



B-17G FLYING FORTRESS

OPERATIONS MANUAL

Version 1.0.3

Flight Procedures, Systems, and Legacy

Your companion for learning and flying one of aviation's most enduring aircraft.

MICRO PROSE

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This manual is part of the **MicroProse Heritage Valor Collection**. It offers pilots a reference to the B-17G's systems, features, and history, created to enhance the **Microsoft Flight Simulator** experience.



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SUPPORT

This product is currently in Early Access, which means that the community is helping it get better and better until it is fully released.

We want to give you the best and most accurate experience possible, but we need your feedback.

If you want to tell us about a bug, suggest a new feature or improvement, or even give us ideas for future products, please join us on

Discord: <https://discord.gg/EuS7GZjHfK>





THANK YOU FOR PURCHASING THE MICROPROSE B-17 FOR MICROSOFT FLIGHT SIMULATOR

Thanks for picking the B-17 Flying Fortress for Microsoft Flight Simulator. We are thrilled to welcome you aboard one of the most famous planes in aviation history on behalf of the whole MicroProse team. We can't thank you enough for your support.

This plane is the result of a lot of research, modeling, and hard work, all of which were fueled by love and enthusiasm. Our team worked very hard on this project to make something that honors the heroic crews who flew her and the fans who preserve her memory alive.



We realize how much these machines mean to you and how they touch the hearts of every pilot, whether they are real or virtual. That's why we've worked so hard to get every sound, feeling, and detail we could. We hope it shows.

We think that flight simulation is more than just a game; it's a way to connect with others. In the past and the present. In between history and the home cockpit. Thanks for letting us be a part of your journey. And thanks for keeping the tale alive.

STORY OF THE B-17

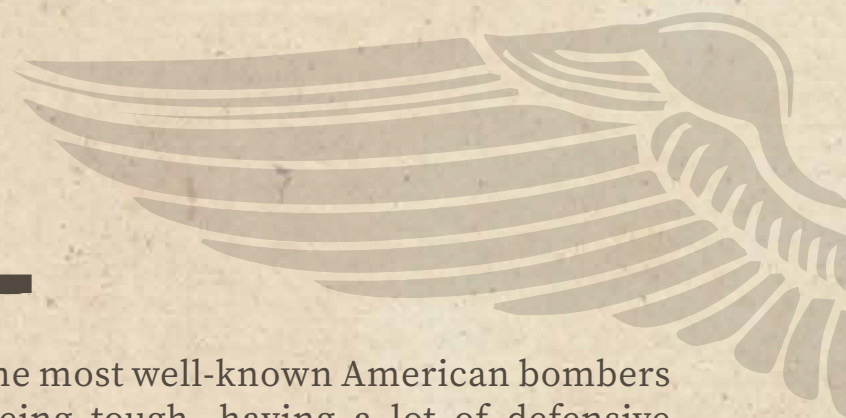
The Boeing B-17 Flying Fortress is one of the most well-known American bombers from World War II. It was known for being tough, having a lot of defensive weaponry, and being able to take a lot of damage and still make it home. The B-17 was a four-engine heavy bomber that Boeing built in the 1930s after the U.S. Army Air Corps asked for a multi-engine bomber that could carry more weight, fly faster, and go farther.

The first flight of the prototype was in 1935, and military officials were impressed by how well it flew and how new its design was. As tensions in Europe rose, production increased. By the time the U.S. entered World War II, the B-17 had become a key part of the U.S. strategic bombing campaign.

The Eighth Air Force was in charge of most of the B-17s that took off from bases in England. They bombed important places in Nazi-occupied Europe during the day, such as factories, rail yards, oil refineries, and more. These flights were dangerous because the crew had to deal with a lot of enemy fire and fighter jets. The plane had twelve to thirteen .50 caliber machine guns, which made it very hard to attack. Stories of damaged B-17s making it back to base became famous, giving the plane a reputation for durability and garnering it both awe and admiration.

During the war, more than 12,700 B-17s were made. There were many different types, but the B-17G was the most common. The G-model added a chin turret to protect against attacks from the front, making it the best variant of the plane.

The B-17 became an emblem of American aviation power and sacrifice, even though the B-24 and later the B-29 had longer ranges. It helped set the stage for modern strategic bombing and is now an important part of aviation history. A few B-17s are still airworthy today. Museums and private collectors fly and keep them in good condition to honor the crews who served on them.



PRODUCT FEATURES

It took a lot of work, study, and time to make the B-17 Flying Fortress for Microsoft Flight Simulator. The 3D model, the detailed, realistic texturing, and the immersive soundscape all honor the plane's past. We collaborated with dedicated professionals and groups who wish to preserve the B-17 narrative alive. This plane isn't simply a commodity; it's a means to celebrate those who love and know planes like this.

- ◆ High-fidelity flight model
- ◆ MSFS 2024 walk-around system
- ◆ High-quality hand-crafted 4K PBR textures
- ◆ Interior and exterior engine vibration effects
- ◆ Multiplayer animations
- ◆ Custom start-up and combustion smoke with multiplayer support
- ◆ 6 liveries (more to be released in the future)
 - ▶ Our Gal Sal (42-31767)
 - ▶ Silver Dollar (42-32090)
 - ▶ Fever Beaver (42-38047)
 - ▶ A Bit o'Lace (42-97976)
 - ▶ Humpty Dumpty (42-107233)
 - ▶ Sentimental Journey (44-83514)



- ◆ Custom, high-fidelity Wwise engine and cockpit sounds recorded from the real aircraft
- ◆ Aircraft and systems customization via in-sim clipboard
- ◆ Modern Optional Avionics (GTN650)
- ◆ Complete and complex electrical system with circuit-breakers
- ◆ Realistic-looking crew with simple animation
- ◆ Maintenance mode (post 1.0)
- ◆ Visible wear and tear
- ◆ Robust paint kit
- ◆ Developed in collaboration with Hangar Thirteen (hangarthirteen.org) and the 100th Bomb Group Foundation (100thbg.com)

