Manager will do for you. You can also configure to use either 2048 or 4096 pixel resolution textures. We suggest to use 2048 pixel textures initially.

You can re-run the Utility at any time from the following shortcut:

„Start\\All Programs\\Classics Hangar\\Bf 108 Taifun“

Note:

Whenever you do changes to the graphics settings from within FSX, the configuration will revert back to default values. As a result you may experience blurry textures with your Bf 108. In that case close FSX and re-run the Texture Manager.

When running the Bf 108 Taifun for the first time, you will be prompted to allow „ClassicsHangar_XMLSound.gau“ to be added to the trusted list. Click **Run** and also click **Yes** in the next po-up window to allow the gauge to be always trusted and allowed.

Features

The Messerschmitt Bf 108 Taifun is arguably one of the most influential aviation designs of its time that set the benchmark back then and has not been bypassed in performance by most contemporary aircraft in its class up until today. This iconic piece of aviation history is now available for Microsoft Flight Simulator X as a faithful reproduction of German period aviation technology. All systems and instruments have been recreated based on the oldest flying Messerschmitt aircraft world-wide, the Bf 108 B D-EBFW with its historically restored VFR panel. Additionally there are seven more paint schemes of historical and currently operable Bf 108 included as well as an alternative panel instrumentation based on the historical blind flying equipment with the addition of some modern Navigation Radios. A manager interface allows to load fuel and visible passengers „on the fly“, perform common simulation tasks with a single mouse click or control an external heater aggregate to facilitate engine start in cold weather.

The Aerodynamics, Stability and Control have been developed based on current real world flight data using the next generation of AvHistory's Flight Model V 5.00.1 what makes possible a not yet in PC-Simulation experienced organic depth in depicting the fundamental principles of flying through air.

- 8 Paint Schemes, configurable for resolutions of 2048 or 4096 pixel using a Texture Manager.
- 2 Cockpit-Variations: historical VFR and „IFR Light“.
- Highly accurate depiction of the period instrumentation and systems beyond the usual FSX limitations.
- Accurate depiction of the Variable Pitch Propeller.
- High Resolution Aerodynamics by AvHistory.org, based on USAF Datcom and ROSCAM computation models using current real world Bf 108 flight data.
- „Just Fly“ utility lets you jump in and fly or use accurately modelled startup, systems and failures.
- Custom-build engine and cockpit sounds.
- Native FSX-Models with DX-10-Preview Support.
- High Dynamic Cockpit-Specular-Mapping.
- Bump and Spec Mapping.
- Paintkit for experienced users to create own repaints, available as an optional download.
- **New in SP1:** Passengers on all seats, configurable using a new Manager Modul.
- **New in SP1:** Realtime Manager that enables quick access to fuel and payloads, to often used simulation commands, and to a new engine heating aggregate that facilitates engine start in cold climates.
- **New in SP2:** ADF radio and indicator in the IFR cockpit.
- **New in SP2:** Becker 2d radio popup window.

The Messerschmitt 108 TAIFUN

„The new Messerschmitt 108 „TAIFUN“ shows it's aerodynamical qualities not just by it's sleek lines, but in the main thing by it's favorable ratio of speed, payload and power supplies.

No other aircraft follows the trend **fly fast – land slow** as much as the Messerschmitt 108 TAIFUN.

It is the fastest, safest, most economical, most spacious touring aircraft of it's class.

In the construction no effort was spared to gain the highest possible degree of safety.

The flying characteristics of the 108 are especially in stalled conditions excellent.

Flaps allow for slow and save landings even on small and bad airstrips.

Handley-Page-slots ensure a high stability. An extraordinary advantage is the TAIFUN's steep glide angle that allows to land over obstacles in a steep angle without increase in speed."

Thus far the extract from the 1936 Messerschmitt factory brochure. Indeed, Willy Messerschmitt succeeded in creating a pathbreaking construction, that sets standards up until recent days.

The Messerschmitt Bf 108 was constructed by the engineers Robert Lusser, Richard Bauer and Hubert Bauer under chairmanship of Willy Messerschmitt in 1934, following an order of the German Air Ministry (Reichsluftfahrtministerium, RLM) for a German contribution to the 1934 *Challenge de Tourism International* that was held in Poland. The tender was not just focussed on performance but equally on use value. With the perspective to gain an order for a new Luftwaffe fighter aircraft, the required high technology has been developed alongside and implemented into the Bf 108. Many of the new features are later seen on the Messerschmitt Bf 109, the Luftwaffe's standard fighter. The aerodynamically extremely clean construction was build as a monocoque, cantilever low wing aircraft with flush and surfaced rivets. The gear was retractable, the wings were foldable and equipped with automatic Handley-Page-slots which contributed significantly to the very good low speed handling of the aircraft.

The fully closed cockpit offered room for two in the initial A-version, and four seats in the by far more widely build B-version. With a cruise speed of 140 knots, a landing speed of 46 knots, a flying distance of 540 nautical miles and a payload of 1100 lbs the Messerschmitt 108 Taifun shows performance figures that are not reached by most modern touring aircraft in that category. Indeed, the Taifun barely shows it's age when standing on today's airfields next to the Pipers, Beechs and Cessnas.

During the 1930th the Messerschmitt 108 won numerous trophies and top ranks at international competitions, just a commercial success didn't really want to show, probably due to the comparably high purchase price of back then 35.000 Reichsmark. This changed when the Luftwaffe selected the Taifun as it's new Liaison aircraft. The military version had an improved 24V electrical system as compared to the 12V system of the civil version, and in the later D-version a slidely modified vertical fin. Production after the war continued at the SNCAN factory in France until 1959. The Bf 108 was then equipped with Renault engines and was produced under the designations Nord1001 and Nord 1002. Noteworthy might be the Taifun's somewhat skuril post war career as a wannabe Luftwaffe fighter

aircraft in several WWII movies. In the 1962 D-Day production „The Longest Day“ two lonely Bf 108 mount an attack at the invasion beaches. The scene is based on a real event: German fighter Ace Pips Priller (played by German actor Heinz Reincke) and his wingman Heinz Wodarczyk flew what was long believed to be the the sole Luftwaffe sortie of that day. In reality Priller and Wodarczyk flew Focke Wulf Fw 190 A. In the movie „633 Squadron“, famous for it's awful special effects, a Bf108 mounts an attack on incoming Mosquitos. It should be noted at this occasion that the Bf 108 was never equipped with weapons.

