B-36H Peacemaker

for MSFS

USER MANUAL

Virtavia B-36 Peacemaker – MSFS20
Manual Version 1

Introduction

Convair's B-36 Peacemaker was called a 'Mega Bomber' when it was first introduced into service on August 28, 1947. An enormous aircraft, it was as complex as it was large. Its six 28-cylinder R-4360 engines were the very height of piston technology, and with the addition of the jet pods to later marques to assist with takeoff and top speed, the aircraft became even more complicated. With its 19-foot propellers and ten engines, it produced an Earth-shaking drone that could be felt from 40,000 feet. Produced in a wide variety of variants, including unarmed crew trainers, strategic bombers, and reconnaissance bombers, the plane was manufactured for seven years. The last B-36 was delivered on August 18, 1954, and the type was retired altogether on February 12, 1959. It marked the end of the US propeller-driven bomber era.

Support

Should you experience difficulties or require extra information about the Virtavia B-36H Peacemaker, please e-mail our technical support on tech.support@virtavia.com

Copyright Information

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Exterior Model

The exterior model has all the usual animations such as ailerons, elevators and flaps. There are some additional animations on the model:

Gun Turrets

The multiple gun turrets of the B-36 can be revealed using the default MSFS spoilers command, which is '/' (forward slash).

Bomb Bay

The tailhook function (h key) is used to open the bomb bay doors. This is so the animation can be seen in exterior view. A switch is also available on the pilot's center pedestal.

Crew figures

The crew figures can be toggled using a cockpit switch (refer to Pilot's Instrument Panel section of this manual).

Exterior Lighting

Pressing the L key will turn on all lights. You may however wish to turn them on using the appropriate switches in the cockpit.

Shift-L will toggle the nav lights and the cockpit lights.

Crtl-L will toggle the landing lights.

Please refer to the cockpit section of this manual for information regarding light switch location.

VR Tip

If the cockpit appears too small in VR, go to the Steam VR Per Application Video Settings for MSFS and set the **Override World Scale** slider to 120 %.

Quick Tips

Starting from cold – Assuming the aircraft was left in the fully shut down state and all switches and levers are in their usual OFF position, then follow the quick start procedure below or alternatively follow the in-game checklist.

Check the bomb doors are closed, flaps up, park brake is on (switch is on the pilot's center pedestal) and the throttle levers are all at the idle position. Use the sim camera view menu 'Instruments' sub-menu to switch to the Flight Engineer's Panel (FE 2). The guarded Master Battery switch is found top right on the FE Auxiliary Panel. If lighting is required, find the Cabin Lighting switch at the forward edge of the pilot's center pedestal panel. For more information on lighting, refer to the Cockpit Lighting section of this manual.

Starting the Reciprocating Engines

Now use the camera menu again to re-locate to the port side Flight Engineer's seat (FE1). Check the 6 Mixture Levers to your left are all set to fully rich (all forward from your perspective). Here to your right you will also find the FE Main Control Panel and the 6 ignition switches along the top edge. Set these to ON. Lower down on the same panel are the 6 Fuel Valve switches and their corresponding warning lamps (these are lit when valve is OPEN). Set these to OPEN. Starting can be done sequentially, if desired. The authentic engine start sequence is 4, 5, 6, 3, 2, 1. Next to the ignition switches are the Starter switches, use these to start each engine in turn. If an engine fails to start, re-check switch positions and the fuel quantity master gauge and try again.

Starting the Jet Engines

Now use the camera menu again to re-locate to the pilot's Overhead Jets Control Panel. First, check the 4 throttle levers are at the IDLE position. Now set the 4 Intake Doors switches to OPEN. Then turn the 2 Fuel Valve switch pairs to OPEN. These are in two pairs due to MSFS treating the jet pods as single engines (8-engine limit). The 4 Fuel Valve

lamps will light indicating the engines are ready. Use the 2 Starter switch pairs to start both left and right side jet engine pods.

Take-off – The B-36H is an OVERPOWERED aircraft. Its 10 engines are primarily there to haul a full fuel and bomb load to a high altitude as soon as practically possible. This means it will easily exceed the normal speeds flown at lower altitudes during casual flying if the throttles are not carefully managed. In fact, the jets are not required to get airborne unless there is a combination of a short runway and/or heavy payload. Even if the jets are used at take-off, they are usually shut down once airborne or at least at cruising altitude.

To get airborne, set flaps to one notch (10 degrees on the gauge). Apply approx. 8 degrees of nose-up pitch and release the parking brake. Advance throttles to around 2/3, full throttle is not needed under most conditions and may result in ovespeeding of not retarded quickly after take-off. If the jet engines are on, these can be shut down after take-off if desired, simply close their fuel valves on the overhead and close the jet intake doors. Even with the intake doors closed, some engine RPM will still register on jets' RPM gauges due to the turbines 'windmilling', this is actually authentic and was deliberate to prevent freezing problems inside the turbines.

Cruise

For further information about navigation, radios and autopilot, please refer to the Instrument Panels sections in this manual.