SPECIFICATIONS

General characteristics

- ◆ **Crew: 10:**
Pilot, co-pilot, navigator, bombardier/nose gunner, flight engineer/top turret gunner, radio operator, waist gunners (2), ball turret, gunner, tail gunner
- ◆ **Length:**
74 ft 4 in (22.66 m)
- ◆ **Wingspan:**
103 ft 9 in (31.62 m)
- ◆ **Height:**
19 ft 1 in (5.82 m)
- ◆ **Wing area:**
1,420 sq ft (131.92 m²)
- ◆ **Empty weight:**
36,135 lb (16,391 kg)
- ◆ **Gross weight:**
54,000 lb (24,500 kg)
- ◆ **Max takeoff weight:**
65,500 lb (29,700 kg)
- ◆ **Aspect ratio:** 7.57
- ◆ **Powerplant:**
4 × Wright R-1820-97 “Cyclone” turbosupercharged radial engines, 1,200 hp (895 kW) each
- ◆ **Propellers:**
3-bladed Hamilton-Standard constant-speed propeller

Performance

- ◆ **Maximum speed:** 287 mph (462 km/h, 249 kn)
- ◆ **Cruise speed:** 182 mph (293 km/h, 158 kn)
- ◆ **Range:** 2,000 mi (3,219 km, 1,738 nmi)
with 6,000 lb (2,700 kg) bombload
- ◆ **Ferry range:** 3,750 mi (6,040 km, 3,260 nmi)
- ◆ **Service ceiling:** 35,600 ft (10,850 m)
- ◆ **Rate of climb:** 900 ft/min (4.6 m/s)
- ◆ **Wing loading:** 38.0 lb/sq ft (185.7 kg/m²)
- ◆ **Power/mass:** 0.089 hp/lb (150 W/kg)

Armament

- ◆ **Guns:** 13 × .50 in (12.7 mm) M2 Browning machine guns in 9 positions (2 in the Bendix chin turret, 2 on nose cheeks, 2 staggered waist guns, 2 in upper Sperry turret, 2 in Sperry ball turret in belly, 2 in the tail and one firing upwards from radio compartment behind bomb bay)
- ◆ **Bombs:**
 - ▶ Short range missions; internal load only (<400 mi): 8,000 lb (3,600 kg)
 - ▶ Long range missions; internal load only (≈800 mi): 4,500 lb (2,000 kg)
 - ▶ Max internal and external load: 17,600 lb (7,800 kg)

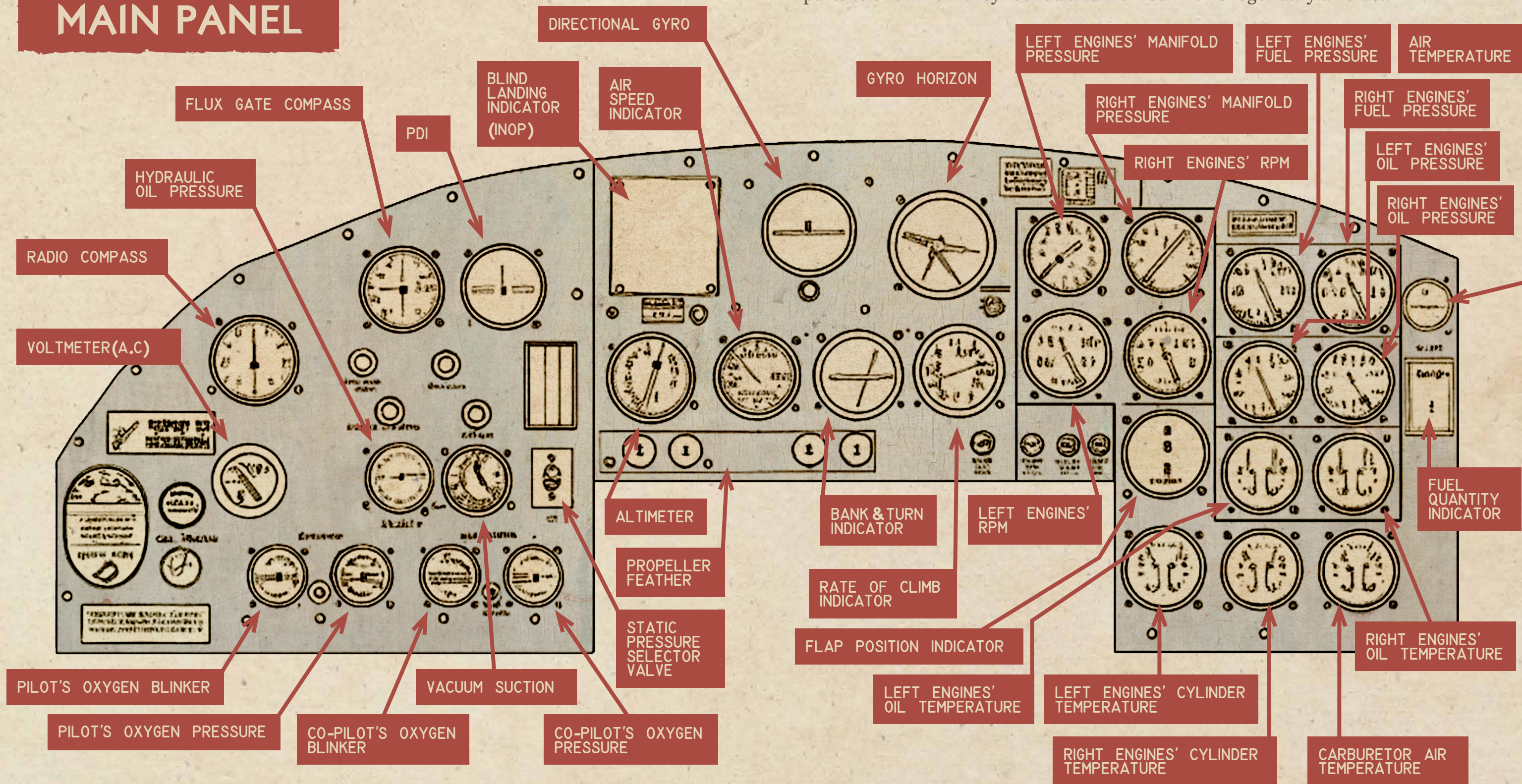


“She was a Stradivarius of an airplane...”

