X-Plane
Cessna Citation X

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Contents

The Cessna Citation X

The Citation X is a twin-engined business jet produced by the Cessna Aircraft Company. The aircraft was announced in October 1990 and designated model ‘750’, following on from Cessna’s previous ‘650’ series of aircraft that encompassed the Citations III, VI and VII. The Citation X improved on the ‘650’ series with increased speed and a pressurized baggage compartment, and also revived the overall brand image for Cessna corporate jets. The original models were powered by two Rolls-Royce AE 3007C engines, each developing 6442 lbs. (28.66 kN) of thrust.

The first flight occurred in December 1993 and type-certification was granted in June 1996. The first delivery was to celebrity golfer Arnold Palmer in July 1996, and the aircraft quickly established a reputation for speed with a number of speed records, including one posted by Palmer’s own aircraft.

In January 2002, Cessna began delivering an upgraded version of the aircraft (still designated Citation X) featuring increased thrust, and an improved avionics suite from Honeywell.

An updated version of the aircraft designated 'Citation X+' went into production in 2010. This featured Rolls Royce AE3007C2 engines, a slightly stretched fuselage (and passenger cabin), standard fitment of winglets, a Garmin G5000 avionics suite, and a heads-up display. The Citation X+ posted improved fuel consumption together with more thrust, and consequently an increase in payload and range.

All Citation X models feature a wing sweep of 37 degrees, and also highly swept horizontal and vertical stabilizers. The 'supercritical airfoil' design of the wing delays the onset of drag as the aircraft approaches transonic speeds. Citation X jets are consequently one of the fastest in their class.

Cessna also designed a very low-drag fuselage with an ultra-low wing that passes below (instead of through) it. This provides for more space in the cabin and allows for a single piece wing.

Citation X and X+ aircraft feature powered controls the utilize a redundant hydraulic system. Each wing has five spoilers that have dual roles - acting as speed-brakes and for roll-control augmentation.

Production ceased in 2018, with Cessna having delivered a total of 337 aircraft – 314 Citation X models, and 23 Citation X+ models.

Cessna CITATION X Specifications

Engines:		
Model	----------	2 × Rolls Royce AE 3007C Turbofan engines
Power	----------	6,442 lbs. (28.66 kN) thrust.
Fuel:		
Capacity	----------	13,000 lbs.
Type	----------	Jet A-1
Burn (cruise)*	----------	2900 lbs. (1315 kg) / hour
Weights and Capacities:		
Max. Takeoff Weight	----------	36,000 lbs. (16,782 kg)
Basic Empty Weight	----------	22,000 lbs. / 9,979 kg.
Useful Payload	----------	14,000 lbs. / 6,350 kg.
Maximum Persons	----------	14
Performance:		
Max. Cruise Speed	----------	Mach 0.92
Stall Speed	----------	86 KCAS (full flap)
Never Exceed Speed	----------	350 KIAS
Service Ceiling	----------	51,000 ft. / 15,5456 m
Rate of Climb	----------	3,650 ft. per min / 1,113 m per min
Range	----------	3,700 nm
Dimensions:		
Wingspan	----------	64 ft. / 19.5 m
Length	----------	73 ft. / 22.3 m
Height	----------	19 ft. / 5.8 m

- *Representative value depending on conditions*

The X-Plane Citation X

The X-Plane flight model employs a technique called “Blade Element Theory”. This utilizes the actual shape of the aircraft (as modeled in the simulator) and breaks down the forces on each part separately. The force of the “air” acting on each component of the model is individually calculated, and combined, to produce extremely realistic flight.

When you “fly” an airplane in X-Plane, there are no artificial rules in place to govern how the aircraft behaves. Your control inputs move the control surfaces of the aircraft, and these interact with the virtual flow of air around it. As such, you may consider that you are really flying the aircraft.

Due to the use of “Blade Element Theory” in X-Plane, an aircraft must be modeled with great accuracy, in order that it behaves like its real-life counterpart. This means the fuselage, wings and tail surfaces must be the right size and shape, the center of lift and center of gravity must be in the right places, and the engine(s) must develop the right amount of power. In fact, there are a great many properties that must be modeled correctly to achieve a high-fidelity flight model.

The Citation X featured in X-Plane has been modeled by our design team with a degree of accuracy that ensures its flight characteristics are similar to the real aircraft. However, despite this, some differences will be apparent, because even the smallest factor plays into the ultimate behavior of the aircraft in reality, and in X-Plane. The systems modeling of this aircraft involves some compromise too, because of the degree of complexity present in a real aircraft. However, in many cases, the actual Citation X procedures could be followed when operating the X-Plane version. Checklists are presented later in this document (with modifications to suit this specific simulation platform and model). It is recommended that X-Plane pilots follow those procedures when operating the aircraft.

Views and Controls

The X-Plane Citation X features a detailed 3-D cockpit with many of the primary controls and systems modeled, including: Flight controls (control sticks, rudder pedals, throttle, prop, and mixture), electrical systems, pneumatic systems, navigation aids, radios, interior and exterior lighting, and fuel systems.

Creating “Quick Look” views

Before discussing the controls, we suggest that the pilot establish a series of “Quick Look” views that will be helpful later when interacting with this particular aircraft. If you are not familiar with this technique, more information is available in the X-Plane Desktop Manual.

The following “Quick Look” views are recommended for the Citation X, where the pilot is not using a Virtual Reality (VR) headset, or a head tracking device. To some degree, these correspond (on the keyboard Number Pad) with their physical locations in the cockpit - and are therefore logical and easy to recall later.

Throttle Quadrant and Pedestal

Pilot’s Switching Panel

Co-Pilot's Switching Panel

Pilot View Forward

Autopilot Panel

Co-Pilot View Forward

Left Glance View

Cabin Overhead Lighting

Right Glance View

Operating the controls

This section covers the control manipulators used in X-Plane. The specific illustrations in THIS chapter may differ from YOUR aircraft.

Toggle and Rocker switches are operated with a single click of the mouse. Place the mouse pointer slightly above, or below, the center point of the switch, depending on the direction you intend to move it. A small white arrow is displayed to confirm the intended direction. Click the mouse button to complete the operation.

- Illustration not taken from this aircraft

Levers are operated by assigning a peripheral device to the necessary axes in X-Plane (throttle, prop, mixture etc.). More information is available in the X-Plane Desktop Manual.

Levers may also be operated by clicking and dragging the mouse pointer.

- Illustration not taken from this aircraft

Some rotary dials are operated by positioning the mouse pointer on top of the control, and then a click and drag to the right, or to the left. The same can be accomplished using the mouse wheel - if one is present on your device.

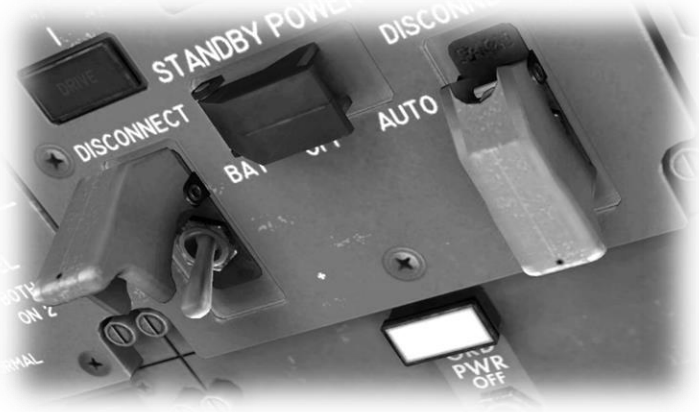
Other rotary controls require finer precision. When the mouse pointer is positioned slightly to the left of such a control, a counter-clockwise arrow appears. This indicates that you are ready to rotate the control counter-clockwise. Correspondingly, a clockwise arrow indicates that you are ready to rotate the control clockwise. After positioning the mouse pointer, changing the frequency in the desired direction is accomplished in two ways:

i) By rolling the mouse wheel forwards, or backwards

ii) By clicking (dragging is not supported here)

Radio and Navigation frequency rotary dials are grouped together as “twin concentric knobs”. Here, the larger rotary is used to tune the integer portion of the frequency, and the smaller rotary is used to tune the decimal portion. Each works independently, using the same technique, as described above.

Push buttons are operated by pointing and clicking with the mouse.



Guarded switches are used in situations where accidental activation of the switch must be prevented. To operate a guarded switch, the guard must first be opened. Do this by positioning the mouse pointer over the switch until the two vertical white arrows are displayed. Click once. If the switch is currently closed, it will open, and vice-versa. After the guard has been opened, the switch may be operated like a toggle and rocker switch (see earlier in this section).

- Illustration not taken from this aircraft

The Control Stick is operated by assigning a peripheral device to the “roll” and “pitch” axes in X-Plane. This is discussed in greater detail later in the guide.

- Illustration not taken from this aircraft

The Rudder Pedals are operated by assigning a peripheral device to the “yaw” axis in X-Plane. If your rudders also support toe braking, create additional assignments to the “left toe brake” and “right toe brake” axes in X-Plane. This is discussed in greater detail later in the guide.

Note that you may also assign keys on your keyboard, or buttons on your external peripheral to move the rudder to the left or right, or to center the rudder.

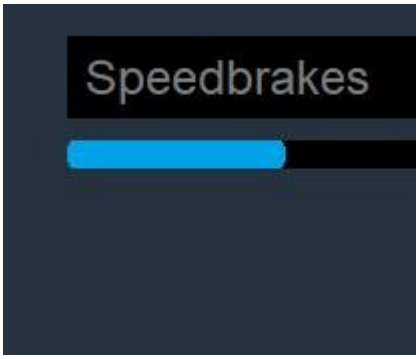
- Illustration not taken from this aircraft

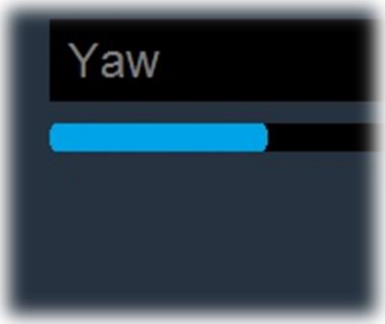
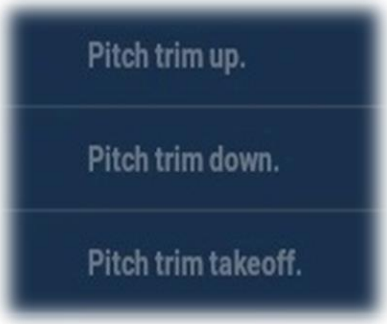
Assigning peripheral devices

This section of the manual deals with an “ideal” scenario, in terms of the assignment of external computer peripherals to operate the X-Plane Citation X with the highest degree of realism. If you are missing some of these external peripherals, you may elect to choose a different configuration that better suits your hardware.