Landing and Engine Shutdown

The landing procedure is detailed in the in-game checklist and is very straightforward with no special procedures required. Refer to the section on the Pilot's Center Pedestal for information on propeller reverse (not required for normal landings). The jets (if still running) are shut down by closing their Fuel Valve switches on the overhead panel. The recip. engines are shut down on the Flight Engineers panel by closing the engine 6 Fuel Valve switches, turning off the 6 Ignition switches, or by settng the Mixture Levers to the Idle-Shutoff position.

Pilot's Instrument Panel

It is expected the user will recognize the usual altimeter, airspeed, vertical speed and turn/slip instruments, the other items of interest are detailed below.

1. Radios Toggle - turns visibility of the modern radios on/off.

2. Control Yokes Visibility Toggle - This socket graphic is used to hide the pilots' control yokes for better visibility of the panel.

3. Radio Magnetic Indicator (RMI) - The compass (RMI) used in the B-36 is typical for this era. The background numbered disc always points to the cardinal direction the aircraft is heading. The thin white needle indicates the relative direction of the currently tuned NAV1 station (use the MSFS moving map screen to find the station frequencies). The larger white needle is not used.

4. Distance Measuring Equipment Indicator (DME) - displays the distance in nautical miles to the currently tuned NAV1 or ILS frequency. A white bar will appear across the numbers when no signal is being received.

5. Gyro Magnetic Compass - The background numbered disc always points to the cardinal direction the aircraft is heading. The thin white needle indicates the relative direction of the currently tuned NAV1/ILS station (use the MSFS moving map screen to find the station frequencies). The knob to the lower left is used to set the small yellow triangular marker on the periphery of the dial, this is the autopilot heading (HDG) indicator. This is not an authentic part, it was added for the convenience of the user.

6. Course Deviation Indicator (CDI) - This instrument is a predecessor to the modern HSI or VOR indicator. It tracks the currently tuned NAV1 or ILS signal whilst permitting a course value such as a VOR radial or runway heading to be input into the physical numerical display.There are OFF flags which are displayed when no signal is present and FROM/TO indicator which is familiar to users of more modern VOR indicators. The vertical and horizontal bars are the usual LOC and GS guides and the rotating heading pointer displays the aircraft heading relative to any selected track. The indicator lamp has no function in this simulation.

7. Sperry Bombing Computer Indicator - A special instrument linked to the bombardier's equipment and only used for bombing runs. Not functional in this simulation.

8. Radar Altimeter - The small knob on the lower right of the frame turns the instrument on and off, default is OFF.

9. Master Engine Manifold Pressure Indicator

10. Pilot's Master Tachometer

11. Crew Figure Visibility Toggle Switch - The alarm switch has been repurposed so the crew can be turned off in the exterior model.

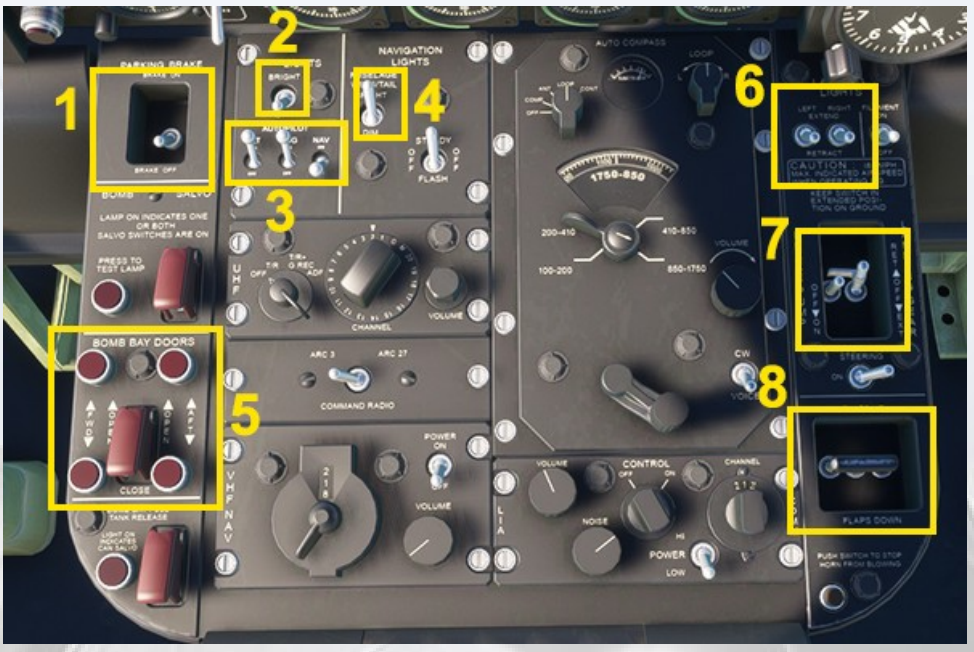
Pilot's Instrument Panel

1. Propeller Reverse Warning Lamps

2. Landing Gear Indicator Lamps

3. Windshield Wipers Switch - The wipers can be set at slow or fast speeds. NOTE - the wipers are SPEED LIMITED and will not operate above 265 MPH.

Pilot's Pedestal, Front



1. Parking Brake Switch

2. Cabin Lights Switch - This is the first of the lighting switches which should be used when entering the cockpit in the dark. Make sure the Master Battery is on first (See Flight Engineer's Panels section).