Colonel Robert K. Morgan, pilot of the Memphis Belle

PANELS AND INSTRUMENTS

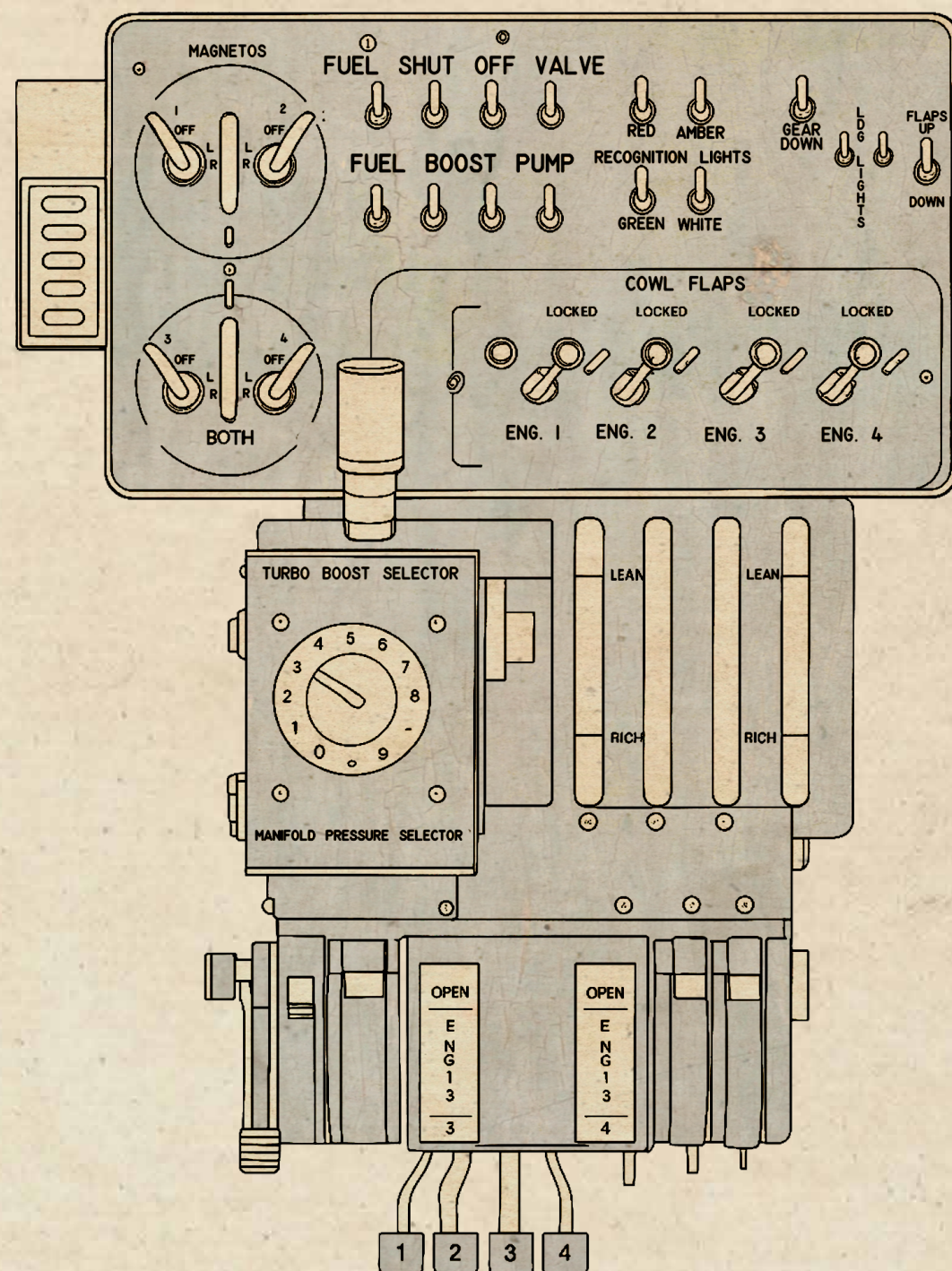
MAIN PANEL



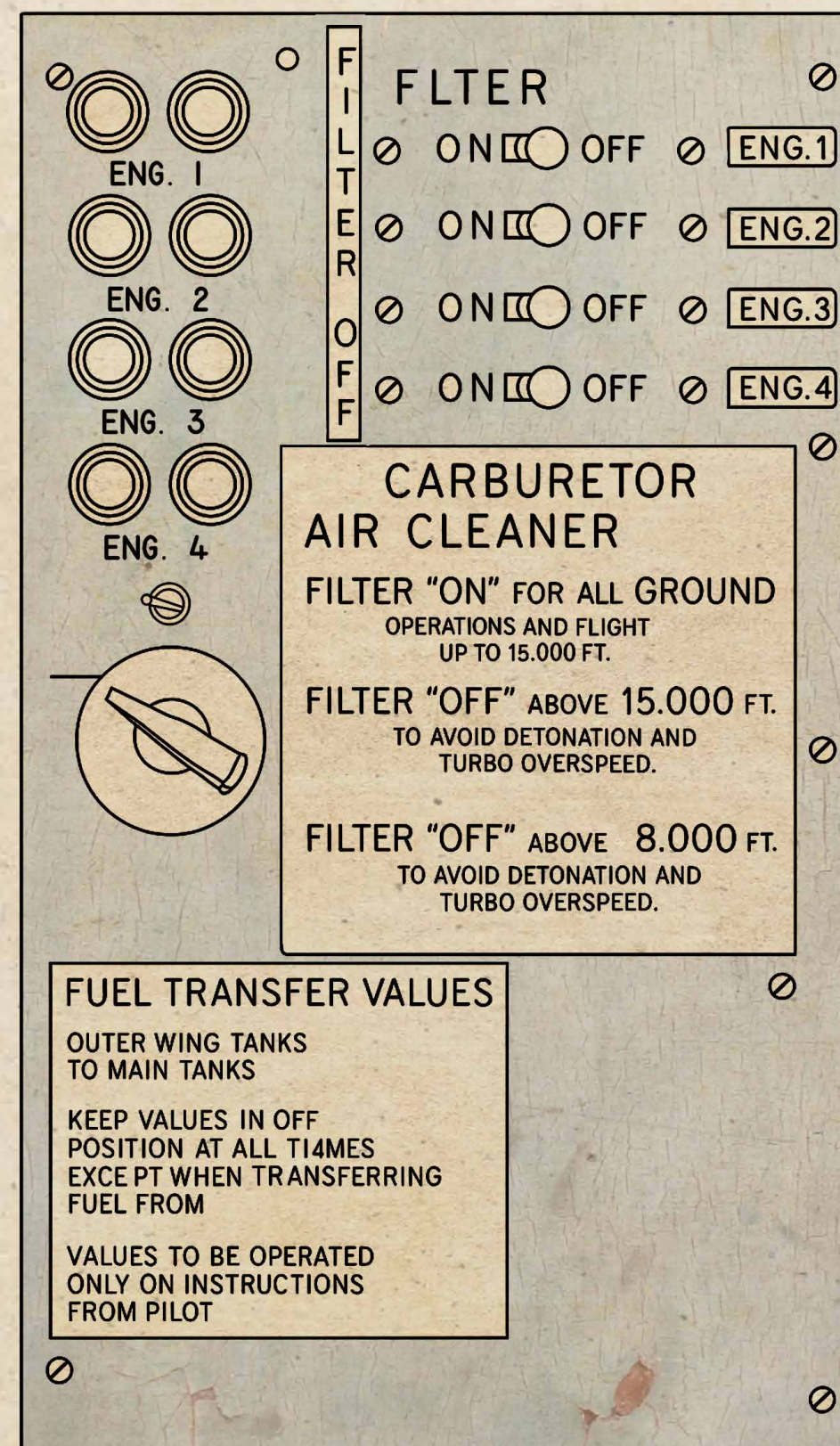
The B-17's cockpit is a fantastic example of how engineers made things function throughout the war. The crew had the knowledge and control they needed to keep the Flying Fortress in the air and on course because all of the dials, gauges, and switches were in the appropriate places.

This section will give you more information about the main instrument panel, the filter panel, the console, and the startup panel. We carefully replicated these parts to show how they looked and worked in this legendary aircraft.

