DIGITAL COMBAT SIMULATOR

Fw190D-9 DORA

for DCS World

Quickstart manual

THE FIGHTER COLLECTION

Eagle Dynamics

DCS SERIES

INTRODUCTION

The D for Dora variant of the famous Fw 190 fighter was nicknamed the Long-Nose by German pilots as well as the Allies. It was a departure from the radial-engine earlier variants and featured a more powerful inline engine, which gave the aircraft its characteristic long-nose shape compared to the iconic Fw 190A. While experts may still argue about the Dora's looks, the performance gains were clear. While the earlier variants excelled at lower altitudes but suffered higher up, at the most crucial altitudes where Allied bombers operated, the Long-Nosed 190 could easily match the best the Allies had to offer at all altitudes.

The Focke-Wulf Fw 190 D-9 fighter aircraft is a single-seat, low wing monoplane powered by a 12-cylinder liquid-cooled inverted Vee inline Jumo 213 A-1 engine. The engine is equipped with a single stage, two-speed supercharger and an automatic manifold pressure regulator. The engine spins a three blade constant speed propeller.

The powerplant consists of a Jumo engine that delivers approximately 1,776 horse power at 3,250 RPM. This could be further increased to 2,240 horse power by the use of MW-50 water-methanol injection. Maximum emergency power in level flight was 1,600 horse power at 3,250 RPM.

The fuselage is a semi-monocoque, all-metal structure. The forward section to the rear of the cockpit had four longerons and a horizontal partition dividing the cockpit from the fuel tank. The rear section of the fuselage was a conventional monocoque structure with light alloy frames. The entire structure is covered with light alloy stressed skin.

The wings comprised an all-metal structure with two main spars. Light alloy Frise-type ailerons with fabric covering are fitted. The split trailing-edge flaps operate electrically and depress 10 degrees for take-off and 60 degrees for landing.

The tail unit is an all-metal tailplane that continues through the fuselage and can be adjusted for incidence. The all-metal stressed skin tailplane is integral with the fuselage. The control surfaces are light alloy with fabric covering.

The armament consists of twin fixed synchronized 13mm Rheinmetall-Borsig MG 131 machine guns with 475 rounds per gun mounted above the engine cowling, and twin fixed synchronized Mauser MG 151/20 cannon with 250 rounds per gun mounted in the wing roots.

Specifications for the FW 190D are:

- Wing Span – 10.5 m
- Overall length – 10.24 m
- Empty Weight – 3490 kg
- Loaded Weight – 4830 kg
- Wing area – 18.3 square m

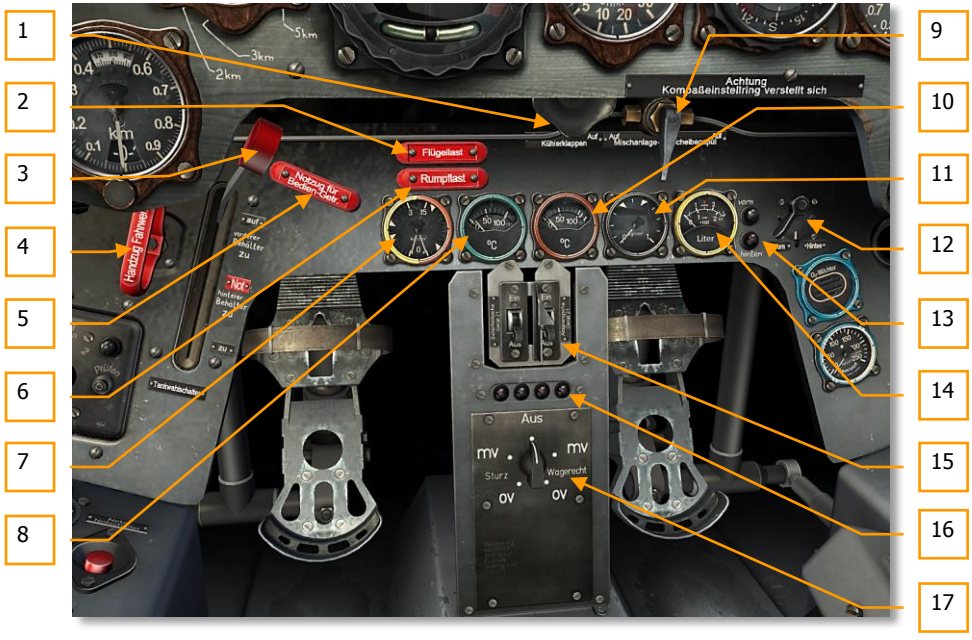
COCKPIT

Front Dash Legend

The front dash includes the instrument panel and the EZ 42 gunsight.