3. Autopilot Select Switches - Left to right - ALT hold, HDG hold and NAV hold (NAV not functional on recip engine aicraft in MSFS). NOTE - these are not the same as Autopilot Master Power switch, of which there are three. Refer to the separate Autopilot Section for details.

4. Navigation Lights Switch

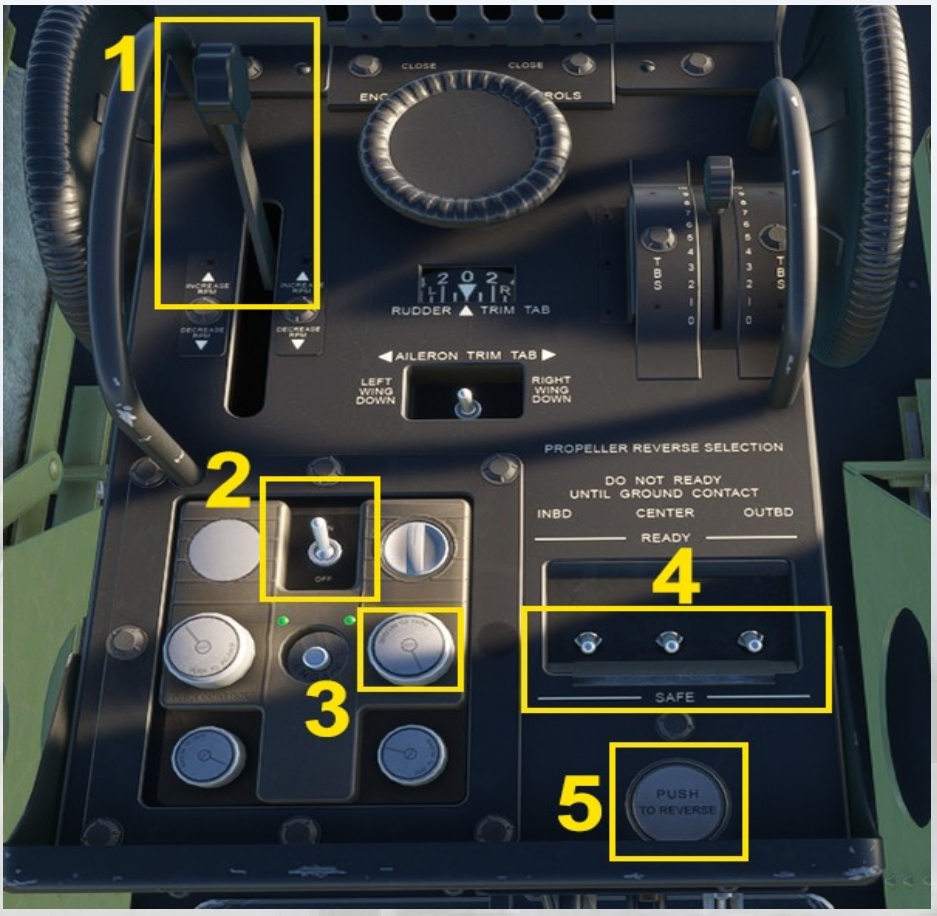
5. Bomb Bay Doors Switch - This guarded switch uses the MSFS tail hook function and its tooltip will indicate this. Using this function means the ctrl-h key press can be used in exterior view to watch the bay doors move. Four nearby warning lamps show when the doors are open.

6. Landing Lights Switches - The landing lights are mounted each side of the front fuselage and can be extended independently using these two switches.

7. Landing Gear Extend / Retract Switch

8. Landing Flaps Switch

Pilot's Pedestal, Rear



1. Master Propeller Pitch Lever - the B-36 does not have individual propeller pitch levers. This single lever controls all 6 engines.

2. Autopilot Master Switch - One of three AP Master switches, the other two are mounted on the pilots' control yokes. The two small green lamps illuminate when the autopilot system is active.