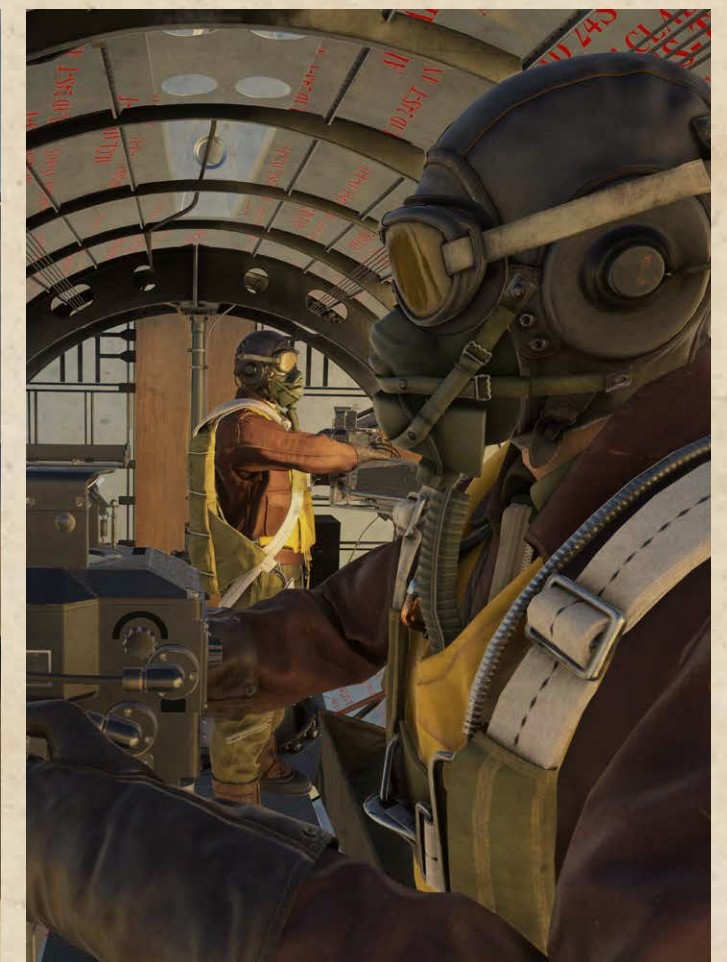
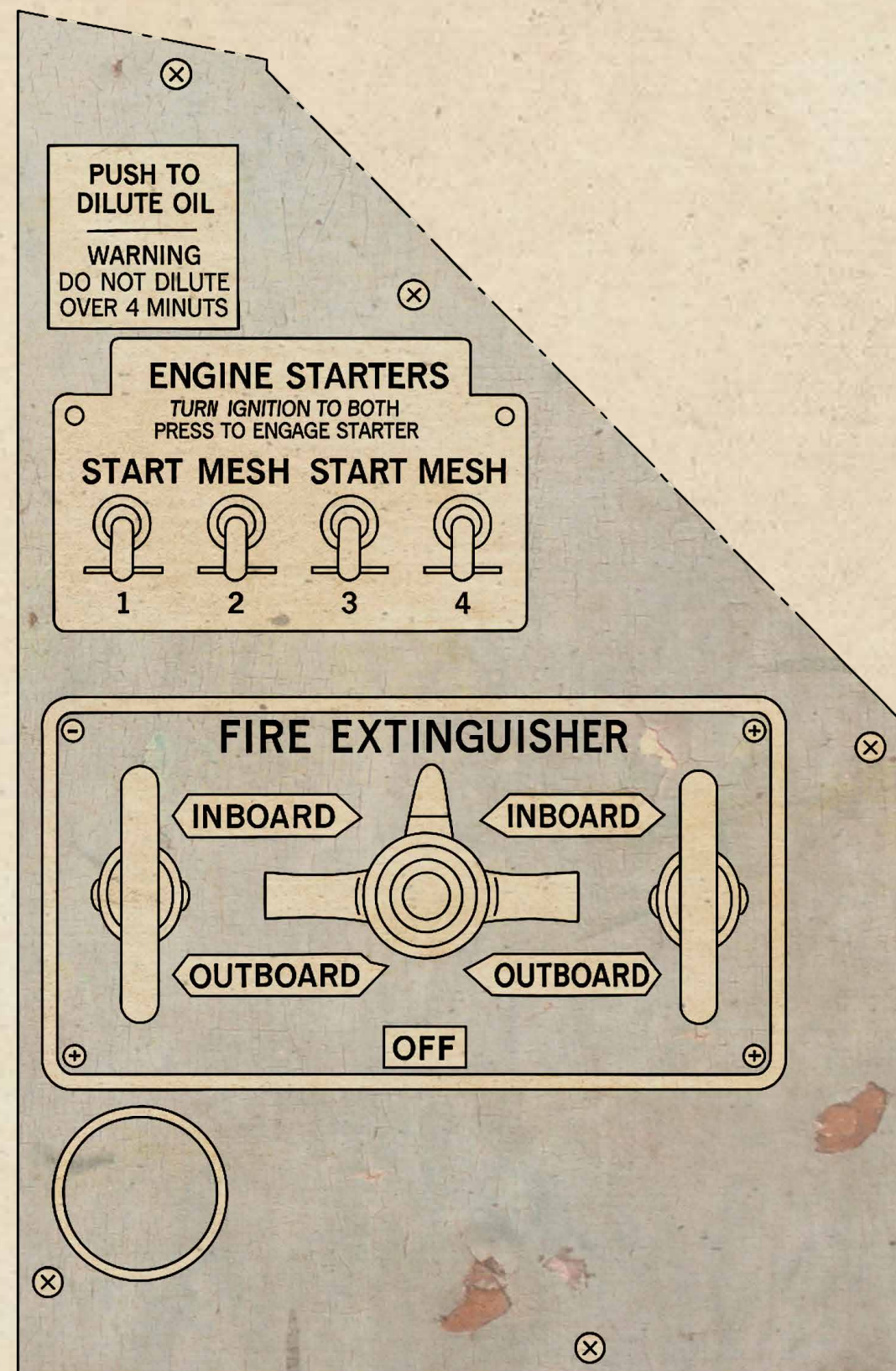
CONSOLE



FILTER PANEL



STARTER PANEL



COCKPIT LIGHTS