Today there are a dozen Bf 108 and about 40 Nord1001/1002 of french post war production left world-wide. Basically all machines have been modified to suit the needs of their respective owners and the requirements of modern aviation operations so that there are no two even remotely identical Taifuns today. Currently there are three Taifuns in flying conditions in Germany. One of these, the D-EBFW, privately operated by an owner-trio from Bad Nauheim, Hessen, was brought to Germany in 2003 and lovingly restored to it's original, historical conditions. This Bf 108 B with the production number 1561 is the oldest airworthy Messerschmitt aircraft in general. Our FS representation of the Messerschmitt 108 is a faithful reproduction of his particular aircraft. A very special and heartfelt thanks goes to the owners Hans Jürgen Storck, Benno Herrmann and Hermann Kerzendorf , whose magnificent support made possible this project.

Like Most Taifuns, D-EBFW was originally equipped with the 240 metric HP, air cooled, 8 Cylinder inverted V Argus AS10C engine. The Bad Nauheim guys decided to replace is with the more powerfull 270 HP AS10E though. Just recently it was possible to aquire an original Messerschmitt Me P-7 variable pitch propeller that now serves the aircraft with pride. The gear is retracted by means of 40 strokes of the gear ratchet located between the seats, flaps and elevator trim are operated by wheels located at the left cockpit wall. The variable pitch propeller requires permanent attention to keep it within it's operational boundaries. Fuel content is measured by means of a pneumatic/manual system. A hand pump located at the panel pumps air into the pipelines and allows to indicate the fuel content for several seconds. A correct indication is only possible in level flight. The aircraft takes off easily at 54 knots after a run of about 600 ft. The pilot should be prepared for some nervous moments right after takeoff because gear ratchet, flaps, trim wheel and most of all the variable pitch propeller call for action all at the same time. The rest of the flight should proof fairly uneventfull in terms of piloting challenges. The controls are well harmonized and show a direct response. The Handley-Page-slots retract automatically without noise and without noticeable changes in lift at about 70 knots.

General Notes

Detailed start-up and flying procedures can be gathered from the in-flight check-lists and references. These are also available offline from the following start menu entry:

„Start\All Programs\Classics Hangar\Bf 108 Taifun“

There is no 2d panel included apart from the default GPS popup window.

The virtual 3d cockpit is fully functional and it's visual quality should satisfy even the most critical FS addict. All gauges and instruments are entirely modelled in 3d. The textures are created using the latest industry standard rendering technologies, giving a depth and sense of "being in the cockpit". The aircraft can be entirely operated with the mouse from within the virtual cockpit.

All gauges are in metric units. However, to serve an international audience, all buttons, levers, gauges and labels show an English language tool tip in international units when holding the mouse over them. Additionally there is a button located at the panel that allows to toggle stickers with international units on the most important gauges.

Most buttons are operated by a single left-click. Some multi-position-switches are operated by left-click to increase and right-click to decrease. Rotating items such as the clock swivel are operated by holding the mouse and drag-left or drag-right. Some levers can be operated with the mouse wheel.

There is no gauge back lighting in the Bf 108 apart from the modern radios of the IFR Light panel. Dials and labels are painted with "Leuchtpaste", a fluorescent white paint that illuminates with a green glow in the dark.

Paintkit

If you are familiar with graphics editing software you can create your own repaints for your Messerschmitt 108. There is a layered paint kit in psd format available as an optional download to make easier the creation of user made repaints. After installation of this product the paintkit can be downloaded from the following start menu entry:

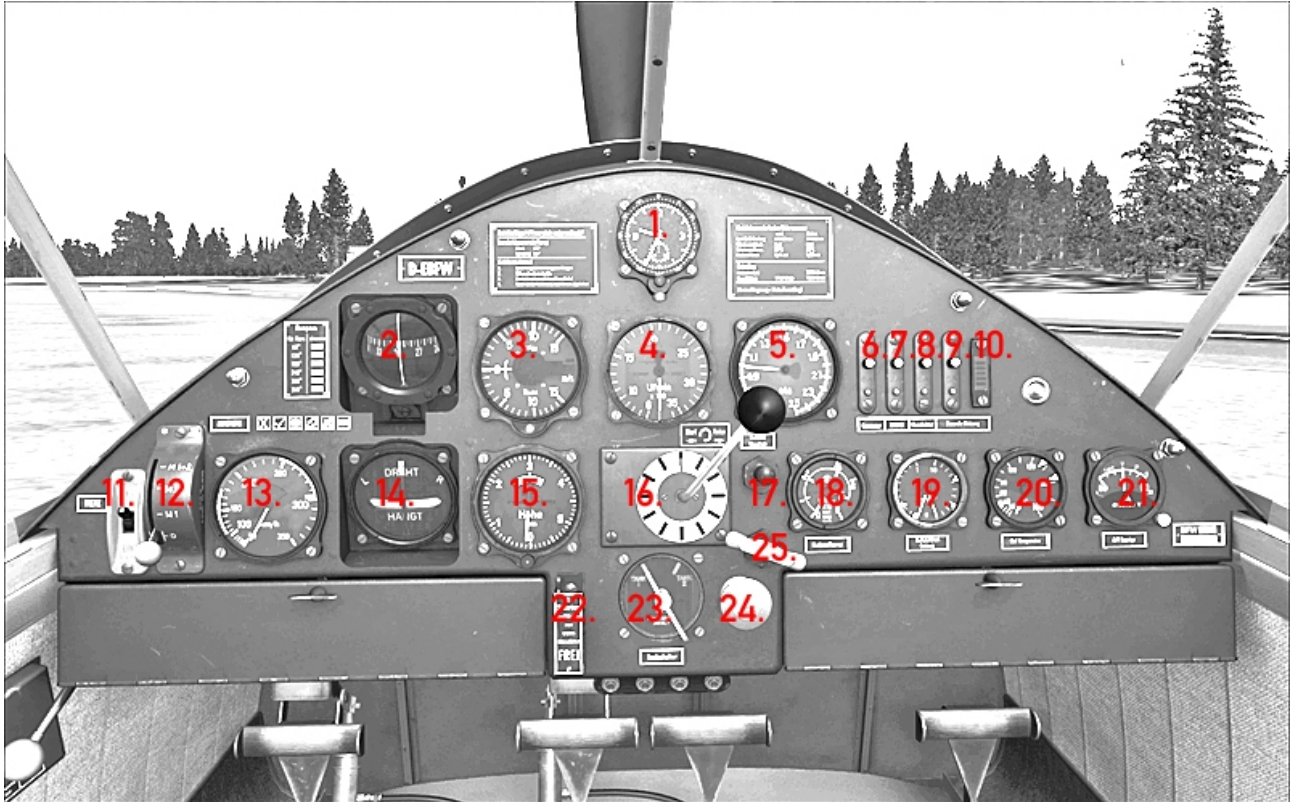
„Start\All Programs\Classics Hangar\Bf 108 Taifun\check for updates“