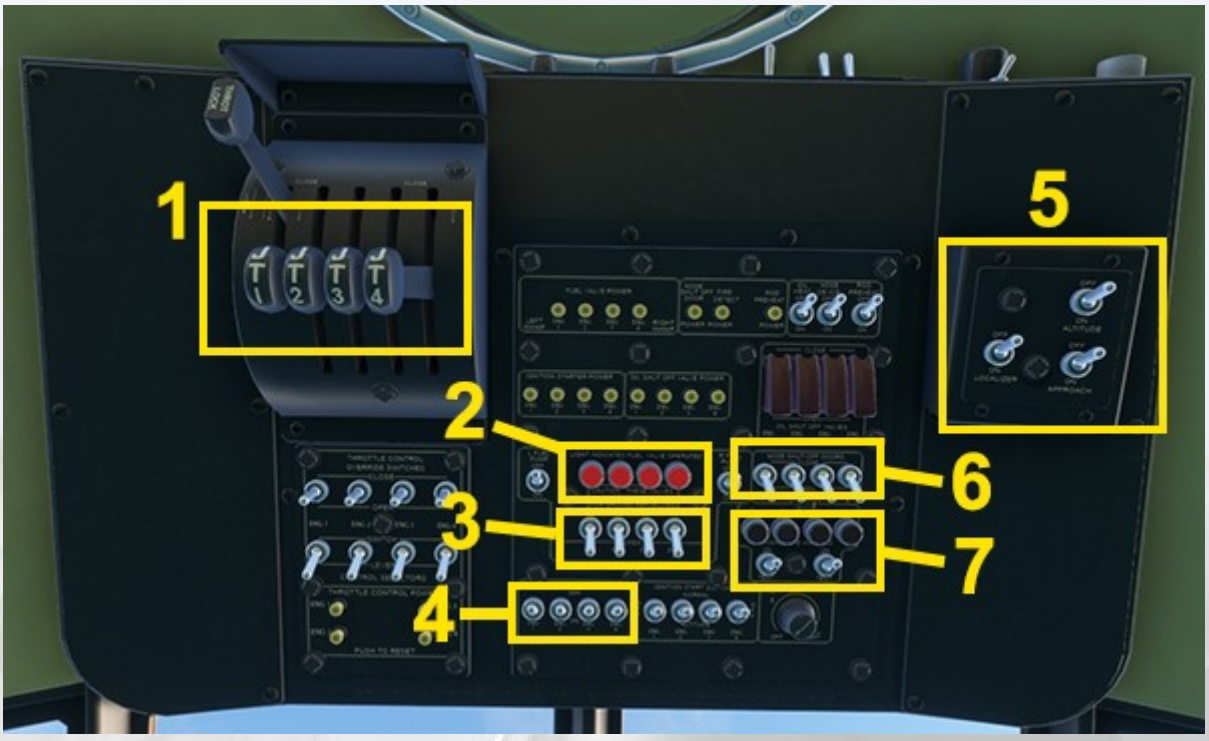
3. Autopilot ALT Hold Altitude Setting Knob - Click and hold, then it is possible to use the mousewheel (or drag the cursor) to set a desired altitude value for the autopilot ALT hold.

4. Propeller Reverse Safety Switches - these three ganged switches are set from SAFE to READY by clicking on the slider bar. The default position is SAFE. Set to the bar READY before using the Reverser Button below.

5. Propeller Reverser Button - After touchdown, this button can be pressed to set all 6 propellers to reverse pitch. After doing so, the 6 warning lamps on the main panel will illuminate and the Master Propeller Pitch Lever will move automatically to the fully aft position. The throttles can now be advanced to provide thrust to assist in retardation of the aircraft. Once the required speed is achieved, the Reverser Button must be pressed again to turn reverse pitch OFF, then set the safety bar back to the SAFE position. NOTE - the Master Propeller Pitch Lever will remain in the fully aft position (maximum FINE pitch) and will need to be advanced again to provide sufficient COARSE pitch to produce some forward motion for taxying.

NOTE - It is advisable to PAUSE the simulation just after touchdown before pressing the Reverser Button as its location requires the pilot's view to be moved considerably at a point where aligining the aircraft with the runway is of critical importance. Once the six warning lamps on the Main Panel are ON, the sim can be unpaused and the throttles advanced to provide retardation thrust as described above.

Overhead Jets Control Panel



1. Jet Engine Throttle Levers - The levers operate as two PAIRS, not four individual levers. This is due to the 8-engine limit of MSFS. Engine 1 (left jet pod) is actually another reciprocating engine, as it is not possible to mix jets and reciprocating engines in the sim. Similarly, the right side jet pod is actually reciprocating engine number 8.

2. Jet Fuel Valve Warning Lamps - these are lit when the Fuel Valve Switches for the jet engines are in the OPEN position.

3. Jet Fuel Valve Switches - Normally in the OPEN position, set to CLOSED to shut down the engine pods.

4. Jet Starter Switches - If the red Fuel Valve Warning Lamps are ON and there is sufficient fuel, these two switch pairs will start the jets.

5. Additional Autopilot Functions - These switches have no function in the sim as APPR hold and LOC hold are not supported on reciprocating engine aircraft. The ALT switch is left inert to avoid conflict with the ALT hold switch on the pilot's pedestal.

6. Jet Pod Intake Doors Switches - These four switches will cause the jet pod doors to appear when in the OPEN position. It is normal to have these CLOSED when the engines are shut down, even in flight.

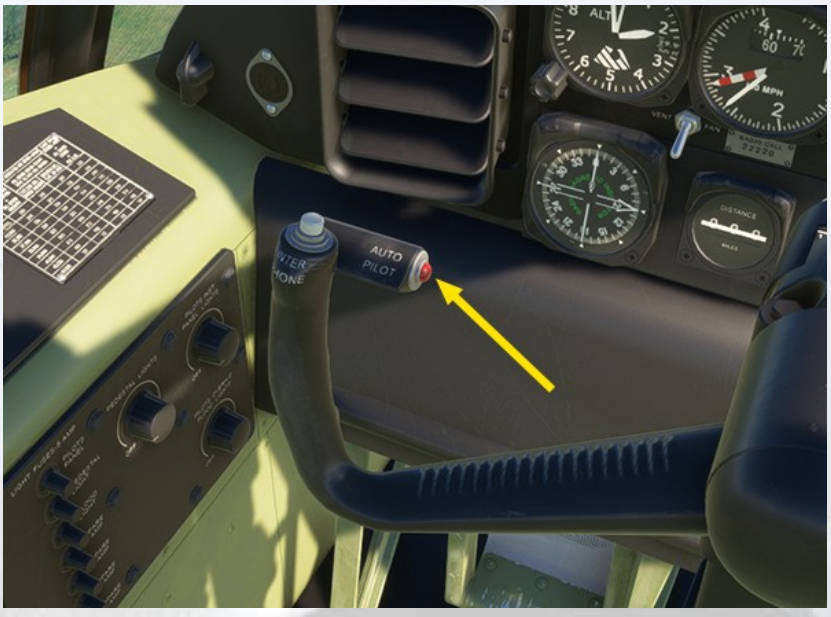
7. Jet Engine FIre Warning Lamps and Lamp Test Switches