More information is available in the X-Plane Desktop Manual.

		**Roll and Pitch:** This aircraft is equipped with yokes, for roll and pitch control. Assign the lateral axis of your joystick (or yoke) to the “Roll” command in X-Plane, and the vertical axis to the “Pitch” command.
		**Thrust:** This aircraft is equipped with dual thrust levers – which control the thrust generated by the left and right engines respectively. Assign two levers on your quadrant to the “Throttle 1” and “Throttle 2” properties in X-Plane.
		**Reversers:** This aircraft is equipped with dual thrust-reverse levers – which control the braking thrust generated by the left and right engines respectively following touchdown. Assign two levers on your quadrant to the “Reverse 1” and “Reverse 2” properties in X-Plane.

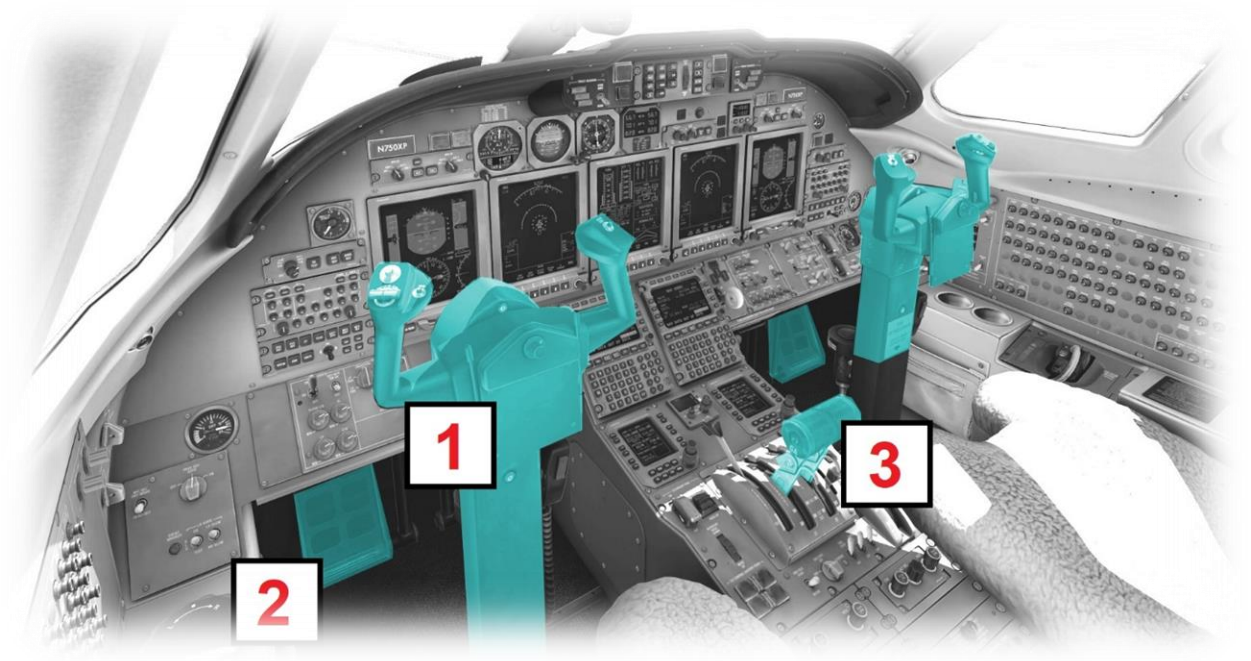
		**Flaps:** This aircraft is equipped with a Flap lever, which controls the deployment of the flaps. Flaps re-configure the wings for additional lift and drag - used during the takeoff and landing phases of flight. Assign a peripheral lever to the “Flaps” property in X-Plane..
		**Speedbrakes:** This aircraft is equipped with a Speed-brake lever, which controls the deployment of drag-inducing panels atop the wings. These simultaneously slow the aircraft and reduce lift generated by the wings. Assign a peripheral lever to the “Speedbrakes” property in X-Plane..

 • Illustration not taken from this aircraft		**Yaw** This aircraft has rudder controls, actuated by the rudder pedals. Assign the yaw axis of your pedals peripheral device (or a joystick axis) to the “yaw” property in X-Plane.
 • Illustration not taken from this aircraft		**Toe Braking:** This aircraft has rudder toe-braking, actuated by the tip of the rudder pedals. Assign the brake “toe-tipping” motion of each individual pedal (or a joystick axis) to the “left toe brake” and “right toe brake” property in X-Plane.
 • Illustration not taken from this aircraft		**Stabilizer Trim:** This aircraft features an electric pitch trim system. Assign joystick buttons, or hat-switch axes to the following properties in X-Plane: ‘Pitch trim up’ ‘Pitch trim down’ ‘Pitch trim takeoff’

A Tour of the Cockpit

In this section of the manual, the cockpit will be broken down into distinct functional areas, and the controls that are featured in those areas will be identified and described. This will assist in locating the necessary instruments and controls later, when working through the aircraft check lists, and flying the aircraft.

Primary Flight Controls

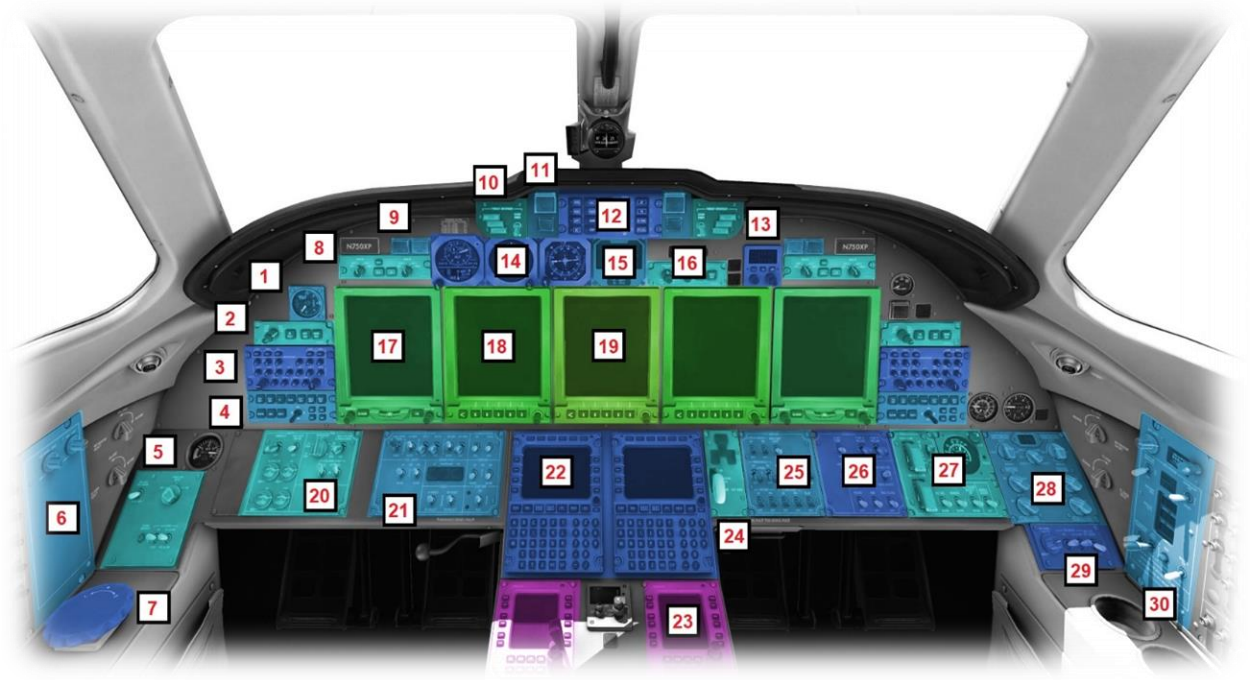


1	**Control Yokes**	Controls pitch and roll. Actuates the ailerons that are built into the wings. See also: Roll and Pitch:
2	**Rudder Pedals**	Controls Yaw. Actuates the rudder that is built into the tail assembly. Toe-tipping motion actuates the left and right wheel brakes. See also: Yaw and Toe Braking:
3	**Throttles**	Controls thrust. The throttle levers provide independent control of the thrust generated by the left and right engines. See also: Thrust:

Overhead

1	Overhead (LED) Map Lights	Each light is directional and may be moved with a mouse-click and drag operation. Light intensity is controlled via the (separate) Pilot and Co-Pilot 'Map Light' rotary controls on the Overhead Map Light Intensity Panel and APU Control Panel.

Instrument Panel



1	Angle of Attack Indicator	16	Reversionary Control Panel (not modeled)
2	PFD/MFD Illumination Panel	17	Primary Flight Display (PFD)
3	Audio Control Panel	18	Multi-Function Display (MFD)
4	PFD / MFD Control Panel	19	Engine Indicating And Crew Alerting System (EICAS)
5	Oxygen Control Panel	20	Multi-Function Panel (Panel Illumination / Fuel Control)
6	Overhead Map Light Intensity Panel	21	Multi-Function Panel (Electrical & Engine Start)
7	Nosewheel Tiller	22	Control Display Units (CDUs)
8	Nav Source Selector Panel	23	Radio Management Unit
9	Master Annunciators	24	Landing Gear Lever & Indicators
10	Thrust Reverser Enable Panel	25	Anti-Ice Systems Control Panel
11	Engine Fire Annunciators	26	Hydraulics Control Panel
12	Autopilot	27	Cabin Pressurization Control Panel
13	Standby Radio Control Unit	28	Cabin Environmental Control Panel
14	Standby Primary Instruments	29	Right Panel Illumination
15	Standby Engine Instrument Panel	30	APU Control Panel

Angle of Attack Indicator

The Angle of Attack (AOA) Indicator displays a normalized representation of the angle of attack of the leading edge of the wing to the oncoming airflow. This assists the pilot in avoiding a dangerous attitude that could result in a stall.