The Cockpit

In the following chapter we will discuss the Taifun's systems and gauges . Detailed start-up and flying procedures can be gathered from the in-flight check-lists and references. These are also available offline from the following start menu entry:

„Start\\All Programs\\Classics Hangar\\Bf 108 Taifun“

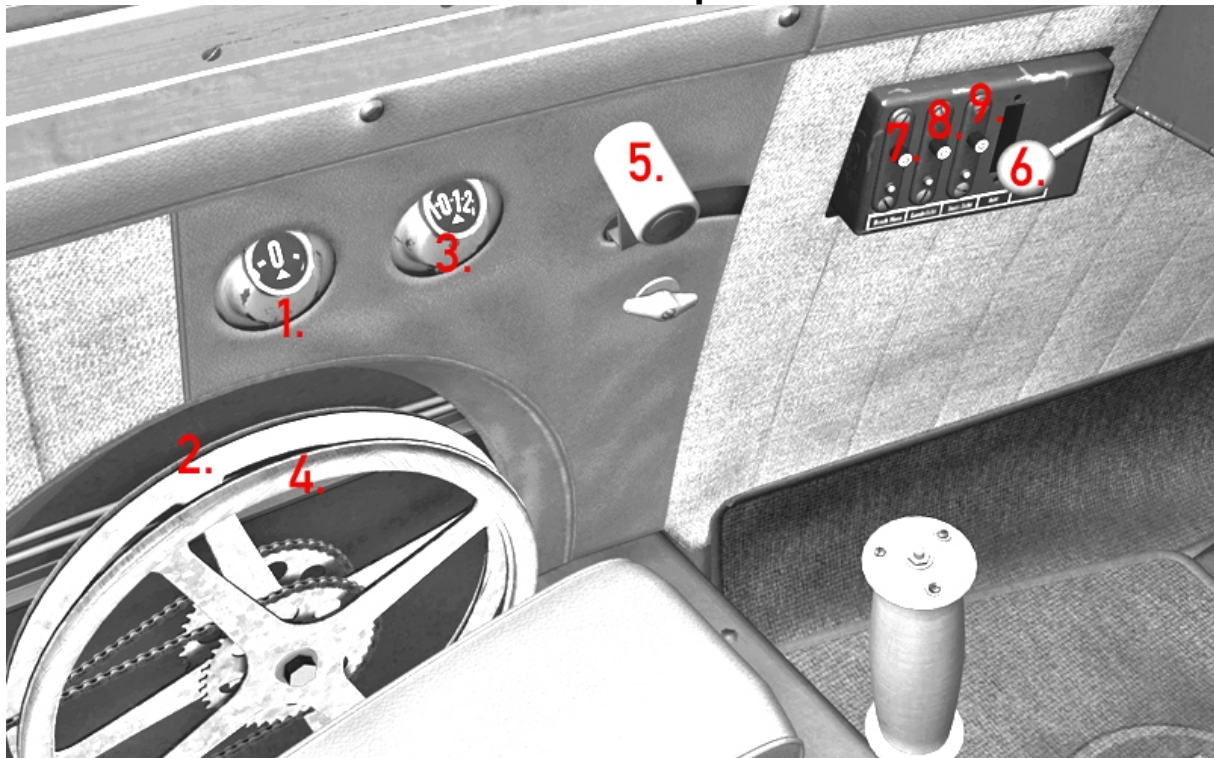
Pic. 1 Overview historical VFR Panel



- | | |
|----------------------------------|--|
| 1. Onboard Clock with Stop Watch | 14. Turn Coordinator |
| 2. Wiskhey Compass | 15. Altimeter |
| 3. Variometer | 16. Prop Pitch Lever |
| 4. RPM Indicator | 17. Air Pump for Fuel Indication |
| 5. Manifold Pressure Indicator | 18. Fuel Indicator |
| 6. Generator Switch | 19. combined Oil/Fuel Pressure Indicator |
| 7. Avionics Master Switch | 20. Oil Temperatur Indicator |
| 8. Position Lights | 21. Volt-Ampere-Meter |
| 9. Pitot Heat | 22. Starter |
| 10. Pitot Heat Indicator | 23. Fuel Indication Selector |
| 11. Battery Switch | 24. Primer Pump |
| 12. Magnetos | 25. Startup Pressure Pump |
| 13. Airspeed Indicator | |

Pic. 2

Overview Left Cockpit Wall



- | | |
|----------------------------|-----------------------------------|
| 1. Flaps Indicator | 6. Fuel Cock |
| 2. Flaps Wheel | 7. no Funktion |
| 3. Elevator Trim Indicator | 8. Landing Light (IFR Panel only) |
| 4. Elevator Trim Wheel | 9. Cockpit Light |
| 5. Throttle | |

Pic. 3

COM-Radio in left Map Storage





2d Popup Window (SHIFT + 2)