1. EZ 42 Gunsight
2. Ammo Indicators
3. Artificial Horizon / Turn & Bank Indicator
4. Airspeed Indicator
5. Altimeter
6. FuG 25a IFF Control Unit (not implemented)
7. Stick
8. AFN-2 Homing Indicator

9. Vertical Speed Indicator
10. Repeater Compass
11. Supercharger Pressure Gauge
12. Tachometer
13. Oxygen Flow Indicator
14. Oxygen Pressure Gauge
15. Oxygen Flow Valve
16. Pedals

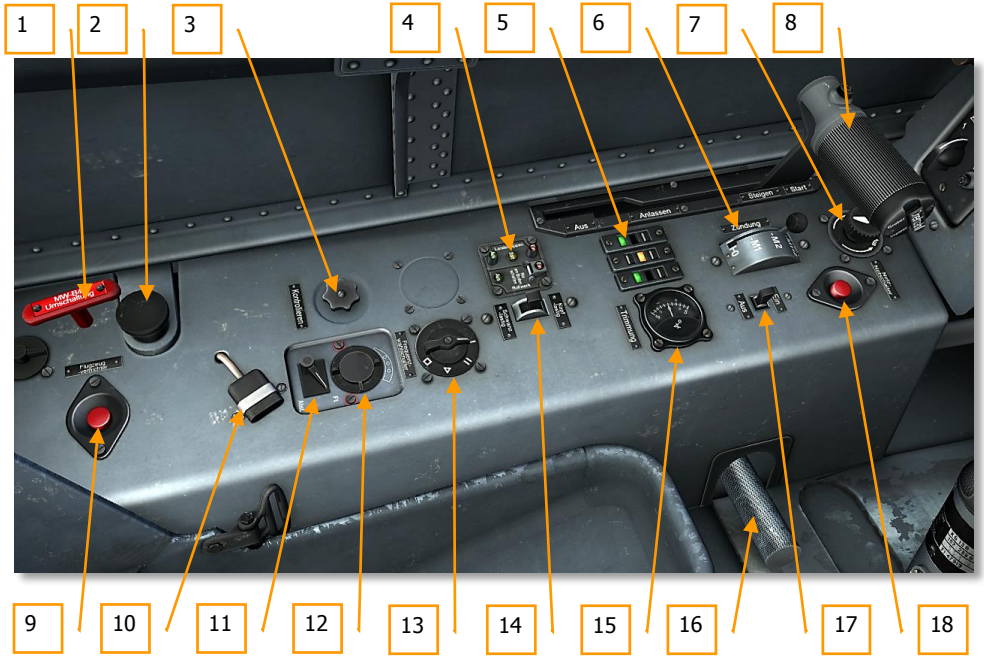


1. Manual Radiator Flap Control
2. Emergency Wing Load Release
3. Fuel Tank Selector Lever
4. Landing Gear Manual Release
5. MBG Emergency Mode Handle
6. Emergency Fuselage Load Release
7. Fuel & Oil Pressure Gauge

8. Coolant Temperature Gauge
9. Cold Start and Window Rinsing (not implemented)
10. Oil Temperature Gauge
11. Water/Methanol Pressure Gauge
12. Fuel Gauge Selector Switch
13. Fuel Warning Lights
14. Fuel Contents Gauge
15. 21-cm Rocket Control Unit
16. Disposable Load Indicator Lights
17. Bomb Fusing Selector Unit

Left Side Legend

The left-hand side includes engine controls.