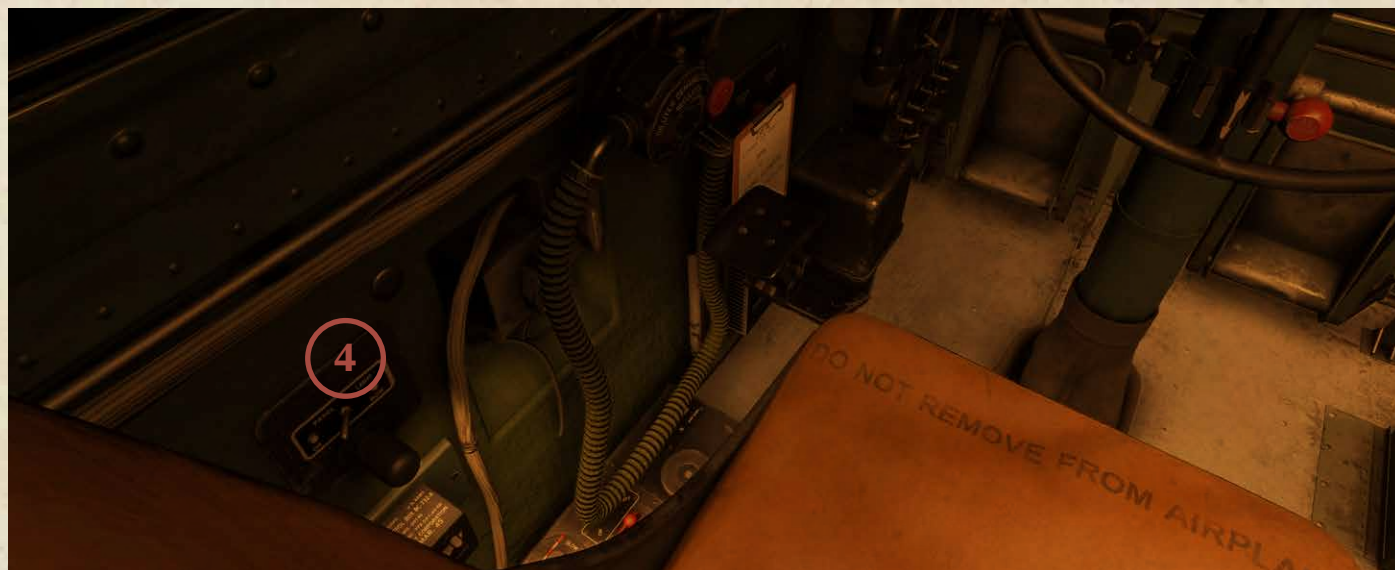
Inside the cockpit you will find a total of 5 interior light switches, 3 UV lamp potentiometers, and 2 exterior light switches.