Normalized AOA is a measure of the usable AOA range of an airplane, with 1.0 corresponding to a stall angle of attack in free air and 0.0 corresponding to a zero-lift angle of attack in free air.

During normal operations the pilot would maintain an angle of attack below 0.6, which represents a 30% safety-margin before the onset of a stall.

PFD/MFD Illumination Panel

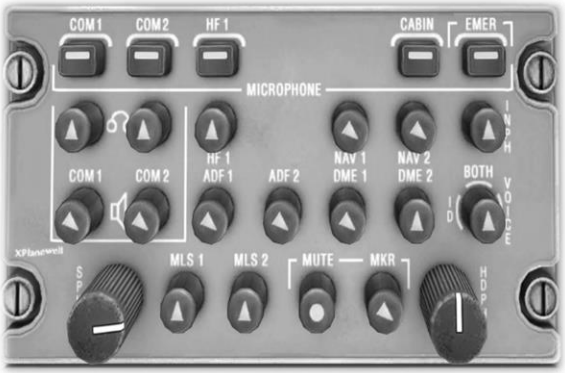
The inner rotary controls the brightness of the Primary Flight Display (PFD) and the outer rotary the brightness of the Multi-Function Display (MFD).

The **SG (Symbol Generator) TEST** button is not modeled.

The **ADC REV** button toggles the active Air Data Computer, which determines the calibrated airspeed, Mach number, altitude, and altitude-trend data from the aircraft's Pitot Static System.

The **AHRS REV** button toggles the active Attitude and Heading Reference System (AHRS). This system uses accelerometers to determine attitude information for aircraft, including roll, pitch, and yaw.

Audio Control Panel



This panels controls the active mic and audio source.

The buttons along the top of the panel activate or deactivate the associated mics. For example, clicking the **COM1** button will activate the mic associated with the **COM1** radio (see: Radio Management Units).

The rotary controls below the buttons behave as toggle switches, and are used to activate, or deactivate the associated audio source. For example, clicking the **COM1** button will activate audio associated with the COM1 radio (see: Radio Management Units).

PFD / MFD Display Control Panel

The **PFD/HIS** button toggles the PFD compass between full and partial modes (not currently modeled).

The **PFD/WX** button toggles the display of weather radar on the compass arc.

The **ET** button starts or resets the elapsed time counter on the Multi-Function Display (MFD).

The **TCAS** button toggles the Traffic Collision Avoidance System. This system uses the transponder signals from nearby aircraft to highlight potential collision risks on the MFD.

The **ACFT SYS** button cycles through system status information on the EICAS.

The **MFD** Map button toggles the MFD display between heading-up and north-up orientations.

The **MFD WX** button toggles the display of (radar-sourced) weather graphics on the MFD.

The **SKP** (Skip) button highlights the next (active flight plan) waypoint on the MFD.

The **RCL** (Recall) button highlights the previous (active flight plan) waypoint on the MFD.

Oxygen Control Panel

Place the **PASS/OXY** rotary control in AUTO mode to inject oxygen into the cabin automatically when the aircraft climbs above 14,500 feet ML. Utilize ON mode for always on.

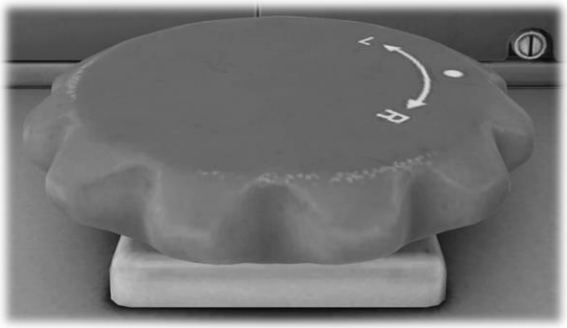
The **LH AHRS** switches are associated with the Attitude and Heading Reference System that provides roll pitch and yaw data to the pilot's PFD. There is a separate system for the co-pilot's PFD.

To manually adjust the Directional Gyro heading, set the left-switch to DG, and use the right switch to advance (UP position) or retard (DOWN position) the heading.

Overhead Map Light Intensity Panel

The **MAP LIGHT** rotary controls the brightness of the overhead flood lighting on the pilot's side.

Nosewheel Tiller



Large aircraft are frequently equipped with a tiller for nosewheel steering. The tiller here functions as a rotary control and will set the direction of the steerable front landing gear.

Nav Source Selector Panel

Controls the NAV system source and bearing pointer source for the PFD below it.

The **NAV** button toggles between the NAV1 and NAV2 systems. This determines the primary nav source displayed (in green) on the PFD.

The **FMS** button toggles the active flight plan between the Flight Management System 1 and Flight Management System 2.

Note: Only one active Flight Management System (FMS1) is supported in X-Plane at time of publication.

The **VOR1** and **VOR2** rotary positions select the VOR source (tuned by the NAV1 and NAV2 radios). This information is displayed as a blue and/or white bearing pointer respectively on the PFD.

The **ADF1** and **ADF2** rotary positions select the NDB source (tuned by the NAV1 and NAV2 radios). This information is displayed as a blue and/or white bearing pointer respectively on the PFD.

Master Annunciators

The Master Warning annunciator illuminates to warn the crew of an aircraft system condition that requires immediate attention.

The Master Caution annunciator illuminates to warn the crew of a condition that requires attention at the first available opportunity.

Additional information pertaining to the nature of the problem is usually provided on the PFD / MFD / EICAS displays or via an audible warning.

Clicking the button acknowledges the condition and cancels the illumination.

Thrust Reverser Control Panel

The **ARM** light illuminates when sufficient hydraulic pressure is available to deploy the thrust-reverse (engine) bucket on this side of the aircraft.

The **UNLOCK** light illuminates when the thrust-reverse bucket on this side of the aircraft is OUT of its normal stowed position.

The **DEPLOY** light illuminates when the thrust-reverse bucket is deployed on this side of the aircraft.

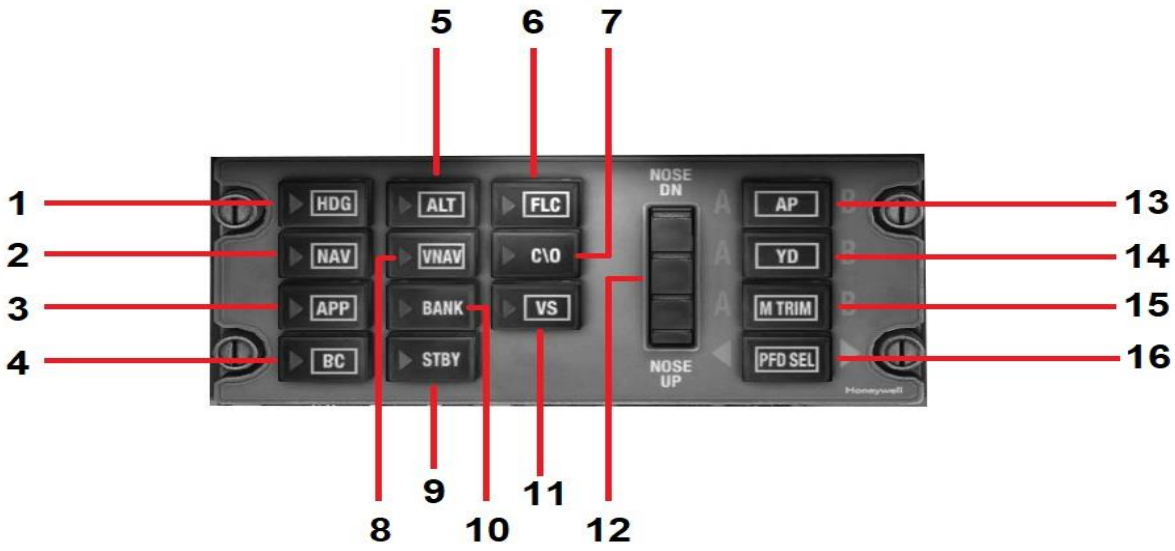
The **STOW EMER** switch will force the thrust-reverse bucket on this side of the aircraft to the stowed position in the event of unwanted deployment.

Engine Fire Annunciators

The **LH ENGINE FIRE** and **RH ENGINE FIRE** annunciator buttons illuminate in the event a fire is detected in the left or right engines respectively.

To extinguish the fire, lift the guard and push the affected annunciator button. The engine cannot be re-started after taking this action.

Autopilot



1	**HDG** **Heading Mode Button**	Places the autopilot in Heading mode. The aircraft will steer according to the heading bug on the PFD that is currently selected (see PFD SEL).
2	**NAV** **Navigation Mode Button**	Places the autopilot in Navigation mode. The aircraft will follow the currently active navigation signal source - LOC (ILS Localizer), VOR (VHF Omnirange) or FMS (Flight Management Computer) flight plan. See Nav Source Selector Panel

3	**APP** **Approach Mode Button**	Used in conjunction with the NAV radios to couple the autopilot to an ILS localizer (and glideslope when available).
4	**BC** **(localizer) Back Course Mode Button**	Used in conjunction with the NAV radios to couple the autopilot to an ILS localizer. The autopilot will not follow a glideslope in this mode.
5	**ALT** **Altitude Mode Button**	Levels the aircraft off at the current altitude
6	**FLC** **Flight Level Change Mode Button**	Captures and holds the current airspeed (IAS) while making a change to a pre-selected altitude. The airspeed will be prioritized by the autopilot at the expense of vertical speed. See also: Instrument Remote Controller Panel
7	**C/O** **Crossover Button**	Not modelled at time of publication.
8	**VNAV** **Vertical Navigation Mode Button**	The autopilot will adhere to the vertical component of a Flight Management System flight plan.
9	**STBY** **Standby Mode Button**	Cancels all autopilot modes except those that maintain basic pitch and roll.
10	**BANK** **Bank Mode Button**	The autopilot will reduce bank roll to 17 degrees when in HDG mode.
11	**V/S** **Vertical Speed Mode Button**	Maintains the current rate of climb or descent. The aircraft will level-off at a pre-selected altitude. See also: Instrument Remote Controller Panel The pilot is responsible for selecting a V/S that does not exceed the performance capability of the aircraft, otherwise the airspeed will be sacrificed by the autopilot to maintain the selected vertical speed.
12	**PITCH WHEEL**	Used in conjunction with VS mode to select the desired rate of climb or decent. The selected rate is displayed on the PFD immediately below the altitude scale. See also (11). Used in conjunction with FLC mode to select the desired airspeed. The selected airspeed is displayed on the PFD immediately above the airspeed scale. See also (6).
13	**AP** **Autopilot Master Button**	Master switch for enabling or disabling all autopilot modes. When the autopilot is engaged, the Yaw Damper will also engage.