1. Avionics Main Switch
2. Mouse area Megahertz range
3. Mouse area Kilohertz range

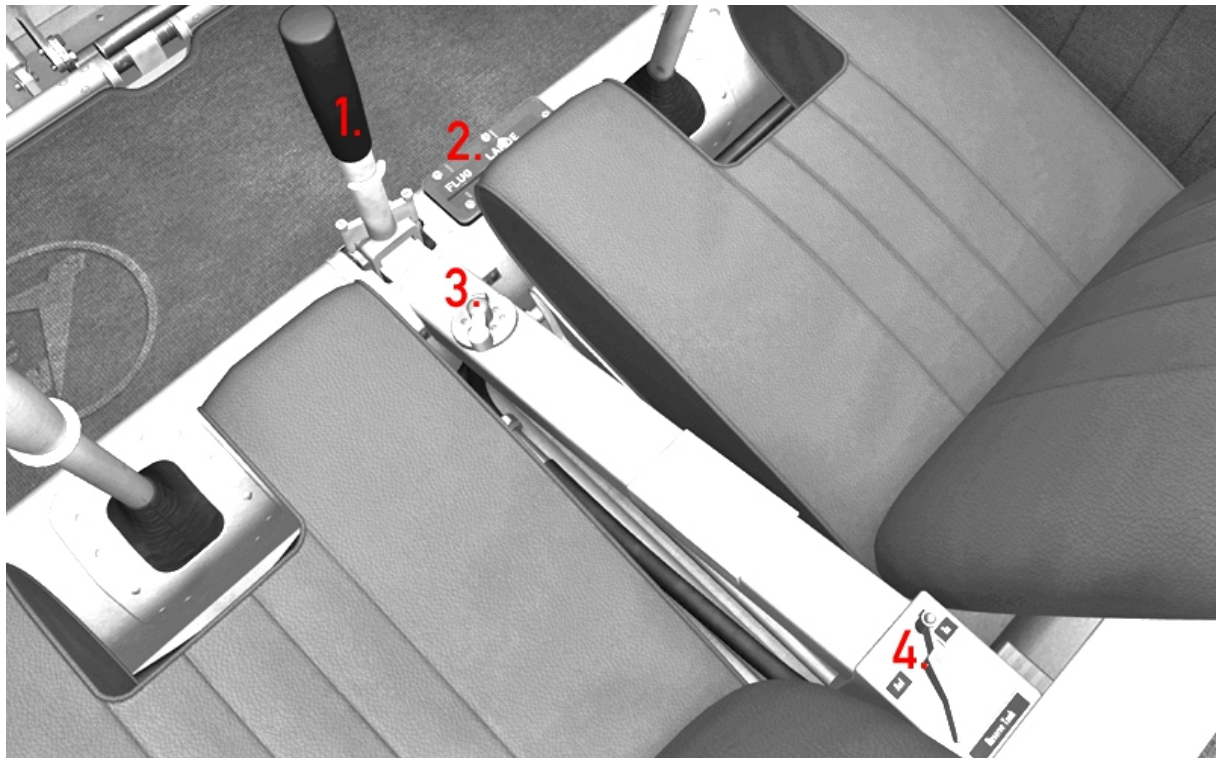


Virtual Cockpit

1. Mouse area Megahertz range
2. Mouse area Kilohertz range

Pic. 4

Overview Center Console



- 1. Gear Ratchet
- 2. Gear Indicator

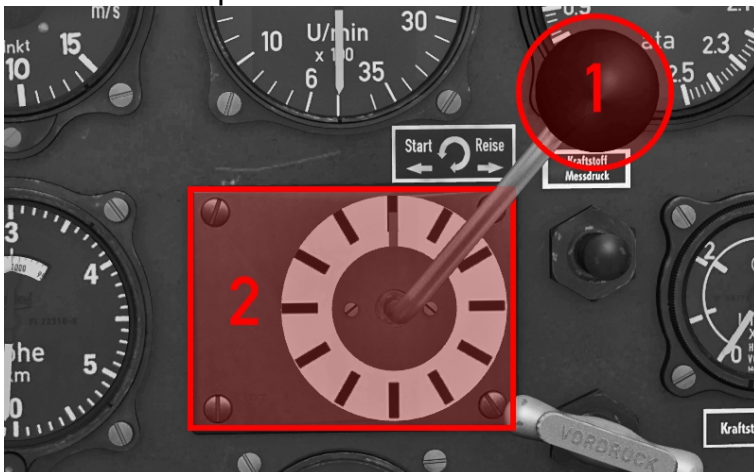
- 3. Fuel Tank Selector
- 4. Reserve Tank Valve

Propeller Pitch Lever

The Bf 108 Cockpit shows certain extras that might take some getting used to by today's pilots. Most prominent feature is the massive prop pitch lever at the center of the panel. For generations of Bf 108 pilots this „coffee grinder“ was and is something of a love-hate-affair.

It requires permanent attention and action during the various stages of flight. Especially after takeoff it can cause some heated moments when the lever calls for action almost simultaneously to operating the gear ratchet, the flaps and the trim wheel.

Pic. 5 **Prop Pitch Lever**



Operation by keyboard shortcuts is not supported.

There are two ways to operate the lever with the mouse:

1. The lever knob. Left-click and drag left or right.
2. The casing of the prop pitch lever. Hold the mouse over it and turn the mouse wheel.

Guidelines:

Takeoff 12:00 Position, all the way counterclockwise, 2100 rpm max.

Climb: 3:00 Position clockwise, 2000 rpm.

Cruise: 12:00, a full revolution clockwise, 1800 rpm.

Landing: like takeoff, fully counterclockwise, 2000 rpm.

The actual settings for the various stages of flight depend on actual airspeed and engine power setting so these guidelines are just rough estimates. The propeller adjustments should be made according to the indicated rpm on the Tachometer.

Information for the „full real“ mode:

The operational limits of the propeller and the engine should be taken seriously. Abuse can cause malfunctions or total failure. Exceeding the max allowed RPM can cause prop gear damage or total failure. The propeller may tend to wind-mill during steep descents. In that case decrease glide angle and adjust the propeller to use lower RPM.

RPM above 2100 are harmless for a short period of time.

RPM in excess of 2600 are to be avoided under any circumstances.

Engine

The carburetor needs to be pressurized by hand prior to starting the engine using the startup pressure pump (Pic. 1, Pos.25).

Left-click and hold the pump until it is fully pulled, then release the mouse. Repeat several times until fuel pressure is well within the boundary markers (Pic 1, Pos.19, left needle)

A cold engine needs to be primed prior to starting using the primer pump (Pos.24, Pic. 1). One or two strokes are usually sufficient. At cold weather use proportionately more strokes but never more than 5.

Information for the „full real“ mode:

The operational limits of the propeller and the engine should be taken seriously. Abuse can cause malfunctions or total failure.