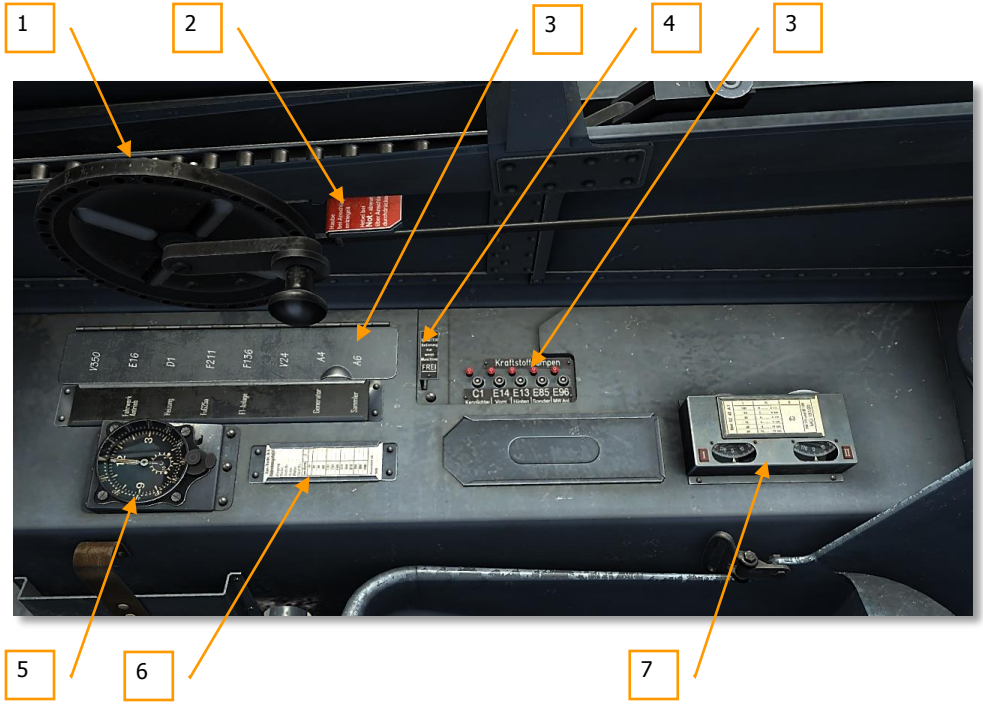


1. MW-50 to Fuel Handle of water-methanol tank

2. Primer Pump Handle
3. FuG 16ZY Fine Tuning
4. Landing Gear and Flaps actuation buttons
5. Landing Gear (left and right) and flaps (center) indicators
6. Ignition (Magneto) Selector Switch
7. Instrument Panel Lighting Dimmer Control
8. Throttle Lever
9. Radio self-destruction button (not implemented)
10. Heated Suit Connector (not implemented)
11. FuG 16ZY Communications - Homing Switch
12. Headphone Volume Control
13. FuG 16ZY Frequency Selector
14. Horizontal Stabilizer Trim Switch
15. Horizontal Stabilizer Trim Indicator
16. Throttle friction knob
17. MW-50 Power Switch
18. Electric Kill-switch

Right Side Legend

The right-hand side includes electrical system circuit breakers, canopy and weapon controls and a flight clock.



1. Canopy Actuator Drive
2. Canopy Jettison Lever
3. Circuit Breakers Panels
4. Starter Switch
5. Flight Clock
6. Plate of compass variations
7. EZ 42 Gunsight Adjustment Unit

NORMAL PROCEDURES

Preflight checks and Engine Start

As soon as you enter the cockpit:

- Turn on all circuit breakers on forward circuit breaker panel:
  - Flaps, Trimmer, Artificial Horizon [LWin – 1]
  - Landing Gear [LWin – 2]
  - Pitot Heating [LWin – 3]
  - FuG 25a [LWin – 4]
  - FuG 16ZY [LWin – 5]
  - Instruments, Instruments Lighting, Gunsight, Compass, Starter [LWin – 6]
  - Generator [LWin – 7]
  - Battery [LWin – 8]
- Check fuel in both tanks with Fuel Gauge Selector Switch. To right [RAlt – T], to left [RCtrl – T]

- Ignition (Magneto) Selector Switch to M1+2 position. To forward [End], to back [RShift – End].

- MBG Emergency Mode Handle in automatic mode. Pushed in position (check). [RShift – M]

- Fuel Tank Selector Lever in "auf" (open, full up) position. Up [T], down [RShift – T].

- Switch on fuel pumps with additional circuit breaker panel:
  - E14 Forward tank pump [RWin – 2]
  - E13 Rear tank pump [RWin – 3]
  - E85 External tank fuel pump if external tank is connected [RWin – 4]
  - E96 MW50 if necessary [RWin – 5]

- Close canopy. Several times [LCtrl-C].
- Set throttle lever to "Anlassen" (Engine Start / Idle) position. [RALT – Home]

- Press starter switch about 15…20 seconds to flywheel spin-up. Press and hold [Home].