Light switches

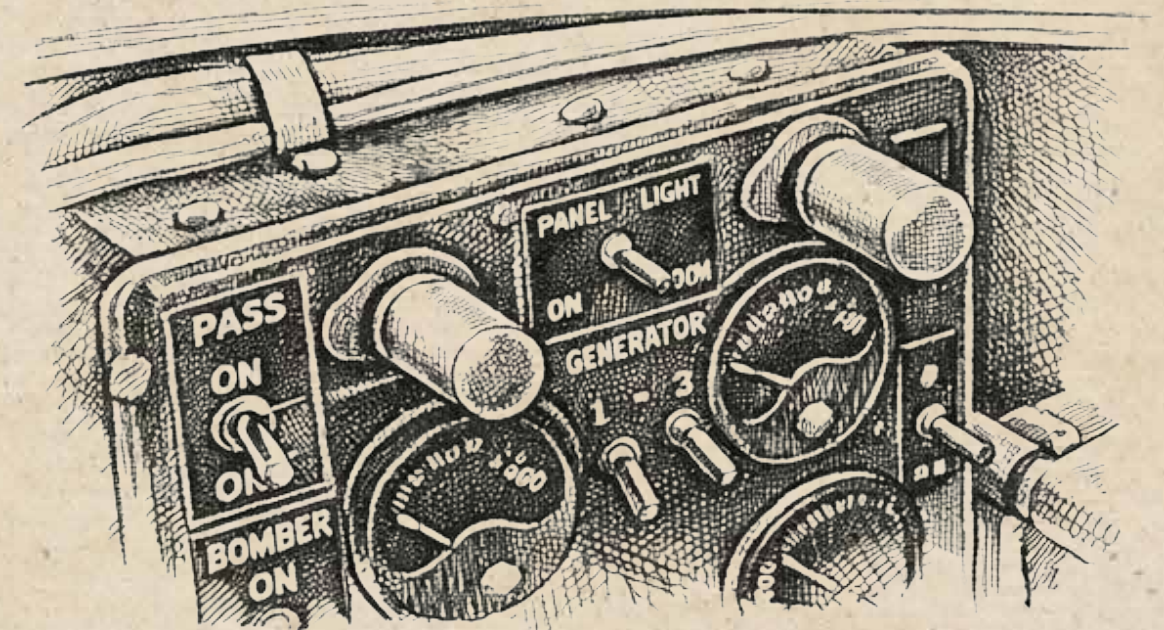
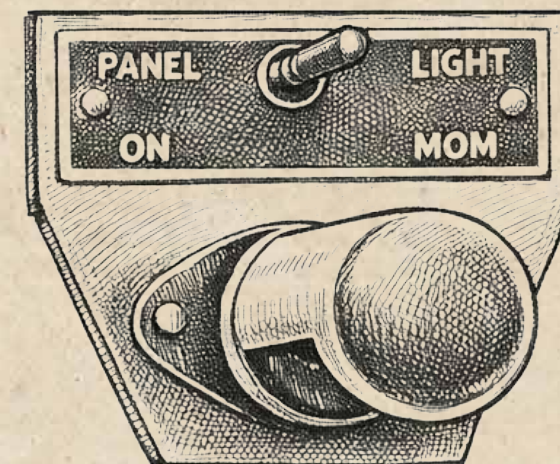
The pilot and co-pilot light switches are located on top of the glareshield (1, 2).
The electrical panel light switch is located at the top center of the electrical panel (3).



You will find another light switch to the left of the pilot's seat (4).



The dome light switch is located behind the dome light (5).



UV Lamps

The B-17G used UV lighting during night operations. Instrument faces and dial markings were treated with fluorescent paint that glows under UV light but is invisible in daylight.

This kept the cockpit dark, minimizing reflections off the windscreen and preserving crew night vision on long missions.



The UV lamp controls are located at the following positions:

- ▶ **1.** Left UV lamp knob — pilot side main panel
- ▶ **2.** Center UV lamp knob — pilot side main panel, below the left UV knob
- ▶ **3.** Right UV lamp knob — co-pilot side, below the filter switches

Landing Lights

The landing light switches (left and right) are located at the center of the console, next to the gear switch.



OPTIONAL GPS / TRANSPONDER

While the B-17G was built for wartime navigation and radio procedures, we know many pilots like to use modern tools when flying in Microsoft Flight Simulator 2024, especially for longer routes, online flying, or ATC.

Our B-17 includes the MSFS 2024 default GTN650, which can be enabled or disabled at any time.

The easiest way to access these options is through the in-sim clipboard. To activate it, find the clipboard hotspot on the left side of the panel (as described in the Clipboard section).