The warmup run should be performed as per the checklist at low RPM. Too high RPM while the oil has not gained a certain viscosity may result in a stuttering engine or in worse case in a total engine failure. Especially at cold weather avoid idling for too long as it may cause the engine to shut down. Exceeding the max allowed oil temperature of 90°C for too long, for instance during long climbs, may result in loss of power, stuttering or in worse case in total engine failure. The max allowed power rating of 0.95atm/ 1 minute (28.425inHG/ 1 minute) is repeatable after a certain time of regeneration, however exceeding the max allowed full power setting of 1 minute for a considerable amount of time in a row may cause engine failure.

Fuel Feed

The aircraft is equipped with 5 fuel tanks holding a total of 58 gallons of fuel.

- Two in forward wingroot, 12.5 gal each.
- Two in rear wingroot, 8.59 gal each.
- Auxiliary Tank aft of storage compartment, 15.85 gal, thereof 5.28 gal Reserve.

The fuel tank selector (Pos.3, Pic. 4) is basically always at Position 1.

Fuel is drawn from all tanks equally.

To draw the 5.28 gal reserve fuel, open the reserve fuel valve (Pos.4, Pic. 4) and switch the fuel selector to Position 2.

Position 3 like Position 1, fuel is drawn from all tanks. Use in the event of a fuel pump failure.

Mouse functions of the fuel selector:

Left-click: toggle up through the positions.

Right-click: toggle down through the positions.

Fuel Indication

The Messerschmitt 108 is equipped with a manual/pneumatic fuel measuring apparatus. Fuel is indicated reliably in level flight only.

Indicating forward fuel tank content:

Fuel Indication Selector (Pos.23, Pic. 1) to position 1 „Tank I“.

Pull Air pump (Pos.17, Pic. 1) fully (left-click and hold).

After release the fuel content will be indicated for a couple of seconds on the fuel indicator's outer dial (Pos.18, Pic. 1) .

Indicating rear fuel tank content:

As before, with Fuel Indication Selector (Pos.23, Bild 1) to position 2 „Tank II“.

Rear fuel tank content is indicated on the fuel indicator's inner dial.

Indication of the auxiliary tank content is not possible.

Special FS Functions

Pic. 6

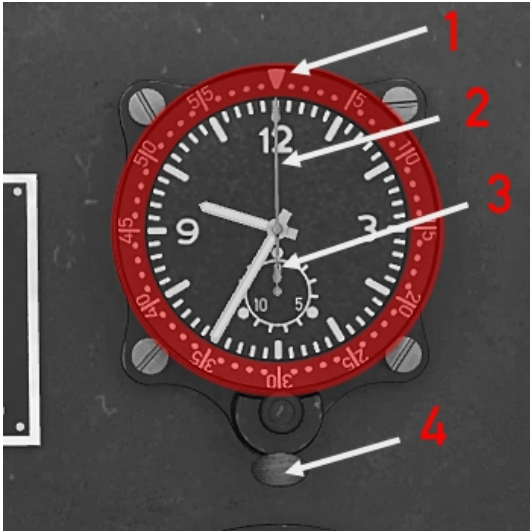
FS-Icons



The Icons provide access to commonly used FS features as well as to a custom feature:

1. Hides the Icons. Click the empty space to show the icons again
2. Checklist/Kneeboard
3. Inflight Map
4. ATC-Window
5. GPS-Window
6. Show/hide stickers with international units in knots, feet and inches of mercury on the most important flight and engine gauges

More VFR Panel Gauges



Blind Flying Clock Bo-UK 1, FI 23885

1. Swivel. Adjust the zero marker to be in line with the minutes needle, gather elapsed time directly from the swivel

2. Stopwatch Seconds Needle

3. Stopwatch Minutes Needle. One revolution equals 15 Minutes

4. Stopwatch Switch:

1. Click: Stopwatch is running.

2. Click: Stopwatch on hold.

3. Click: Stopwatch Reset.



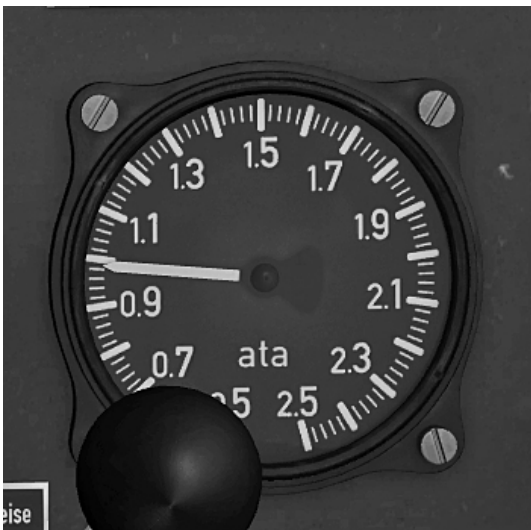
Wiskhey Compass FK 38, FI 23233



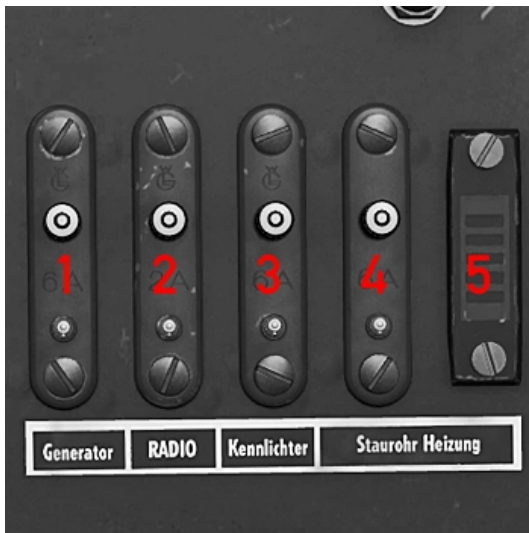
Variometer FI 22384
Range: 15 – 0 – 15 m/s



RPM Indicator, FI 20222-3
Range 0 – 3600 RPM



Manifold Pressure Indicator, FI 20555
Range 0 – 2.5 Atmospheres



Switches

1. Generator
2. COM-Radio
3. Position Lights
4. Pitot Heat
5. Pitot Heat Indicator



1. Battery Switch

2. Magnetos

- Pos. 0 : Ignition Off
 Pos 1 „M1“: left Magneto
 Pos 2 „M2“ : right Magneto
 Pos 3 „M1+2“ : both Magnetos