Autopilot Operation

Due to MSFS limitations on reciprocating-engined aircraft, the autopilot only supports settable heading and altitude modes.

The autopilot master switch and altitude control knob are found towards the rear of the pilot's pedestal. The two green lights indicate that AP is ON.

The easiest way however to toggle the autopilot system is to use the red push-switch on the pilots' yokes :



The position of the switch gives an easy visual check of the on/off status of the autopilot : in = ON, out = OFF.

The autopilot heading control is provided by a (non-authentic) knob on the pilot's Gyro Magentic Compass frame :

Using the Autopilot

Once the autopilot system is activated, either by the Master Switch on the pilot's pedestal, or via one of the red control yoke push buttons, ALT or HDG, or both can be now switched on with their unique respective toggle switches, located near the front edge of the pilot's pedestal :

NOTE: NAV hold is not supported.

Engaging the ALT hold switch will cause the autopilot to 'grab' the current altitude, so any previously set values made using the ALT setting knob tooltip will be lost. Now is the time to go to the ALT setting knob on the pilot's pedestal rear and input an altitude value.

The same goes for the HDG hold switch. The small yellow heading bug on the pilot (and copilot's) Gyro Compass will jump to the current heading and this heading will be held until a new heading is put in by using the HDG setting knob on the Gyro Compass frame lower left.

Lighting Control

Toggle switches are only available for the Navigation Lights (2) and to turn on interior lighting generally, via a Cabin Lights Switch, (1) below. Control of cabin flood lights and dome lights is made possible by the use of various rheostats (potentiometers).

Lighting Rheostats

Pilot's Panel :

1. Pedestal Lights - Controls light intensity of text on center console.

2. Pilot's Inst. Panel Lights - Controls light intensity of all instruments on the Pilot's main panel.

3. Pilot's OHD Flood Lights - Controls the intensity of the Pilot's overhead dome light. Dome lights are set to white only.

Copilot's Panel :

1. Instrument Panel Coaming Light Red - Controls RED FLOOD light intensity for the main instrument panel.

2. Instrument Panel Coaming Light Red - Controls WHITE FLOOD light intensity for the main instrument panel.

3. Copilot's Inst. Panel Lights - Controls light intensity of all instruments on the Copilot's main panel.

4. Copilot's Circuit Breaker Panel Lights - Controls light intensity of the text on the Copilot's circuit breaker panel.

5. Copilot's OHD Flood Lights - Controls the light intensity of the Copilot's overhead dome light. Dome lights are set to white only.

6. Center Inst. Panel Lights - Controls the light intensity of the jet engine gauges at the center of the main instrument panel.

Flight Engineers' Panel :

1. Flight Engineers' Dome Light - Controls the light intensity of the Flight Engineers' left side dome light. Dome lights are set to white only.

2. Flight Engineers' White Flood Light - Controls the light intensity of the Flight Engineers' general white flood illumination.

3. Flight Engineers' Red Flood Light - Controls the light intensity of the Flight Engineers' general red flood illumination.

Flight Engineers' Panels

The Flight Engineers' Station in this cockpit model is visually accurate, but for practical reasons not every single switch and knob on these panels is operable. It has been limited to vital operations only and a few additional animations for some added authenticty.

The whole station is divided into four seperate areas :

The left side (from the FE's point of view) is home to electrical power generation control and electrical systems monitoring. This includes the two seperate Auxiliary Panels as well as around a third of the Main Instrument Panel.