14	**YD** **Yaw Damper Mode Button**	Engages the Yaw Damper only (without autopilot) to reduce rolling and pitching oscillations. This uses a computer system that references a series of yaw-rate sensors located on the aircraft.
15	**M TRIM** **Mach Trim Mode Button**	Engages the horizontal stabilizer automatic trim. This manages the angle of attack for optimum airspeed.
16	**PFD SEL** **Primary Flight Display Select Button**	Toggles the Primary Flight Display (pilot or co-pilot) used by the autopilot for lateral and vertical guidance.

Standby Radio Control Unit

This panel provides an additional tuning source for the COM1 and NAV1 radios. It may be used during normal operations, and also in the event the COM1/NAV1 Radio Management Unit fails.

The arrowed button (on the left) toggles the frequency tuning operation between the COM1 and NAV1 radios.

The **NAV AUDIO** button toggles the audible morse-code identifier for the currently tuned NAV1 frequency.

The outer-rotary control (lower-right) sets the integer component of the frequency.

The inner-rotary control (lower-right) sets the decimal component of the frequency.

Standby Primary Instruments

This instrumentation pack features standby:

- Airspeed Indicator / Altimeter
- Attitude Indicator
- Horizontal Situation Indicator

These instruments are powered by a separate (emergency) power supply to provide redundancy for the primary instrumentation.

Standby Engine Instrument Panel

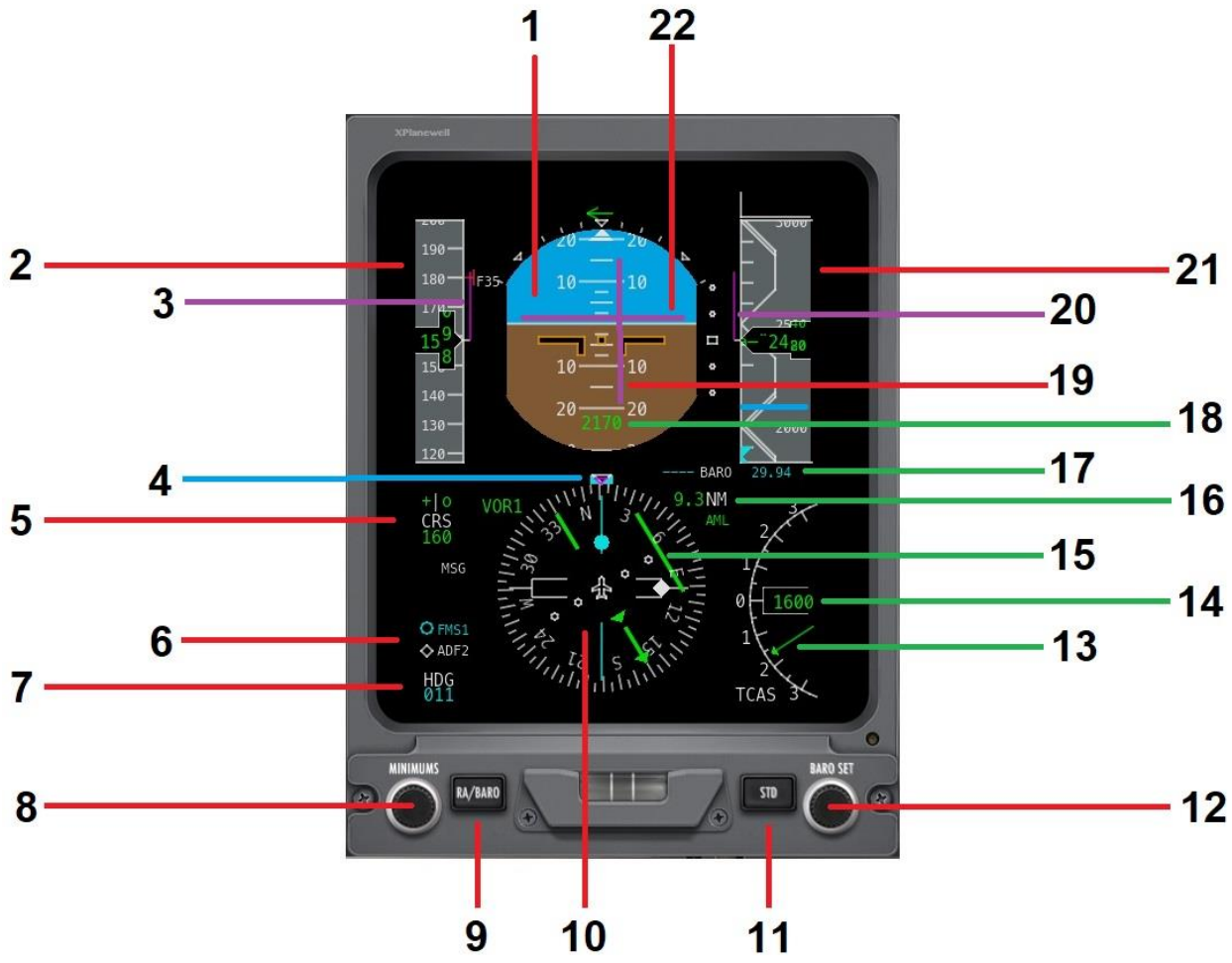
This panel provides an additional source of engine fan speed and temperature information.

N1% is the ratio that the engine's low-pressure compressor fan is turning as a percentage of the maximum.

N2% is the ratio that the engine's high-pressure compressor fan is turning as a percentage of the maximum.

ITT is the Interstage Turbine Temperature of the exhaust gases between the engine's high-pressure and the low-pressure turbines.

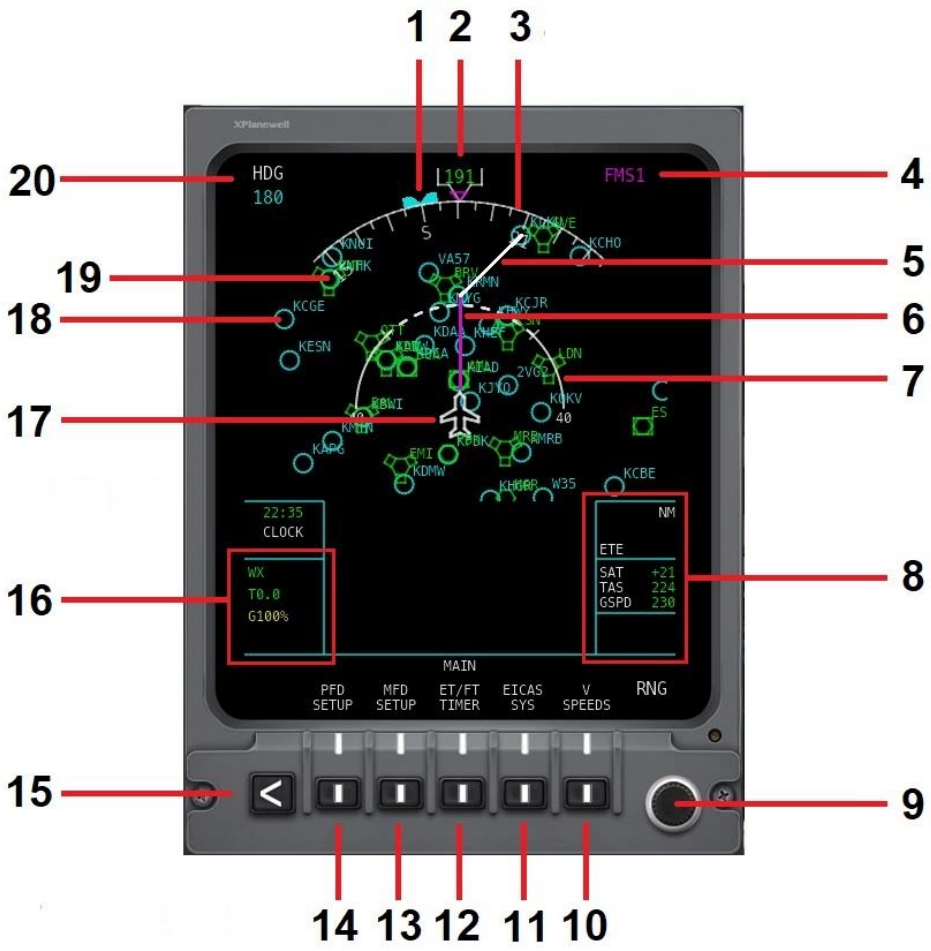
Primary Flight Display (PFD)



1	Attitude Indicator	Displays the aircraft's current attitude relative to the horizon. This informs the pilot if the aircraft is climbing, descending, or rolling left or right.
2	Airspeed Scale	Displays the current indicated airspeed (IAS).
3	Airspeed Trend	Informs the pilot of the current airspeed trend (increasing or decreasing) and the magnitude of the trend (indicated by the length of the line).
4	Heading Bug	Sets the desired heading for the autopilot. See also: Autopilot
5	Desired Course	Displays the (selected) desired course (VOR radial). See:

6	Secondary NAV Sources	See: Nav Source Selector Panel
7	Desired Heading	Displays the (selected) desired heading in degrees. See also: Autopilot
8	Minimums Rotary	Sets the 'Minimums' altitude associated with the current published approach. This is displayed by the blue bar on the altitude scale.
9	RA/BARO Button	Toggles the 'Minimums' altitude selector (see 8) between pressure altitude (BARO) and radar altitude (RA).
10	**Horizontal Situation Indicator (HSI)**	Display the (magnetic) heading currently being flown. Also supported is an adjustable heading bug used in conjunction with the autopilot (in HDG mode), and a course indicator (used in conjunction with a VOR). When enabled, bearing pointers are also be displayed here (See: Nav Source Selector Panel).
11	**STD Button**	Toggles the altimeter setting between standard pressure (STD / 29.92 millibars) and current actual pressure.
12	**BARO SET Rotary**	Sets the current altimeter atmospheric pressure.
13/14	Vertical Speed Indicator	Displays the rate of climb or descent (Vertical Speed) in feet per minute. This combines an analog and digital presentation.
15	Course Deflection Indicator	Displays deviation from the selected course. The green bar indicates if the aircraft is right, or left of the desired course, and the magnitude of the deviation. Steer towards the bar to achieve the desired course.
16	Distance To Primary NAVAID	Displays the distance to the selected (primary) navigation aid when this features Distance Measuring Equipment (DME).
17	Altimeter Setting	Displays the current altimeter setting when not using standard pressure (STD).
18	Radar Altimeter Altitude	Displays the Altitude Above Ground (AGL) by utilizing the on-board radar altimeter. This is operational only within 2500 feet of the ground.
19	Flight Director Lateral Deviation Bar	When the aircraft is following a flight-plan, or according to a navigation aid, this bar informs the pilot to steer left, or right, to intercept the desired track.
20	Altitude Trend	Informs the pilot of the current altitude trend (increasing or decreasing) and the magnitude of the trend (indicated by the length of the line).
21	Altimeter Scale	Displays the current (pressure) altitude.
22	Flight Director Vertical Deviation Bar	When the aircraft is following a flight-plan, or according to a navigation aid, this bar informs the pilot to climb, or descend, to intercept the desired altitude.

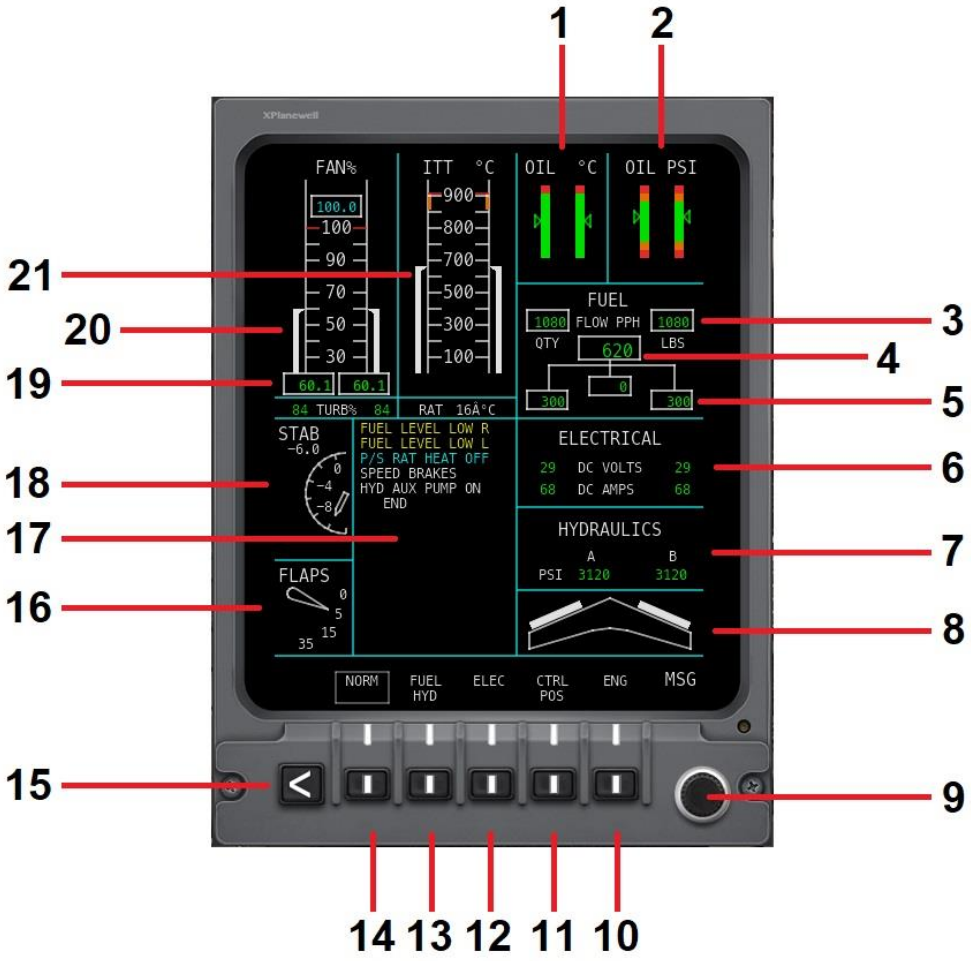
Multi-Function Display (MFD)



1	Heading Bug	Indicates the current heading for the autopilot (when applicable). See: Autopilot
2	Heading	Displays the current (magnetic) heading.
3	Compass Arc	
4	Flight Management System (FMS) Nav Source	Indicates the Flight Management System (FMS1 or FMS2) currently coupled to this MFD for flight plan route display. **Note:** Only one active Flight Management System (FMS1) is supported in X-Plane at time of publication.
5	Flight Plan Route	The white line indicates a future flight plan segment.

6	Flight Plan Route	The magenta line indicates the current flight plan segment.
7	Range Arc	Displays a fictitious arc ahead of the aircraft to provide a reference range. In this example, the range is 40 nautical miles. The range can be adjusted using rotary control 9.
8	Elapsed time group	This group provides estimated time enroute (ETE - when a flight plan is in effect), static (outside) air temperature (SAT), true airspeed (TAS), and ground speed (GSPD).
9	RNG (range) Rotary	Sets the range (scale) of the (plan view) map.
10	V-SPEEDS Button	For the manual setting of the takeoff and landing v-speeds. Not currently supported.
11	EICAS SYS Button	Displays a sub-set of the EICAS (Engine Indicating And Crew Alerting System) information provided (in full) by the dedicated EICAS display to the right of the MFD. Secondary buttons are presented for the display of fuel and hydraulic status (FUEL HYD), electrical status (ELEC), APU status (APU) and engine status (ENG).
12	ET / FT TIMER Button	Used to start, reset and display the total elapsed time and flight time.
13	MFD SETUP Button	Controls the information displayed by the MFD. Secondary buttons are displayed enabling the pilot to include, or suppress traffic positions (TRAFFIC), terrain radar (TERRAIN), airports (APTS) and VOR navigation aids (VOR).
14	PFD SETUP Button	Controls the barometric pressure information displayed when setting the altimeter on the PFD. Secondary buttons are displayed enabling the pilot to toggle between inches of mercury (IN) and millibars (HPA).
15	RTN (return) Button	Returns to the previous level in the MFD function hierarchy.
16	Weather Radar Status Group	This group provides the status of the weather radar data displayed on the map. When WX is illuminated, weather radar is enabled. The radar antenna tilt (angle) and sensitivity gain are also displayed here. These are not modelled at time of publication.
17		Represents this aircraft.
18		Represents and airport.
19		Represents a navigation aid.
20	Digital Heading Bug Display	A digital representation for the heading bug. See (1).

Engine Indicating And Crew Alerting System (EICAS)



1	Oil Temperature	Oil temperature in degrees Celsius for the left and right engines.
2	Oil Pressure	Oil pressure in PSI for the left and right engines.
3	Fuel Quantity	Fuel quantity remaining for the left and right tanks
4	Fuel Flow	Total fuel flow in pounds per hour.
5	Fuel Flow Per Engine	Fuel flow in pounds per hour to the left and right engines.

6	Electrical Page	Available voltage (Volts) and current (Amps) for battery BUS1 and BUS2.
7	Hydraulic Page	Available hydraulic pressure (PSI) for hydraulic systems A and B.
8	Leading Edge Slat Status	Status of the (wing leading edge) slats. When the graphic is visible, white denotes deployed, and orange denotes deploying, or retracting.
9	CAS (Crew Alerting System) Page Scroll Rotary	Used to scroll the CAS messages when they exceed the capacity of the page. See (17).
10	ENG Button	Not modeled at time of publication.
11	Control Positions Button	Graphic display of the control positions for the ailerons, elevators, and rudder relative to their central positions.
12	ELEC Button	Appends battery temperature (degrees Celsius) and voltage (Volts) to the electrical page. See (6).
13	FUEL/HYD Button	Appends the fuel temperature (tanks) and fuel temperature (engines) to the fuel Page. See (3), (4), (5).
14	NORM Button	Returns the MFD to the default state.
15	RTN (return) Button	Not modeled at time of publication.
16	Flap Indicator	Displays the current status of the (wing trailing edge) flaps (degrees).
17	CAS (Crew Alerting System) Page	Displays annunciator messages to the crew. Four levels of severity are supported: • Warning (Red) • Caution (Amber) • Advisory (Cyan) • Status (White) See also (9).
18	Horizontal Stabilizer (elevator) Trim Indicator	Displays the horizontal stabilizer (elevator) trim in digital and analog formats.
19 & 20	Fan RPM (N1)	Displays the fan RPM (N1) for the left and right engine in digital and analog formats. This is the ratio that the engine's low-pressure compressor fan is turning as a percentage of the maximum.
21	ITT (Interstage Turbine Temperature)	Displays the Interstage Turbine Temperature (ITT) for the left and right engine in digital and analog formats. This is the temperature of the exhaust gases between the engine's high-pressure and the low-pressure turbines.

Multi-Function Panel (Panel Illumination / Fuel Control)

The cross-feed rotary controls the fuel cross-feed valves: Set to **LH TANK** to provide fuel from the left tank to the right engine. Set to **RH TANK** to provide fuel from the right tank to the left engine.

When the **GRAVITYT XFLOW** switch is set, gravity driven cross-feed of fuel between the left and right tanks is enabled. This is a backup to the pump-driven cross-feed system and prevents a quantity differential between the tanks from occurring.

The **CTR WING XFER** switches control the transfer of fuel from the center tank to the wing tanks (which feed the engines). In the NORM positions, automatic transfer occurs as required. In the ON positions, transfer is always on.

The **EMERG LT** switch controls the emergency lighting system in the event power from the main battery buses is lost. Set switch to middle position (ON) to ARM the system and deploy emergency lighting automatically when needed. Set switch to the top position to force the emergency lights on.