Left-click to toggle up,
 right-click to toggle down



Airspeed Indicator

Swiss Post War Production model

Range: 0 – 350 kph



Turn Coordinator Lg 14r, FI 22402

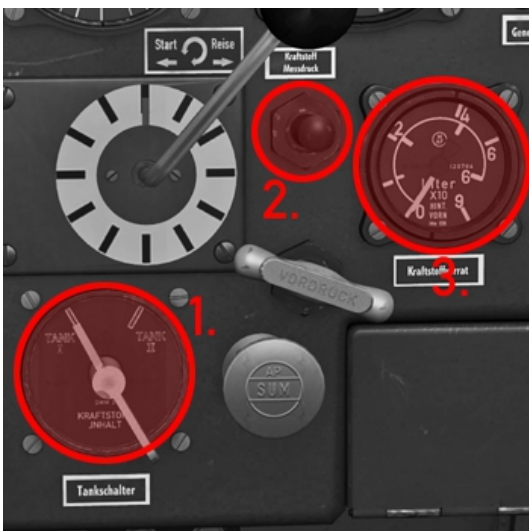
One needle width deviation equals a standard three-minutes-turn



Altimeter, FI 22322

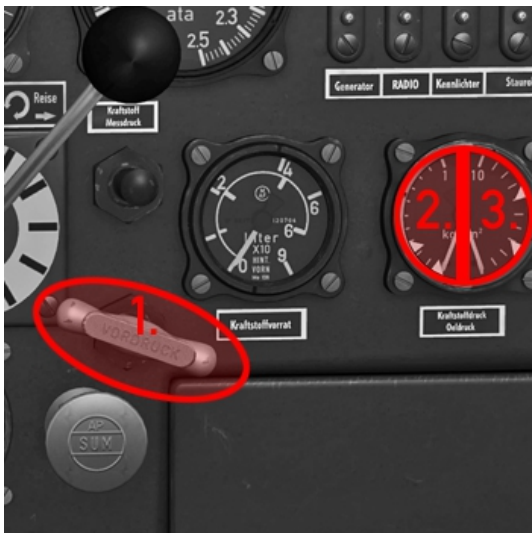
0 – 6000 Meters

Kohlsman-knob for calibration purposes.



Fuel Indication Equipment

1. Fuel Indication Selector
Tank I = forward Tanks selected
Tank II = rear Tanks selected
2. Air pump
3. Fuel Indicator
outer Dial: forward Tanks
inner Dial: rear Tanks



1. Startup Pressure Pump

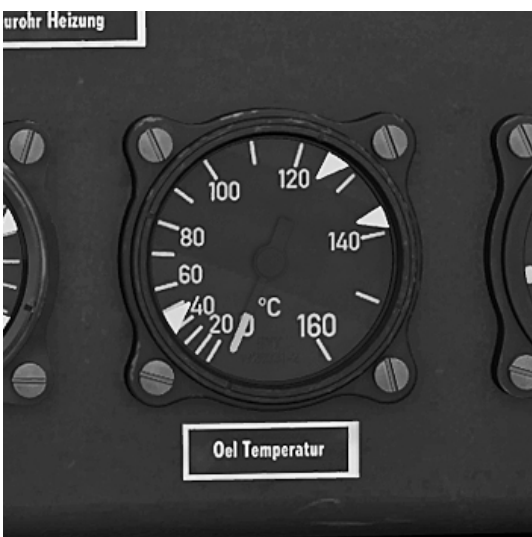
Multi-Pressure Indicator FI 20512-1

2. Fuel Pressure
3. Oil Pressure

Operate Startup Pressure Pump several times before engine start until fuel pressure is well within the boundary markers.



1. Starter
2. Primer Pump



Oil Temperatur Indicator, FI 20331

Range 0 - 160°C



**Volt-Ampere-Meter,
FI 32502-3**

upper dial: Voltage

lower dial: Current in Ampere

V/A-selector at the lower right

The IFR Light Panel

The „IFR Light“ Panel does not depict an actual existing cockpit but is an attempt to provide modern navigation functionality by using as many historical gauges as possible while at the same time making use of as few modern instruments as possible.

Starting point was the Bf 108's historical blind flying panel with the addition of a Radio Navigation Indicator AFN-2, an electrical slave compass that also provides OBS functionality, an artificial horizon and some modern COM, NAV and Transponder radios and the option to drive the AFN-2 Indicator by the default GPS. ADF Gauges and Radios are not available.

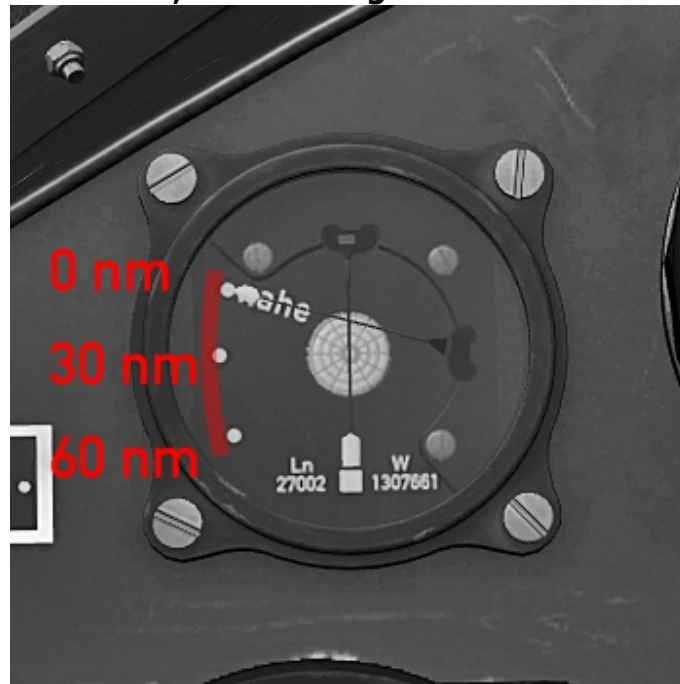
Overview IFR Light Panel



- I. relocated Pump for Fuel Indication
- II. relocated Primer Pump
- 1. Navigation Indicator AFN-2
- 2. electrical Slave Compass/OBS
- 3. Marker Beacons
- 4. Artificial Horizon
- 5. Radios
 - a. COM 1
 - b. COM 2
 - c. Transponder
 - d. NAV 1
 - e. NAV 2
 - f. ADF *New in Service Pack 2*