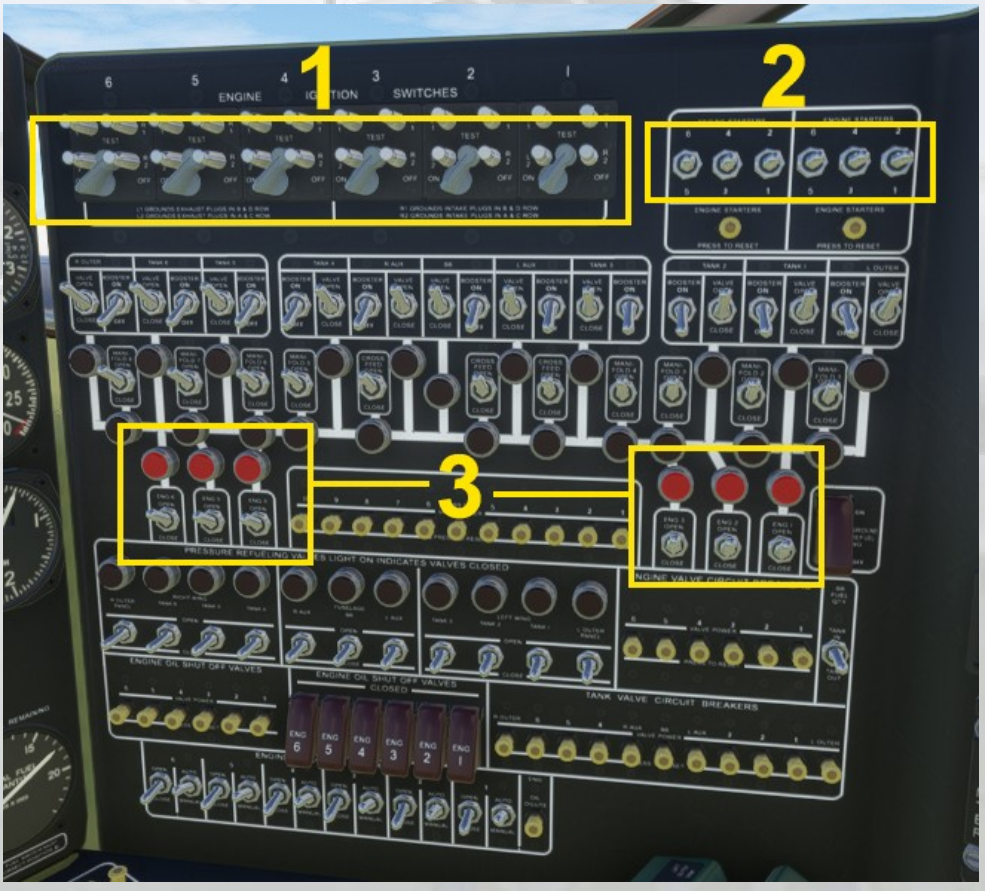
The center FE Main Instrument Panel is home to all of the indicators used to monitor the reciprocating engines and fuel quantity status. There are also four jet engine fuel flow gauges at the top of the panel, the remainder of jet engine gauges are to be found in the center of the pilot's instrument panel. Down the right side of this panel are also an altimeter, airspeed indicator and a Master Motor Tachometer.

The right side (from FE perspective) panels consist of the Main Control Panel, home to fuel flow control, ignition/magneto control and recip. engine starter switches, as well as a sub-panel appended to the edge of this panel which mainly houses ganged switches for water injection and oil dilution (not supported), and the FE's Oxygen Control Panel.

Finally, the Flight Engineers' table is home to the throttle and mixture control levers for the reciprocating engines. There are also various switches for control over mainly propeller, engine spark and turbo-supercharger systems. These systems are not operable in this simulation, supercharger operation is available but automatically controlled in MSFS and propeller pitch is controlled by the pilot.

Here are the essential operable components on the FE Station panels :

Main Control Panel

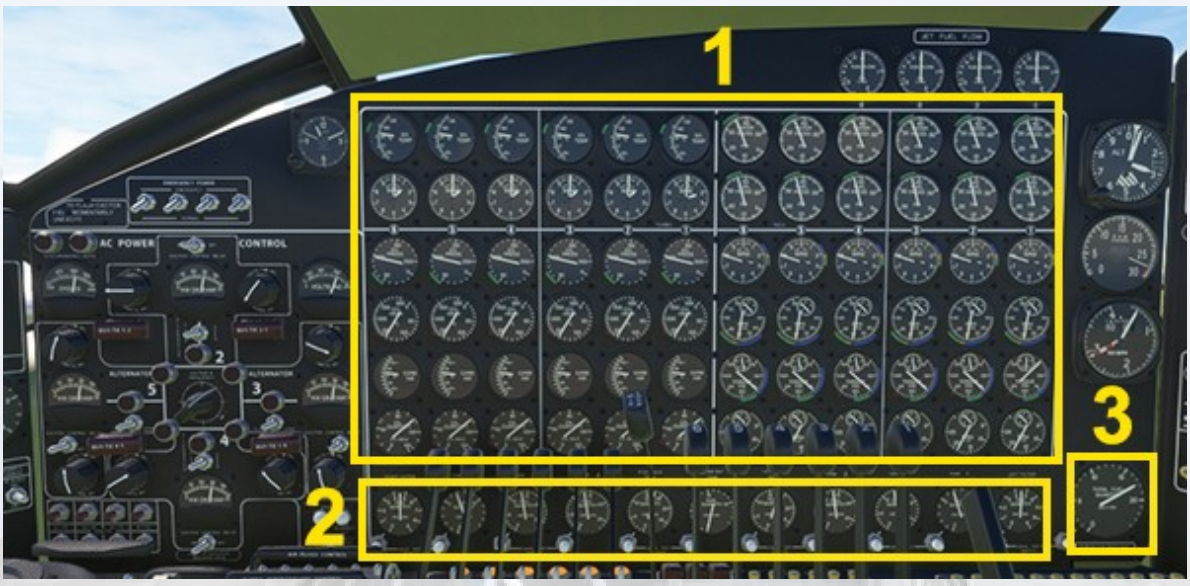


1. Reciprocating Engines Ignition Switches

2. Reciprocating Engines Starter Switches

3. Reciprocating Engines Fuel Valve Switches and Indicator Lamps
- The lamps are lit when fuel is flowing, ie. the switch in ON.