The **EL** rotary controls the brightness of the analog instrumentation back-lighting.

The **DAY/NITE DIM** switch sets day or night mode for the brightness of the instrument panel (text) back-lighting.

The **FLOOD LTS** rotary controls the brightness of the flood lighting beneath the instrument panel glareshield.

The **LH** rotary controls the brightness of the instrument panel back-lighting.

The **CTR** rotary controls the brightness of the center console back-lighting.

Multi-Function Panel (Electrical & Engine Start)

The **LOAD SHED O'RIDE** switch controls power to the primary avionics in the event of a generator failure. In override mode, the PFD, MFD and EICAS displays will remain on in the event of a generator failure. Otherwise, these displays will turn off to prevent unnecessary battery depletion.

The **LH GEN / RH GEN** switches enable the left and right generators, which provide electrical power (relieving the batteries) when the engines are running.

The **BATT1 / BATT2** switches energize the left and right battery buses, which provide power when the engines are not running.

The **EXT PWR** switch enables power via an external (ground services) source.

The **FUEL BOOST LH / RH** switches enable the fuel boost pumps. When in NORM mode, the pumps will engage automatically as required. In the UP position, the selected pump is always on.

The **ENGINE START LH/RH** buttons start the selected engine provided the necessary APU bleed air pressure is available.

The **ENGINE START DISENGAGE** button cancels the engine start currently in process.

The **FADEC LH/RH** switches control the active FADEC (Full Authority Digital Engine Control) Computer. In NORM mode, computer A is selected. In SELECT mode, computer B is selected. Following a detected fault, and appropriate action, the RESET position may be used to clear the fault memory.

The **AVIONICS POWER** switch energizes the electrical bus that provides power to the primary avionics (PFD, MFD, Flight Management System (FMS) and radios).

The **EICAS POWER** switch energizes the electrical bus that provides power to the Engine Indicating And Crew Alerting System (EICAS).

The **IGNITION LH/RH** switch controls the engine ignition system. In NORM mode, the ignition will activate automatically during engine start and icing conditions. The UP position forces the ignition to be always on.

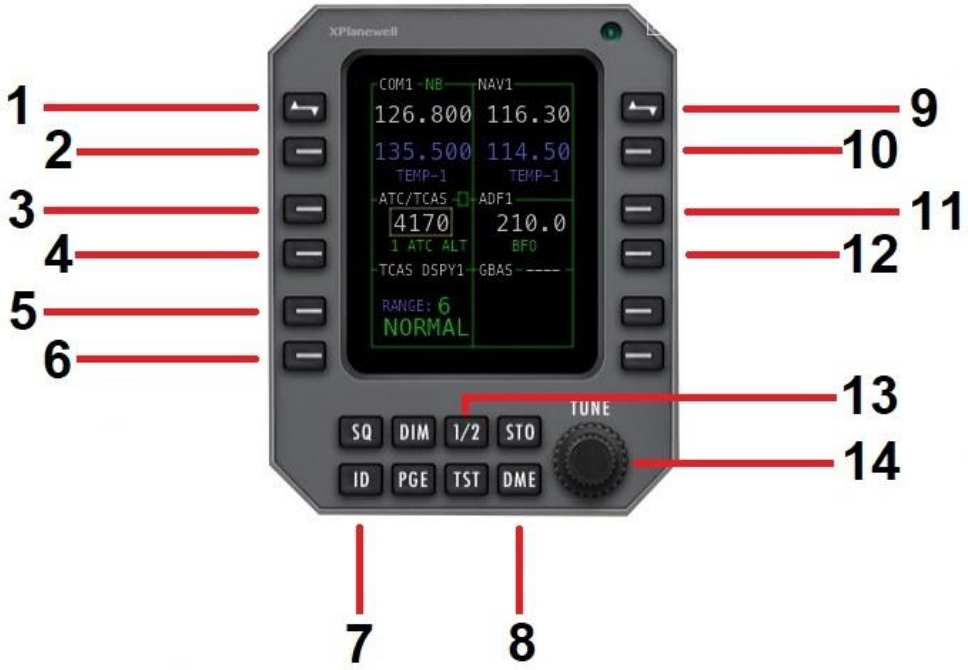
The **STBY PWR** switch activates the standby power system in the event the generators fail in flight. This provides power to the Standby Primary Instruments.

Control Display Units (CDUs)

The Control Display Unit (CDU) provides the flight crew with an interface to the Flight Management System (FMS) - a centralized computer system used in airliners (and other high-performance aircraft) to manage many of the aircraft systems, including (but not limited to) the flight plan.

See the (separate) **X-Plane Flight Management System (FMS) Manual** for comprehensive instructions in relation to the function and operation of the CDU, and Flight Management System.

Radio Management Units



1	COM Frequency Toggle Button	Toggles the active and standby COM (communication) frequency.
2	COM Standby Frequency Select Button	Selects the standby COM (communication) frequency. This is a prelude to changing the standby frequency using the tuning rotary (16).
3	Transponder Code Select Button	Selects the transponder code. This is a prelude to setting or changing the code following instructions from ATC.
4	Transponder Mode Select Button	Toggles between the transponder modes (Standby and ALT [altitude]).
5	TCAS Range Toggle Button	Selects the desired range (6, 12, 20 or 40 Nautical Miles) for the display of TCAS (Traffic Collision Avoidance System) information on the Primary Flight Display (PFD).
6	TCAS Mode Toggle Button	Selects the desired TCAS (Traffic Collision Avoidance System) mode ((NORMAL [scan above and below], (scan) ABOVE or (scan) BELOW).
7	Transponder IDENT Button	The IDENT feature highlights your location to the ATC controller, and should only be used when instructed.

8	DME Select Button	Selects the DME (Distance Measuring Equipment) frequency. This is a prelude to changing the (military) TACAN channel to receive the DME portion of TACAN (Tactical Air Navigation System) navaid signals.
9	NAV Frequency Toggle Button	Toggles the active and standby NAV (navigation aid) frequency.
10	NAV Standby Frequency Select Button	Selects the standby NAV (navigation aid) frequency. This is a prelude to changing the standby frequency using the tuning rotary (16).
11	ADF Frequency Select Button	Selects the ADF (Automatic Direction Finding) frequency. The frequency may be changed using the tuning rotary (16).
12	ADF Mode Select Button	Toggles the ADF mode. Supported: ANT (Antenna - no computed bearing information), ADF (relative bearing to the station is computed), BFO (Beat Frequency Oscillator - the receiver generates an audio tone to aid tuning)
13	Radio Select Button	Couples the unit to the COM1/NAV1 or COM2/NAV2 radios.
14	Tuning Rotary	Changes the selected frequency or transponder code. The outer-rotary affects the numeric component, and the inner-rotary affects the decimal component.

Landing Gear Lever & Indicators

Used to actuate the landing gear after take-off or prior to landing.

Select the UP position to retract the landing gear.

Select the DOWN position to extend the landing gear.

The green annunciators indicate the nosewheel, left and right landing gear are extended and locked.

The orange annunciator indicates the landing gear is unlocked (not safe for landing). This should extinguish when the gear is fully extended.

Anti-Ice Systems Control Panel

The PITOT/STATIC switches enable heating elements built into the left and right pitot tubes.

The WING INSP LIGHT switch illuminates the leading edge of the left and right wings, for visual ice accumulation inspection.

The WINDSHIELD switches enable the heating elements built into the windshields and left and right forward cockpit side windows. The ON position applies a low heat for ice prevention. The O'RIDE position applies a high heat for rapid de-icing.

The WS/AIR switch directs warm air to the windshield and left and right forward cockpit side-windows for de-fogging.

The WING XOVER / NORM switch directs engine bleed air to prevent ice accumulation on the inboard leading edge of the wings. Use the XOVER position in the event of a single engine failure. This will direct the bleed air to both wings from the remaining good engine.

The SLAT switch directs engine bleed air to prevent ice accumulation on the outboard leading edge of the wings.

The ENGINE LH / RH switches enable de-icing of the left and right engine inlets.

The STABILIZER LH /RH switches enable de-icing of the left and right horizontal stabilizer leading edges.

Hydraulics Control Panel

The A AUX PUMP switch enables the auxiliary hydraulic pump in the event of an engine failure. This pump is located outside the potential damage zone.

The PUMP UNLOAD switches open the relief valves for hydraulic systems A and B in the event of excessive pressure.

The ANTISKID switch enables the anti-lock braking system.

The GND REC / ANTI COLL switch controls the tail-mounted (red) ground recognition light, and the wingtip-mounted anti-collision strobe lights.

The SEAT BELT LTS switch illuminates the fasten seatbelt indicators in the cabin.

The NAV switch illuminates the red, green and white navigation lights located on the wingtips and tail-section respectively.

The TAIL FLOOD switch illuminates the rear-facing tail-section floodlighting.

Cabin Pressurization Control Panel

The WEMAC BOOST switch increases ventilation airflow to the directional louvres above each seat in the cabin.

The guarded CABIN DUMP switch provides the pilot with a rapid dump capability. This opens the outflow valves, releasing cabin pressure and equalizing with the outside environment.

The ISO VLV CLOSE switch opens the isolation valve that allows either engine to operate both environmental control unit PACs (Pressurization Air Conditioning kits).

The MANUAL switch enables manual control of the cabin pressure. This is used together with the HLD toggle (to raise or lower the pressure) and RATE rotary (to control the rate of change).

The ALT SEL switch (together with the ‘A’ (altitude) rotary provides the pilot with a manual pre-set for the (final) automated cabin altitude. In NORM mode a fully automated schedule is followed.

The PAC BLEED SELECT switch selects which engine ports HP (High Pressure turbine) or LP (Low Pressure turbine) are used to source the bleed air necessary to operate the PACs (Pressurization Air Conditioning kits).

Cabin Environmental Control Panel

This panel features environmental controls for the cockpit (panel-left) and cabin (panel-right).

The CKPT TEMP SEL and CABIN TEMP SEL rotaries control the temperature in the cockpit and cabin respectively. The rotary in the center provides the option to view the current temperature (via the digital display above) in these locations.

The PAC (Pressurization Air Conditioning kit) rotaries control the air-conditioning. The HIGH position is usually used when the aircraft is on the ground.