- 6. Radio Control Switches
 - a. Send COM 1 or COM 2
 - b. Receive active COM or both
 - c. NAV 1 or NAV 2 activ
 - d. NAV or GPS drives AFN-2
- 7. Switches
 - a. Position Light
 - b. Beacon Lights
 - c. Strobe Lights
 - d. Generator
 - e. Avionics-Master-Switch
 - f. Pitot Heat

AFN-2, Radio Navigation Indicator



The AFN-2 has two needles, one each for indicating distance to station and heading deviation. To-From Indication and Glideslope is not available. To calculate Glideslope use traditional methods utilizing Stopwatch, Altimeter, Variometer and Airspeed Indicator.

The horizontal needle indicates the distance to the active Station

- Horizontal needle at the lowest point of the dial: Distance to station is 60 nm or more
- Horizontal needle at the center point of the dial: Distance to station is 30 nm
- Horizontal needle at the upper point of the dial („nahe“ label): Distance to station is 0 nm

The vertical needle indicates heading deviation:

- Vertical needle deflects to the right: The aircraft is located right of the flight plan heading
- Vertical needle deflects to the left: The aircraft is located left of the flight plan heading
- Vertical needle points exactly at the central marker: The aircraft is on course.

The NAV/GPS switch toggles whether the AFN-2 receives its signal from the NAV Radios or from the GPS flight plan



NAV/GPS-Switch in the IFR Panel, right

Note: In NAV-Mode the heading is dialed on the Slave Compass so that the AFN-2's deviation needle receives a valid signal. In GPS Mode the AFN-2 receives it's signal directly from the stored GPS flight plan. However, for better orientation you should still dial the heading on the Slave Compass.

Electrical Slave Compass/OBS



FI 23334, small version for fighter aircraft



ADF indicator visible *New in SP 2*

To dial the OBS Heading, turn the compass rose until the desired heading is in line with the tall marker at the top („points North“). The actually flown heading is indicated by the aircraft symbol at the center of the gauge.

Mouse usage:

- Click the compass glass and drag left or right
or
- Turn the mouse wheel

New in Service Pack 2

North on the compass rose always points to the top 12:00 when the ADF radio is switched on. At the same time the ADF indicator will become visible.

The aircraft is on the selected ADF course when the indicator points exactly to the north.



Artificial Horizon, Lgab8,
simple design without caging

Range:

Bank $\pm 100^\circ$

Pitch $\pm 65^\circ$

In „full real“ mode, exceeding the range will cause temporary incorrect indication or failure. Depending on the severeness of the abuse it can take up to 15 minutes before the horizon returns to reliable operation.

Radios



COM 1 & 2 Radios

1. Mouse area Megahertz range
2. Mouse area Kilohertz range



Transponder

Four mouse areas dial the Transponder digits



ADF Receiver *New in Service Pack 2*

1. Turns on the ADF indicator on the electrical compass (*see page 25*)
2. ADF Frequency Dial
3. ADF Ident



NAV 1 & 2 Radios

1. Mouse area Megahertz range
2. Mouse area Kilohertz range
3. VOR Ident Toggle

Becker Radio Popup Window *New in Service Pack 2*

Turn on/off with „SHIFT + 2“





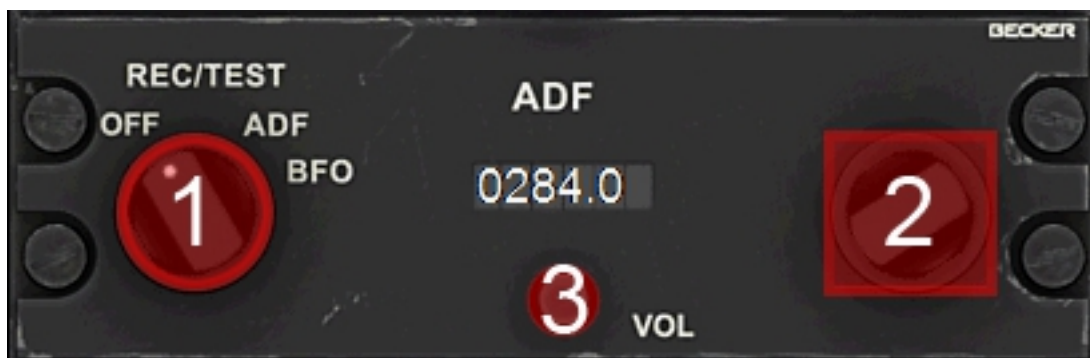
COMM 1 & 2 Radios

1. Avionics Main Switch
2. Mouse area Mhz selection
3. Mouse area Khz selection



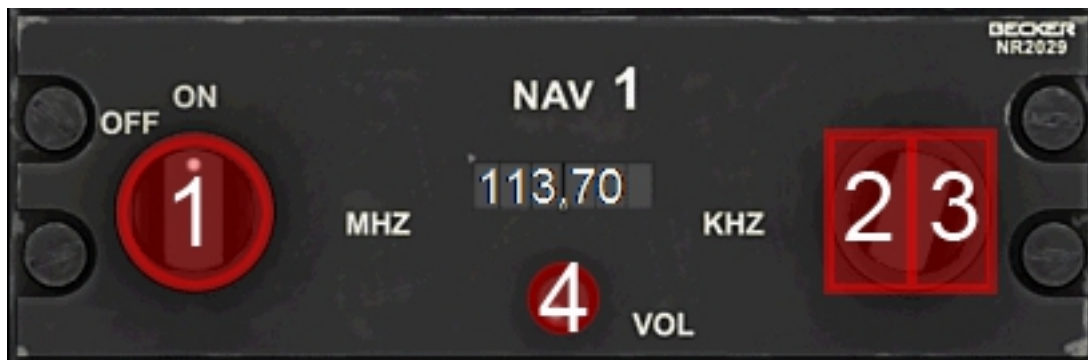
Transponder

1. Mouse area 1000s-digit
2. Mouse area 100s-digit
3. Mouse area 10ers-digit
4. Mouse area 1ers-digit



ADF Receiver

1. Turns on the ADF indicator on the electrical compass (see page 25)
2. ADF Frequency Dial
3. ADF Ident Toggle



NAV 1 & 2 Radios

1. Avionics Main Switch
2. Mouse area Mhz selection
3. Mouse area Khz selection
4. NAV 1 or 2 Ident Toggle

The Bf 108 Manager

Turn on/off with „SHIFT + 3“



The Bf 108 Manager provides quick access to often used functions.
Open the Manager by clicking Shift + 3.