Main Instrument Panel

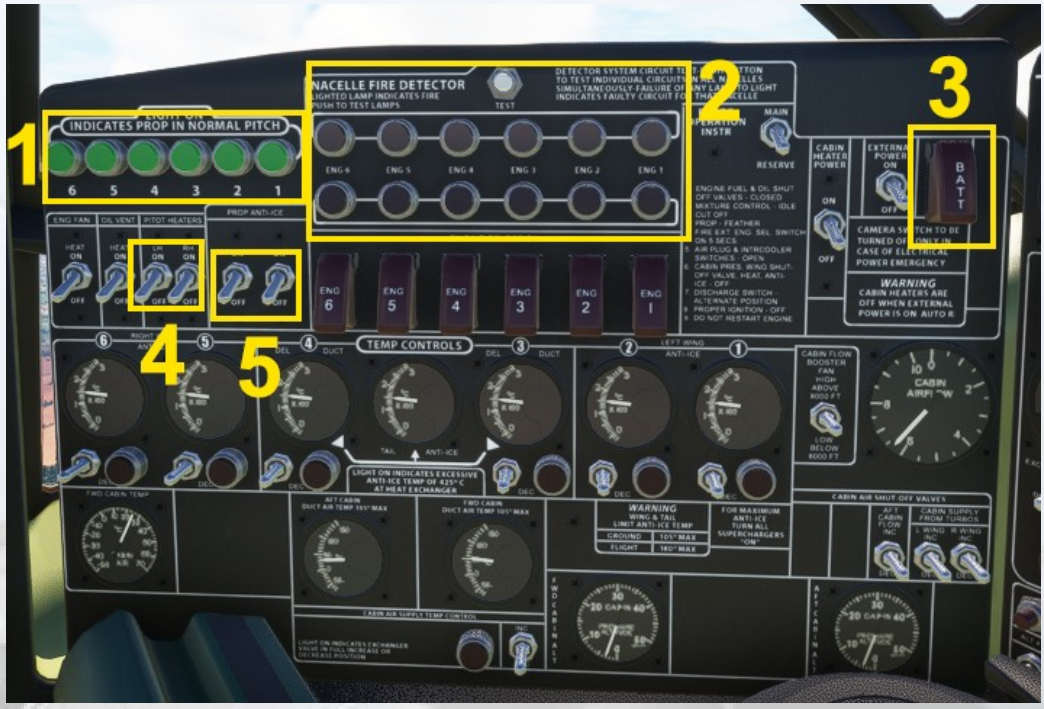


1. Reciprocating Engines Monitoring Gauges

2. Individual Fuel Tank Quantity Gauges and Test Buttons - The test buttons will cause the needle to move to zero and return when released, indicating proper functioning of the instrument.

3. Fuel Totalizer - displays the total fuel quantity in the aircraft.

Auxiliary Panel



1. Propellers In Normal Pitch Range Indicators - These lamps will extinguish if the pilot sets the propeller pitch to a fine setting or has engaged reverse pitch. They are normally ON.

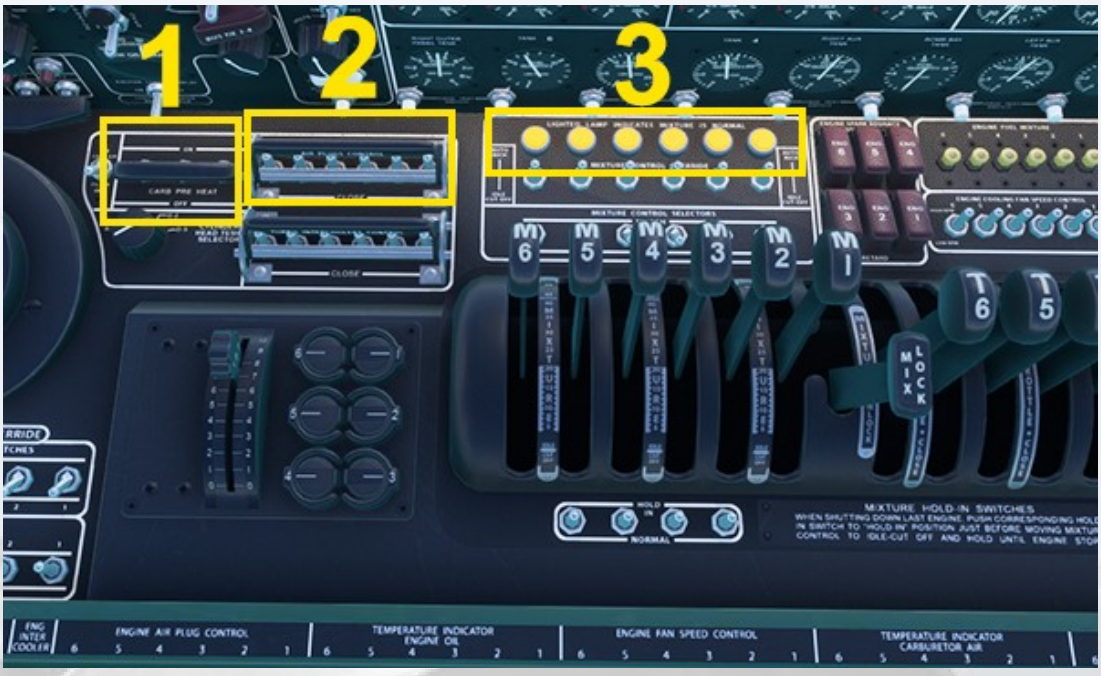
2. Reciprocating Engines Fire Detector Lamps - There are two fire detectors per engine nacelle, hence the pairs of lamps. If an engine fire is set in the MSFS Failures menu, the appropriate lamp pair will illuminate. The lamps can be tested by pressing the white button above the lamps.