The L ENG BLD AIR and R ENG BLD AIR rotaries select the bleed air source from the engines used to power the environmental system. The options are HP (High Pressure turbine) or LP (Low Pressure turbine).

Right Panel Illumination

The R**H PANEL LIGHTS** rotary controls the brightness of the left-side instrument panel back-lighting.

The DG switch aligns the AHRS (Attitude Heading Reference System) to the current heading of the directional gyro.

The LH SLEW / RH SLEW switch aligns the left or right AHRS (Attitude Heading Reference System) to the current compass heading.

APU Control Panel

The MAP LIGHT rotary controls the brightness of the right-side overhead map light.

When the BLEED AIR switch is in the ON position, the Load Control Valve is opened to provide pneumatic bleed air pressure to the engines (for start-up) and air-conditioning.

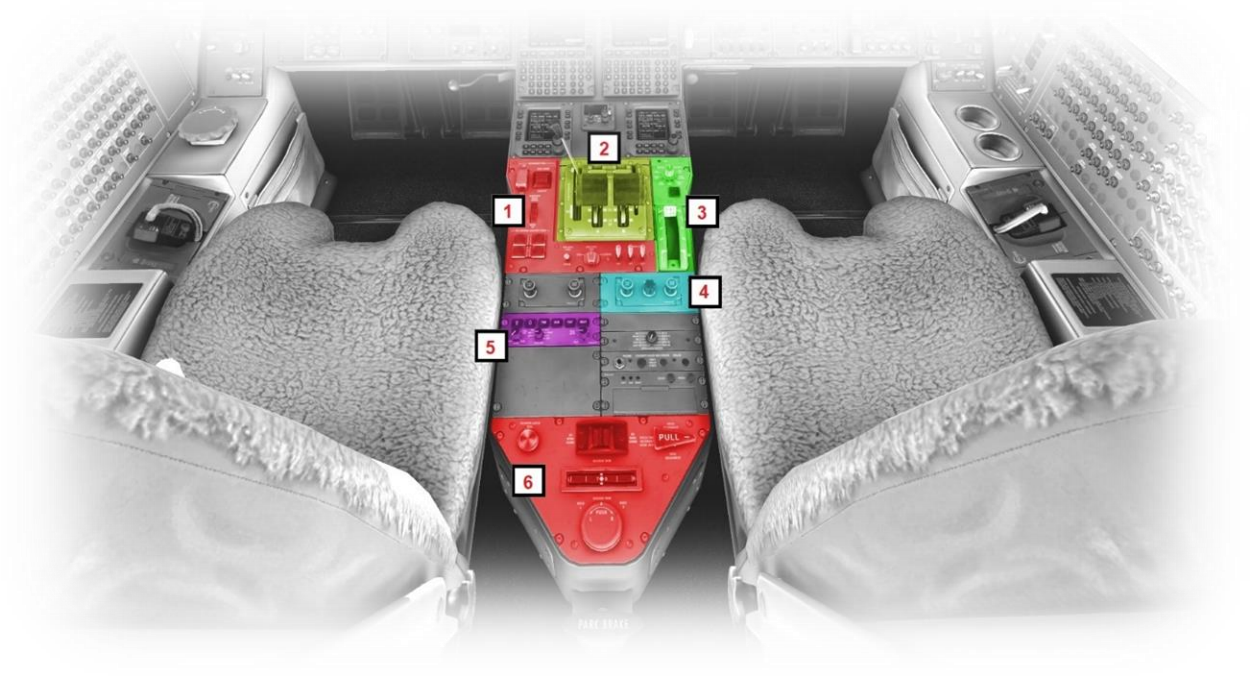
The GENERATOR switch enables the APU-driven generator which provides temporary electrical power (relieving the batteries) until the engines are operating.

Move the APU START switch to the UP position (and hold briefly) to start the APU turbine.

The TEST button illuminates all of the digital displays on the APU panel to check they are operational.

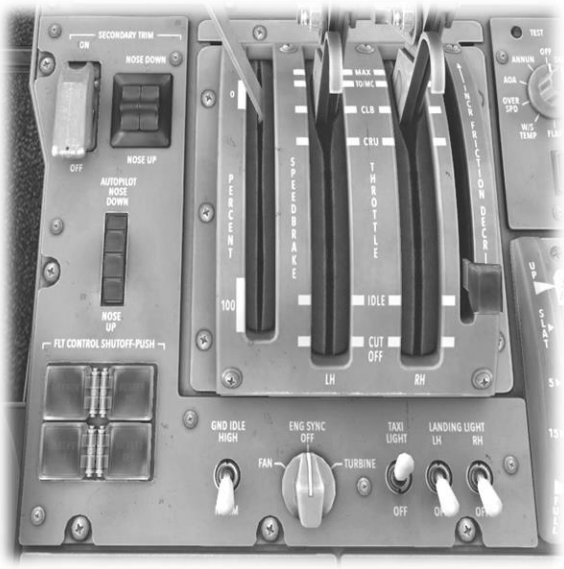
The MASTER switch energizes the APU panel.

Center Pedestal



1	Secondary Trim Panel	4	Instrument Remote Controller Panel
2	Throttle Quadrant	5	Color Radar Control Panel
3	Flap Lever	6	Aileron and Rudder Trim Panel

Secondary Trim Panel



In the event the primary pitch trim system fails, the pilot may engage the secondary trim system using the guarded switch on this panel (not currently modeled).

The NOSE DOWN/NOSE UP rocker switch activates the secondary pitch trim system during manual flight, to trim the elevator up, or down.

The AUTOPILOT NOSE DOWN/NOSE UP rocker switch activates the secondary pitch trim system during manual flight, to trim the elevator up, or down when the autopilot is engaged and in either FLC or VS modes.

The GND IDLE switch sets the RPMs of the engines when the throttles are in the idle position. The HIGH position is only used during touch-and-go landings.

The ENGINE SYNC rotary is used to reduce noise and vibration by synchronizing the FAN(s) or engine TURBINE(s) across the two engines. This is analogous to the PROP SYNC feature associated with a propellor-driver aircraft.

The TAXI LIGHT switch illuminates the nose-gear mounted taxi light for ground operations.

The LANDING LIGHTS LH and RH switches illuminate the left and right wing-mounted landing lights for takeoff and landing operations.

Throttle Quadrant

The Citation X is equipped with dual thrust levers – which control the thrust generated by the left and right engines respectively.

Smaller reverse-thrust levers are located behind the (larger) thrust levers.

Also included in this unit is the SPEEDBRAKE handle. This deploys the speed-brake panels which are located on the upper-side of the wings. These panels create drag, and reduce lift, which assists the airplane in losing altitude without pitching the nose down (and gaining unwanted airspeed).

Flap Lever

The Flap Lever operates the wing flaps. Wing flaps change the contour of the wing. When extended, the flaps generate more lift, and more drag, which is beneficial during the takeoff and the landing phases of the flight.

This lever provides the following fixed positions:

- SLAT - Wing leading edge flaps only.
- 5 (degrees of trailing edge flap).
- 15 (degrees of trailing edge flap).
- FULL (35 degrees of trailing edge flap).

Instrument Remote Controller Panel

These panels provide the pilot and co-pilot with independent control over the selected course for VOR navigation and the selected heading for the Autopilot.

The left-side panel sets the course and heading bug for the pilot's Primary Flight Display (PFD). The right-side panel sets the course and heading bug for the co-pilot's PFD.

See also: Nav Source Selector Panel

The ALT SEL rotary sets the altitude pre-select for both PFDs. This is the Autopilot target altitude when in VS or FLC modes

The PUSH SYNC button synchronizes the heading bug to the current heading.

The PUSH DIR button centers the VOR course deflection indicator (CDI) for a direct course to the VOR station.

Color Radar Control Panel

This panel controls the weather radar system. Despite the active hover status of the controls, these features are not modelled at time of this publication.

Aileron and Rudder Trim Panel

The AILERON LATCH lever is used to lock the ailerons in position when the aircraft is not in service. This prevents damage from wind gusts and other incidents.

The AILERON TRIM rocker switch actuates trim tabs on the ailerons that may be used to correct unwanted roll to the left or right.

The RUDDER TRIM rotary actuates trim tabs on the rudder to correct unwanted yaw to the left or right.

The PITCH / ROLL CONNECT rotary is used to disconnect and reconnect the pilot's and co-pilot's independent pitch and roll systems. Normally these are connected but may be disconnected using this rotary in the event of a control issue.

This rotary behaves like a button. Click to cycle the lever through the four available positions.

The PARK BRAKE lever sets and releases the parking brake. Pull the lever up to set the brakes, and push the lever down to release the brakes.

Load Sheet Tables

The tables below illustrate a series of hypothetical load-sheet scenarios. Fuel consumption calculations reference the X-Plane Citation-X and may differ from the real aircraft. Passengers are deemed to have an average weight of 165 lbs. These tables do not include ground operations. Add 2**50 lbs.** of fuel for every **10-minutes** of taxi-time.