- After flywheel spin-up pull up starter switch for engine start. Press and hold [RCtrl – Home].
- Release starter switch as soon as engine starts.

Engine Warmup

1. With closed cooling flaps run engine at about 1000…1200 RPM until oil entry temperature reaches 40°C.
2. Slowly increase towards 1800 RPM, until coolant exit temperature has reached 60-70°C.

Stopping the Engine

At 1200 RPM let engine cool down, alternately switching M1 and M2. Keep coolant temperature below 100ºC, otherwise danger of thermal evaporation.

In warm weather, open all cooler flaps already during landing flare, when in cold weather during taxiing off. When stationary retard throttle lever and run engine at 1600-2000 RPM for some time in order to achieve uniform cooling. Stopping above coolant temperature above 120°C will generally lead to coolant fluid loss. Pull throttle lever beyond idle indent position with [LALT – End] keys, switch off ignition, close fuel shutoff valve.

Taxiing

Coolant temperature below 120°C, RPM below 1000 only for short periods permissible, keep taxi as short as possible. Release tail wheel lock by pushing flight stick a bit forward, otherwise turning is impossible. Brakes check by checking one at a time only after release of tail wheel lock.

In order to prevent tire damage by braking induced heat apply as little braking as possible.

On line up for take-off allow the airplane to roll a short stretch straight ahead in order to ensure straightness of the tail wheel.

Preflight Check

Prior to takeoff, perform the following preflight check:

- Primary controls:
    - Controls – Check the stick and rudder controls to ensure they operate without binding. Watch the control surfaces for correct response.
    - Horizontal Stabilizer Trim Indicator – 0

- Instruments and switches:
    - Altitude Indicator set.

    - Desired heading set.

- Artificial Horizon Uncaged.

- All instrument readings in desired ranges.
- All switches and controls at desired positions.

- Fuel system:
  - Fuel Tank Selector Lever in Open (Auf) position (full up).
  - Fuel pump's circuit breakers ON.
- Flaps:
  - Flaps set for takeoff, pressed "Start" button.

Takeoff

Follow the below procedure to perform a normal takeoff:

- Be sure takeoff area is clear and check final approach for inbound aircraft.
- Release brakes and line up for takeoff.
- Advance throttle smoothly and steadily to Takeoff Power from 3150 to 3300 RPM. Torque effects appearing from a sudden onset of power can lead to a loss of directional control of the aircraft.
- Correct take-off trajectory with rudder.

Pushing the stick forward unlocks the tail wheel, thereby making steering difficult. The best takeoff procedure is to hold the tail down until sufficient speed for rudder control is attained and then to allow the tail to rise slowly. Some rudder input may be necessary to maintain heading as the tail is lifted and stabilized in a takeoff attitude.

Avoid sudden bursts of power during takeoff! Make it smooth and steady.

Climb

Perform the following steps once a safe takeoff is accomplished:

- Raise the landing gear by retracting the safety switch over the "Ein" (Up) button and pressing the button. Ensure gear is properly raised and the red "Ein" light illuminates.
- Flaps up with "Ein" (Up) button.
- Check coolant and oil temperatures, and oil pressure.
- After reaching safety altitude, throttle back to 3000 RPM.
- Trim the aircraft for climbing attitude as necessary.
- Check all of your instruments for proper function within normal parameters.

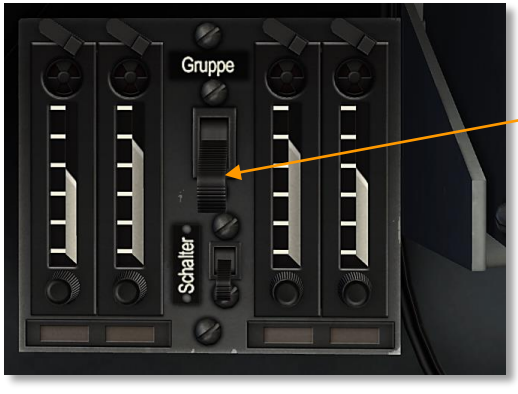
COMBAT EMPLOYMENT

In this section, we will overview weapons employment procedures for the Fw 190 D-9.