3. Master Battery Switch

4. Pitot Heater Switches

5. Propeller Anti-Icing Switches - These are operable but MSFS does not support multi-engine propeller de-icing, so there will be no effect in the sim.

Flight Engineers' Table - Left Side

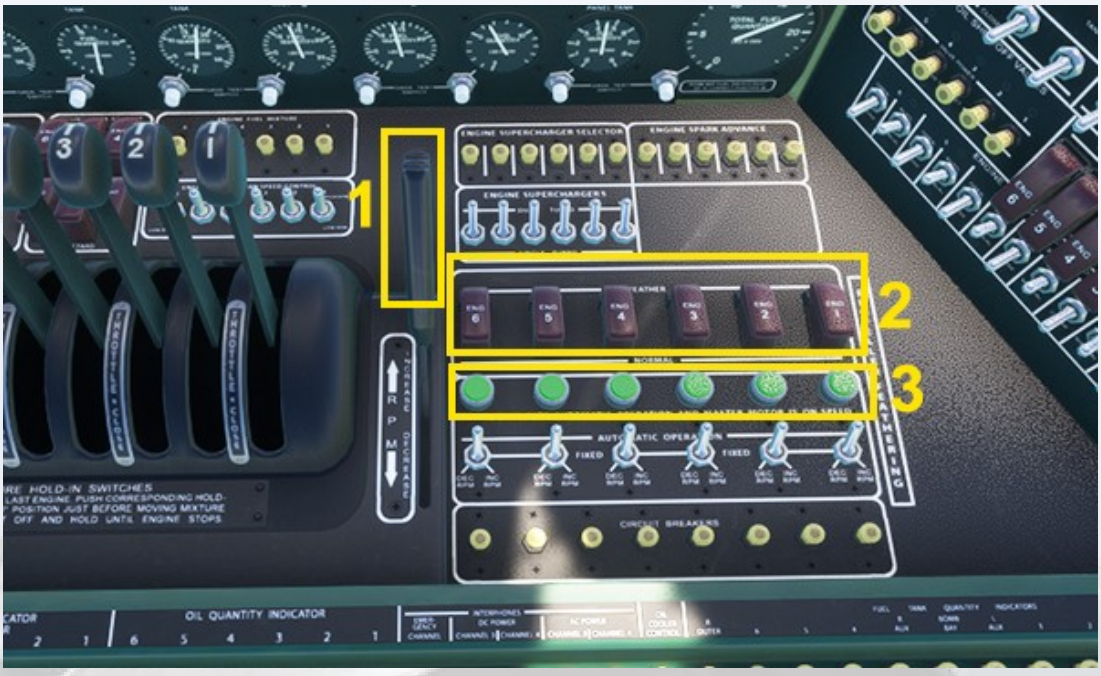


1. Carburetor Heat Switches - Simple on/off for all carbs.

2. Air Plugs Control Switches - Air Plugs are the cone-shaped rings adjacent each of the propeller spinners and are the equivalent of cowl flaps on the B-36. Clicking the gang bar with the left mouse button will close the Air Plugs. Clicking with the right mouse button will open them again.

3. Mixture Is Normal Indicator Lamps - These lamps will extinguish if the position of a Mixture Lever is at less than 50% of its range. The lamps are normally ON.

Flight Engineers' Table - Right Side



1. Master Propeller Pitch Lever - This is the Flight Engineers' version of the pilot's Propeller Pitch Lever. The lever is not operable as it conflicts with the pilot's lever but it does move to reflect the position of the pilot's lever.

2. Propeller Feathering Switches - These guarded switches are operable but have no function in the sim as MSFS does not support multi-prop feathering with reciprocating-engined aircraft.

3. Master Motor On Speed Indicator Lamps - These lamps are normally illuminated when the Master Prop Pitch Lever is above 50% of its range, indicating normal levels of thrust.

B-36H Peacemaker Specs

Specifications :

Empty Weight: 166,165 lbs.
Maximum Overload Takeoff: 410,000 lbs.
Normal Aircraft Weight, full fuel: 365,700 lbs.
Crew: 15
Maximum fuel load: 199,548 lbs
Maximum bomb load: 87,200 lbs.

REFERENCE SPEEDS

full flaps stall speed : 120 MPH

flaps up stall speed : 150 MPH

cruise speed : 250 MPH

max flaps extended : 175 MPH

normal operating speed : 250 MPH

rotation speed_min : 150 MPH

climb speed : 200 MPH

cruise alt : 20000 (ft)

service ceiling : 43,600 ft