Once the clipboard is open, you can enable the GTN650. When enabled, it provides:

- ▶ A modern GPS for routing and situational awareness
- ▶ COM radio functions for easier communication handling
- ▶ An integrated transponder for ATC and online flying

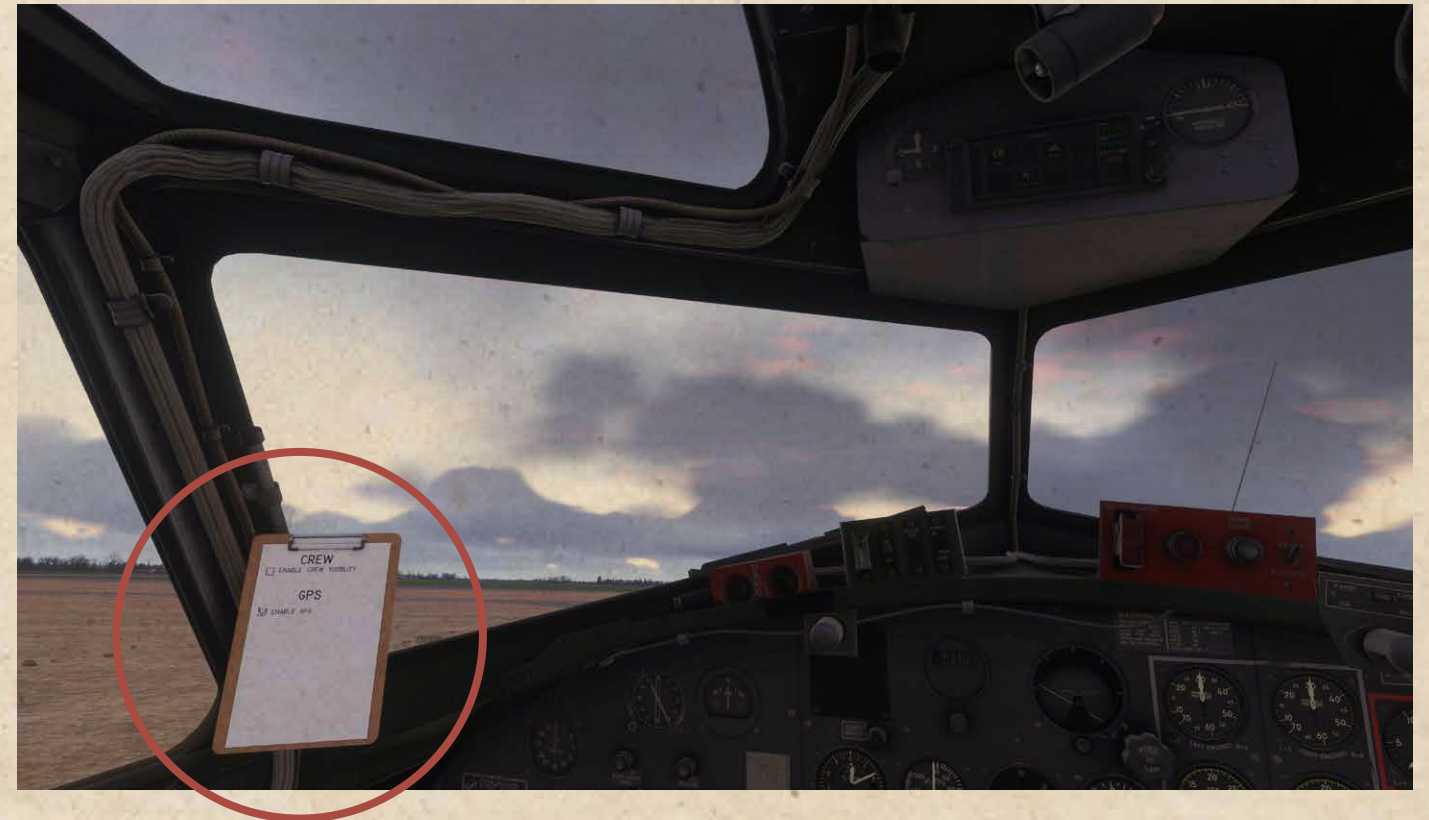
If you prefer a more period-correct cockpit, simply leave the GTN650 disabled and fly using the original equipment.

To access the GPS:

1) Open the clipboard by clicking on its hotspot.



2) Check the “Enable GPS” option.



3) The GTN650 will be available at the center top console.



FUEL MANAGEMENT

The B-17G Flying Fortress was built with great foresight when it came to fuel safety and endurance. There were 24 wing tanks in total, with each wing containing 12 self-sealing fuel tanks each.

These were built to protect fuel from leaking out and to minimize the chance of a fire if they were damaged in battle. If one bladder burst, it would simply lose its contents: 60 gallons instead of hundreds at once. This is a significant reason why the B-17 was able to get back home with a lot of damage.

In addition to the wing tanks, optional ferry tanks could be added to the bomb bay for long-range missions. This configuration allows the plane to fly great distances without any cargo and yet have enough fuel.

FUEL LOAD AND CONFIGURATION

The fuel system in Microsoft Flight Simulator can simulate the different fuel conditions. For a regular load of 8,000-pound of bombs, a fuel load of 77–78% is the standard battle setup.

If you remove the bomb weight inside the **Weight and Balance** menu and fill the tanks all the way up, the plane will be configured for ferry flights, with all its tanks, including the bomb-bay ferry tanks filled.

FUEL SYSTEM LOGIC

The engine tanks fuel their own engines first. After that, the Tokio tanks will then fill up their own engines. Finally, if there are any, the ferry tanks are then used. When you fill up with fuel, the engine tanks fill up first, then the Tokio tanks, and finally the ferry tanks.

This makes sure that the fuel expenditure during loading and in-flight is realistic, since the center of gravity changes as the weight changes during flight.

ONGOING REFINEMENTS

A lot of effort has been put into making the fuel system more realistic. The current version does a fair job of depicting how tanks are spaced out and how gasoline flows. However, future updates will strive to make it even better by:

- ▶ Improving sensitivity in the loading order
- ▶ Better correlation between bomb positioning and ferry tank positioning so that the changes in the fuel loading don't affect the Center of Gravity as much.