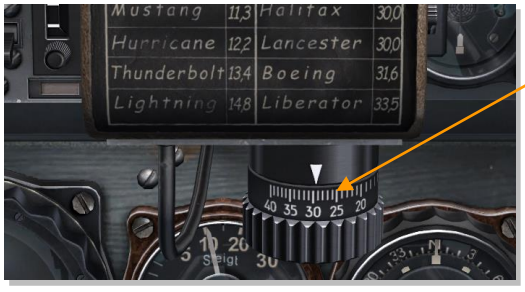
Guns

1. Turn On EZ 42 Gunsight Power Switch. [M]

2. Turn on Guns Master Arm Switch. [C]

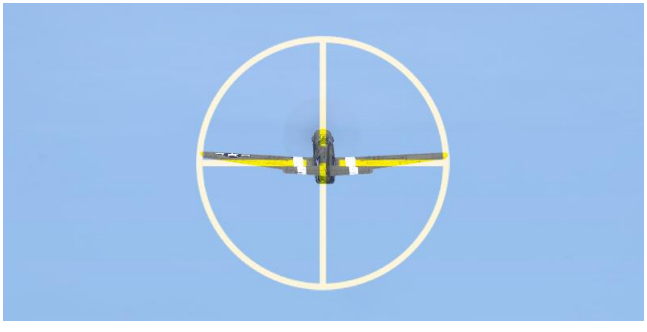


3. Set the target's wingspan. Increase [,], decrease [/].



4. Set the range to target via twist grip on the throttle. Increase [;], decrease [.].

Fly the aircraft so that the target appears within the reticle circle and rotate the throttle twist grip until the diameter of the reticle circle corresponds to the target size.



Continue to frame the target with the reticle circle by rotating the twist grip as range changes. Track the target smoothly for one-two second; then fire.

Bombs

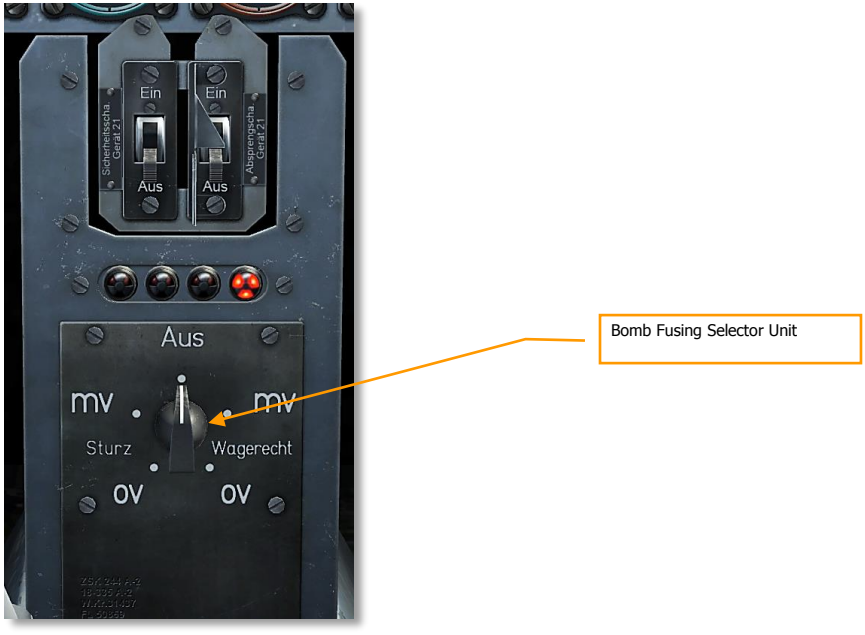
Releasing Bombs

The following is a standard procedure for releasing bombs:

1. Turn On EZ 42 Gunsight Power Switch. [M]

2. Set the range to target to 0 with the twist grip on the throttle to fix gunsight reticule. Increase [;], decrease [.].

3. Set the Bomb Selector Switch to the proper profile and delay position. To left [LShift – B], to right [LCtrl – B].



4. Press the Bomb-Rocket Release button [RALT-Space] on the control stick to release bombs.

Note. Bombs may be released when the aircraft is in any pitch attitude from a 30-degree climb to a vertical dive.

Do not release bombs when you are sideslipping more than 5 degrees in a vertical dive. Doing so may collide a bomb and the propeller.

Emergency Bomb and Drop Tank Release

The Bombs may be jettisoned with the Jettison Fuselage Stores handle, located below the main instrument panel.

"Rumpflast" - Jettison Fuselage Stores. [LCtrl – R]