In the header you can adjust the transparency of the interface or toggle between imperial and metric units. To adjust the transparency click the + – symbols repeatedly or turn the mouse wheel while holding the mouse pointer over it.

Adjusting Fuel and Payload:

The illustration in the upper left corner of the manager interface represents a topdown view of the aircraft with the nose pointing to the left. This can be used to quickly load the aircraft with fixed, suggested values. The blue circles represent the pilot and passenger stations, the blue bag represents the baggage in the storage compartment and the brown squares stand for the fuel tanks. A click in either of the blue circles loads the corresponding station with a suggested weight and at the same time makes the passengers visible in spot view. A second click fully unloads the corresponding station and also removes the passenger figure from the exterior aircraft model.

To adjust fuel and payload with more exact values, use the + - buttons below the aircraft illustration. Please note that passenger stations must be loaded with at least 120lbs/55Kg for the passengers to become visible in the cockpit.

Please make sure to load the four wingroot tanks with about equal volume percentages to ensure a proper fuel usage.

New in Service Pack 2:

- The buttons „LOAD Payload“ and „LOAD Fuel“ are removed from the interface. Changes are now directly passed on to FSX as you adjust fuel or payload.
- It is now possible to overload each payload station using the +/- buttons.

Cold Weather Pre-Heating

Starting an engine can be difficult or impossible at temperatures around or below the freezing point of water, because oil loses viscosity and metal parts such as throttles and Bowdells become „stiff“. Also the engine can take damage when it doesn't get warmed up properly. Aircraft engine compartments often become pre-heated in cold climates by means of an external heating source to facilitate cold start and to avoid engine wear. This operation can take up to one and a half hours in real life.

The Bf 108 Manager allows to pre-heat the engine compartment in about 40 to 50 seconds when the aircraft is parked „cold and dark“ on the ground.

The field „Cold Start Pre-Heat“ is located at the bottom of the Manager Interface. Ambient Air Temperature and Oil Temperature are displayed left hand for reference purposes. A button „Apply Pre-Heat“ is located to the right. Clicking it in a „cold and dark“ aircraft environment will make visible and audible a heater that is attached to the engine compartment by means of a hosepipe and sealed with a sponch. The engine compartment will be fully warmed up within 40 to 50 seconds up to a maximum of 30°C/86°F above the local air temperature. To stop the heater click the button „Turn Heater Off“. Start the engine as normal before it cools down again.

Payload Overview

This field shows information about the currently loaded fuel and payload weight, the headroom left to max gross weight as well as the buttons „LOAD Fuel“ and „LOAD Payload“.

Actions

The buttons in the field „Actions“ enable quick access to some important or often used functions:

Reload Aircraft: The fastest and savest way to repair the aircraft or to reload the systems.

Carburetor Heat: While the real Bf 108 is not equipped with a deice system, this function is implemented as a „cheat“ in order to be able to use the Bf 108 simulation in cold climates. Enable Carburetor Heat if you experience power loss at high altitudes or at cold temperatures that can not be led back to engine overheat or overstress.

Left Canopy: Opens or closes the left canopy.

Right Canopy: Opens or closes the right canopy.

Cargo Door: Opens or closes the cargo door located aft of the cockpit.

Folding Wings: Folds or unfolds the wings when the aircraft is on the ground.

New in Service Pack 2

Cold and dark: Turns all switches and levers off.

Paint Schemes

D-EBFW, Werknummer 1561, build in 1937, privately operated and widely restored to historical conditions, painted in late 1930s Messerschmitt factory blue. The oldest airworthy Bf108, infact the oldest airworthy Messerschmitt aircraft in the world. The official registration code is D-EBFW but it carries the historical registration D-IBFW of the 1930 Messerschmitt showcase aircraft that travelled as far as the USA, with special permit of the Luftfahrtbundesamt.



D-IGNY, Period Bf108B-1 of the German Aero Club. Elly Beinhorn scored a second place with this aircraft during the International Oasis Flight in Egypt, 1937. This aircraft originally showed factory colors but was painted in silver-grey exclusively for the Oasis race.



D-IOIO, probably the most photographically captured period Taifun, depicted in mid-1930's Messerschmitt factory colors.



HB-HEB. This Taifun served with the Swiss airforce from 1938 to 1959, was later on static display at the airport Zurich and is currently being restored to airworthy conditions.



RC+YZ, Werknummer 1561, now D-EBFW, in the colors of it's formar owner Henning Poulsen, Danmark.



SE-BZN, a former Luftwaffe Taifun that served in Finland and was sold to Sweden in 1955. It was sold to Germany in 1969 and crashed during an airshow at Berlin-Johannistal in 1995, killing pilot and co-pilot, German Astronaut Reinhard Furrer. Depicted is the aircraft in it's swedish livery.



'Elly Beinhorn' operated by the Lufthansa Foundation, one of three airworthy Me108 flying in Germany. This aircraft is equipped with the „IFR Light“ Panel.



D-ESBH, Bf108B-1 of the EADS Heritage Flight/Messerschmitt Foundation, the third of the airworthy German Taifuns. Like D-EBEI, this aircraft uses the „IFR Light“ Panel.



Credits

Project Lead, 3d Models, Interior Textures,
Programming, Dokumentation, Custom Sounds:

Mathias Pommerien

Exterior-Textures, Paintkit:

Alessandro Biagi

Aerodynamics, Engine Sounds:

AvHistory.org/Gregory Pierson

Simmconnect Modules

Jonathan Bleeker

Beta Tester:

Huub Vink

Roger Law

Roland „thunder100“ Berger

Günter „Guenseli“ Steiner

Klaus „ubootwilli“ Kratky

Hans-Jürgen „espenlaub“ Fischer

Sound Modul licensed by:

Bill Leaming

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