CLIPBOARD

The clipboard feature will be your hub for current and future customization and maintenance of the B-17G.
To activate it, find the hotspot on the left side of the panel as seen below.



Once you access it, you can then:

- ▶ Enable/disable crew visibility
- ▶ Show/hide the GPS
- ▶ Show/hide static ground elements
- ▶ Show/hide chocks



Please note that this is a work in progress. The current version is helping us set up the foundation for a more comprehensive system in the future.

CHECKLISTS

ENGINE STARTUP CHECKLIST

Before Starting Engines

- ▶ Chocks — **IN PLACE**
- ▶ Parking Brake — **SET**
- ▶ Cowl Flaps — **OPEN**
- ▶ Fuel Selector Valves — **MAIN TANKS** (ON for engine to be started)
- ▶ Fuel Booster Pumps — **ON** (for engine being started)
- ▶ Mixture Controls — **IDLE CUT-OFF**
- ▶ Propeller Controls — **FULL FORWARD** (high RPM)
- ▶ Throttle — **1/4 INCH OPEN**
- ▶ Magnetos — **BOTH**

Engine Start (One Engine at a Time)

- ▶ Propeller Area — **CLEAR** (call “Clear #3!”)
- ▶ Starter Switch — **ENGAGE** (hold until propeller blades “kick”)
- ▶ Boost Coil Switch — **PRESS** (engages ignition)
- ▶ Mixture Control — **ADVANCE** to **RICH** as engine fires
- ▶ Throttle — **ADJUST** to ~800–1000 RPM
- ▶ Oil Pressure — **CHECK** (must rise within 30 seconds)
- ▶ Fuel Pressure — **CHECK NORMAL**



Repeat for Remaining Engines

- ▶ After #3 is stable, proceed to #4, then #2, then #1

After All Engines Started

- ▶ Boost Pumps — **OFF** (unless needed for takeoff or fuel transfer)
- ▶ Generators — **ON & CHECK LOAD**
- ▶ Hydraulic Pressure — **CHECK NORMAL**
- ▶ Vacuum Pressure — **CHECK NORMAL**
- ▶ Oil Temperature — **MONITOR** (warm to 40°C before run-up)
- ▶ Engine Instruments — **CHECK ALL ENGINES**

Run-Up (Before Taxi)

- ▶ Throttle — **1200 RPM**, check smoothness
- ▶ Magneto Check — **At 1700 RPM, max drop 100 RPM, difference £ 50 RPM**
- ▶ Prop Governor — **Cycle each prop** (drop & recovery check)
- ▶ Mixture — Check response at **IDLE CUT-OFF**
- ▶ Instruments — **ALL GREEN**

CHECKLISTS

TAKEOFF CHECKLIST

Before Takeoff

- ▶ Flight Controls — **CHECK, FREE**
- ▶ Instruments — **CHECKED & SET**
- ▶ Fuel Selectors — **MAIN TANKS, ON**
- ▶ Fuel Booster Pumps — **ON**
- ▶ Cowl Flaps — **OPEN** as required
- ▶ Mixture Control — **RICH**
- ▶ Propeller **RPM** — **FULL INCREASE** (Max RPM)
- ▶ Carburetor Air — **COLD**
- ▶ Oil Dilution Switch — **OFF**
- ▶ Supercharger — **LOW BLOWER** (Neutral if field elevation low)
- ▶ Tailwheel Lock — **LOCKED**
- ▶ Trim Tabs — **SET** (Elevator: ~2° nose-up; Rudder: 6° right; Aileron: neutral)
- ▶ Flaps — **UP** (0° for normal takeoff)
- ▶ Engine Gauges — **CHECK GREEN**

Takeoff Roll

- ▶ Throttles — **SMOOTHLY ADVANCE TO 45" Hg** (takeoff power)
- ▶ Directional Control — **MAINTAIN** with rudder, tailwheel locked
- ▶ Airspeed — **CALL OUT**
- ▶ 80 mph — **TAIL UP**
- ▶ 105 mph — **lift off**
- ▶ Gear — **UP** (after positive rate of climb)
- ▶ Power — **CLIMB POWER** (approx. 38" Hg, 2,350 RPM)



CHECKLISTS

LANDING CHECKLIST

Before Descent

- ▶ Mixture Control — **RICH**
- ▶ Propellers — **FULL INCREASE**
- ▶ Carburetor Air — **COLD**
- ▶ Supercharger — **LOW BLOWER**
- ▶ Cowl Flaps — **AS REQUIRED**
- ▶ Fuel Selectors — **MAIN TANKS**
- ▶ Booster Pumps — **ON**
- ▶ Seat Belts & Harnesses — **SECURE**

Before Landing

- ▶ Airspeed — **REDUCE** gradually
- ▶ Flaps — **DOWN** in stages (30° typical)
- ▶ Gear — **DOWN, CHECK INDICATION**
- ▶ Tailwheel Lock — **LOCKED**
- ▶ Final Approach — **90-100 mph**
- ▶ Touchdown — 3-point or wheel landing
- ▶ After Landing Roll — **Brakes AS REQUIRED**, maintain directional control



CHECKLISTS

SHUTDOWN CHECKLIST

After Taxi-In

- ▶ Parking Brake — **SET**
- ▶ Throttles — **1000 RPM** (2 minutes for cooling)
- ▶ Cowl Flaps — **OPEN**
- ▶ Electrical Equipment — **OFF** (radios, lights, etc.)

Engine Shutdown

- ▶ Mixture Control — **IDLE CUTOFF** (one engine at a time)
- ▶ Magnetos — **OFF**
- ▶ Boost Pumps — **OFF**
- ▶ Generators — **OFF**
- ▶ Batteries — **OFF**

Final

- ▶ Hydraulics Pressure — **CHECK**
- ▶ Control Locks — **INSTALL**
- ▶ Aircraft — **SECURE**



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