PAYLOAD EMPTY:

Flight Time (Minutes)	T/O and Climb Fuel (lbs.)	Cruise Fuel (lbs.)	Total Fuel	Left Wing Tank (lbs.)	Right Wing Tank (lbs.)	Center Tank (lbs.)	# PAX	Baggage Weight (lbs.)	Payload (lbs.)	Basic Empty Weight (lbs.)	Takeoff Weight (lbs.)	CG X-Plane
20	1000	1250	2250	1125	1125		2	0	330	22000	24580	CENTER
40	1000	2500	3500	1750	1750		2	0	330	22000	25830	CENTER
60	1000	3750	4750	2375	2375		2	0	330	22000	27080	CENTER
80	1000	5000	6000	3000	3000		2	0	330	22000	28330	CENTER
100	1000	6250	7250	3500	3500	250	2	0	330	22000	29580	CENTER
120	1000	7500	8500	3500	3500	1500	2	0	330	22000	30830	CENTER
140	1000	8750	9750	3500	3500	2750	2	0	330	22000	31080	CENTER
160	1000	10000	11000	3500	3500	4000	2	0	330	22000	33330	CENTER
180	1000	11250	12250	3500	3500	5250	2	0	330	22000	34580	CENTER

PAYLOAD: LIGHT

Flight Time (Minutes)	T/O and Climb Fuel (lbs.)	Cruise Fuel (lbs.)	Total Fuel	Left Wing Tank (lbs.)	Right Wing Tank (lbs.)	Center Tank (lbs.)	# PAX	Baggage Weight (lbs.)	Payload (lbs.)	Basic Empty Weight (lbs.)	Takeoff Weight (lbs.)	CG X-Plane
20	1000	1250	2250	1125	1125		5	75	900	22000	25150	CENTER
40	1000	2500	3500	1750	1750		5	75	900	22000	26400	CENTER
60	1000	3750	4750	2375	2375		5	75	900	22000	27650	CENTER
80	1000	5000	6000	3000	3000		5	75	900	22000	28900	CENTER
100	1000	6250	7250	3500	3500	250	5	75	900	22000	30150	CENTER
120	1000	7500	8500	3500	3500	1500	5	75	900	22000	31400	CENTER
140	1000	8750	9750	3500	3500	2750	5	75	900	22000	32650	CENTER
160	1000	10000	11000	3500	3500	4000	5	75	900	22000	33900	CENTER
180	1000	11250	12250	3500	3500	5250	5	75	900	22000	35150	CENTER

PAYLOAD: MEDIUM

Flight Time (Minutes)	T/O and Climb Fuel (lbs.)	Cruise Fuel (lbs.)	Total Fuel	Left Wing Tank (lbs.)	Right Wing Tank (lbs.)	Center Tank (lbs.)	# PAX	Baggage Weight (lbs.)	Payload (lbs.)	Basic Empty Weight (lbs.)	Takeoff Weight (lbs.)	CG X-Plane
20	1000	1250	2250	1125	1125		7	125	1280	22000	25530	CENTER
40	1000	2500	3500	1750	1750		7	125	1280	22000	26780	CENTER
60	1000	3750	4750	2375	2375		7	125	1280	22000	28030	CENTER
80	1000	5000	6000	3000	3000		7	125	1280	22000	29280	CENTER
100	1000	6250	7250	3500	3500	250	7	125	1280	22000	30530	CENTER
120	1000	7500	8500	3500	3500	1500	7	125	1280	22000	31780	CENTER
140	1000	8750	9750	3500	3500	2750	7	125	1280	22000	33030	CENTER
160	1000	10000	11000	3500	3500	4000	7	125	1280	22000	34280	CENTER
180	1000	11250	12250	3500	3500	5250	7	125	1280	22000	35530	CENTER

PAYLOAD: HEAVY

Flight Time (Minutes)	T/O and Climb Fuel (lbs.)	Cruise Fuel (lbs.)	Total Fuel	Left Wing Tank (lbs.)	Right Wing Tank (lbs.)	Center Tank (lbs.)	# PAX	Baggage Weight (lbs.)	Payload (lbs.)	Basic Empty Weight (lbs.)	Takeoff Weight (lbs.)	CG X-Plane
20	1000	1250	2250	1125	1125		10	200	1850	22000	26100	CENTER
40	1000	2500	3500	1750	1750		10	200	1850	22000	27530	CENTER
60	1000	3750	4750	2375	2375		10	200	1850	22000	28600	CENTER
80	1000	5000	6000	3000	3000		10	200	1850	22000	29850	CENTER
100	1000	6250	7250	3500	3500	250	10	200	1850	22000	31100	CENTER
120	1000	7500	8500	3500	3500	1500	10	200	1850	22000	32350	CENTER
140	1000	8750	9750	3500	3500	2750	10	200	1850	22000	33600	CENTER
160	1000	10000	11000	3500	3500	4000	10	200	1850	22000	34850	CENTER
180	1000	11250	12250	3500	3500	5250	10	200	1850	22000	36100	CENTER

Checklists

The following check lists are designed with the convenience of the simulation pilot in mind and customized to the X-Plane CITATION X. These differ from those of the real aircraft.

Pre-Flight Exterior Inspection

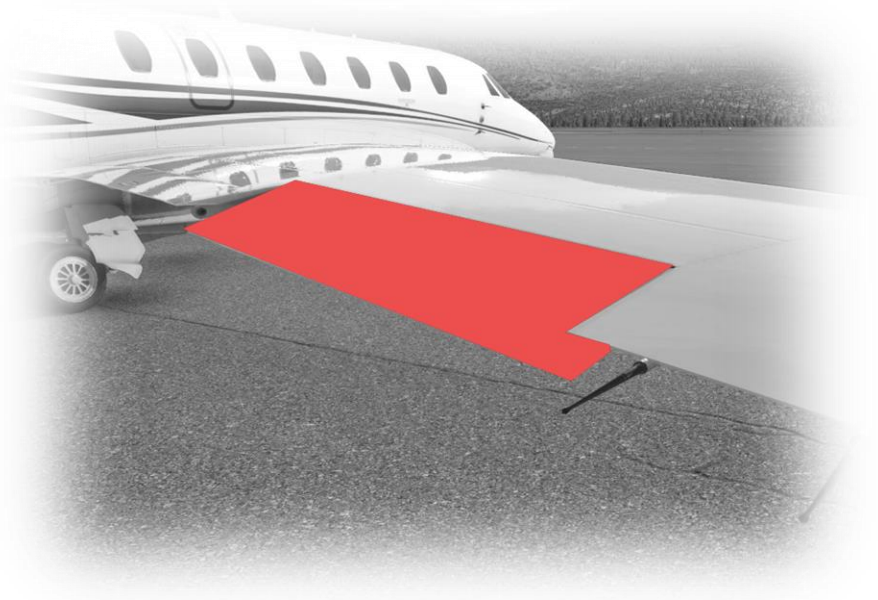
A Pre-Flight Inspection should always precede flight in any aircraft. The purpose of this inspection is to ensure the aircraft is in a state of readiness for the upcoming flight.

In X-Plane, a pre-flight inspection is not merely undertaken to simulate reality, but does in fact have real purpose, because the control surfaces of the aircraft interact directly with the airflow over and around them, just as in real life. As such, correct movement of all control surfaces is necessary for normal flight.

Hydraulic A AUX PUMP - **ON**

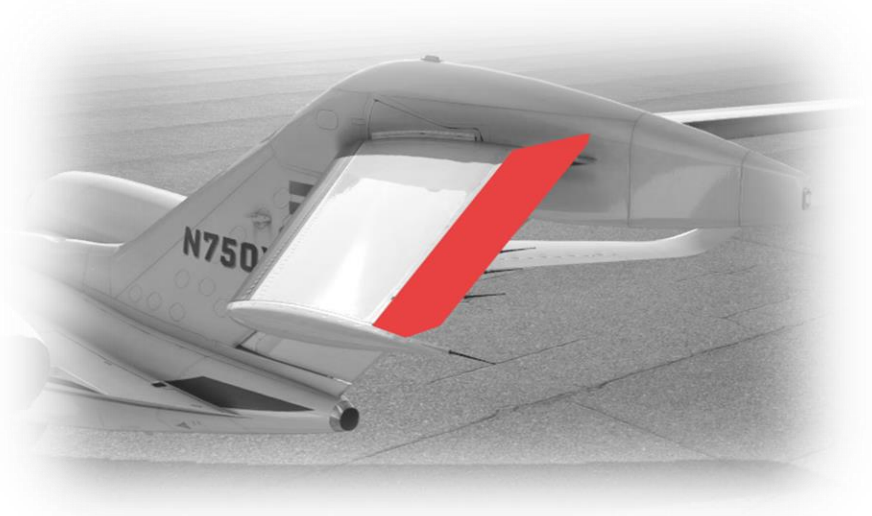
Hold roll axis at full deflection.

Visually check corresponding movement of ailerons.



Hold pitch axis at full deflection.

Visually check corresponding movement of elevators.



Hold yaw axis at full deflection.

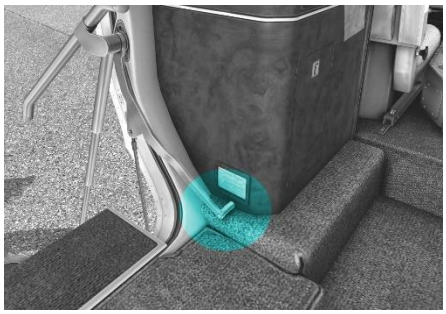
Visually check corresponding movement of rudder.

Hydraulic A AUX PUMP - **OFF**

Cold and Dark to Engine Start

The following check list is a sub-set of the real procedures, and includes only the essential steps leading to engine start:

CABIN DOOR – CLOSED



PARKING BRAKE – CHECK ON

BATT1 & BATT2 – ON

APU MASTER – ON

APU START – LIFT, WAIT, RELEASE

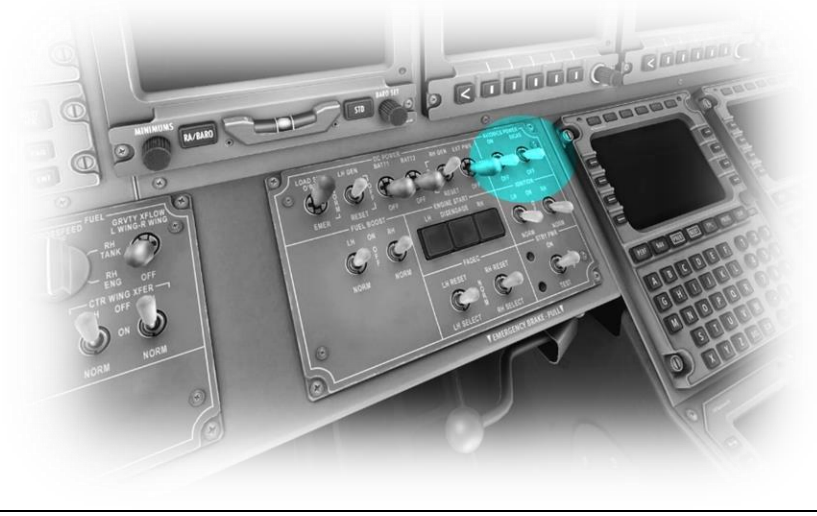
APU RPMs – WAIT FOR 100 %

APU GENERATOR - ON

APU BLEED – ON (center position)

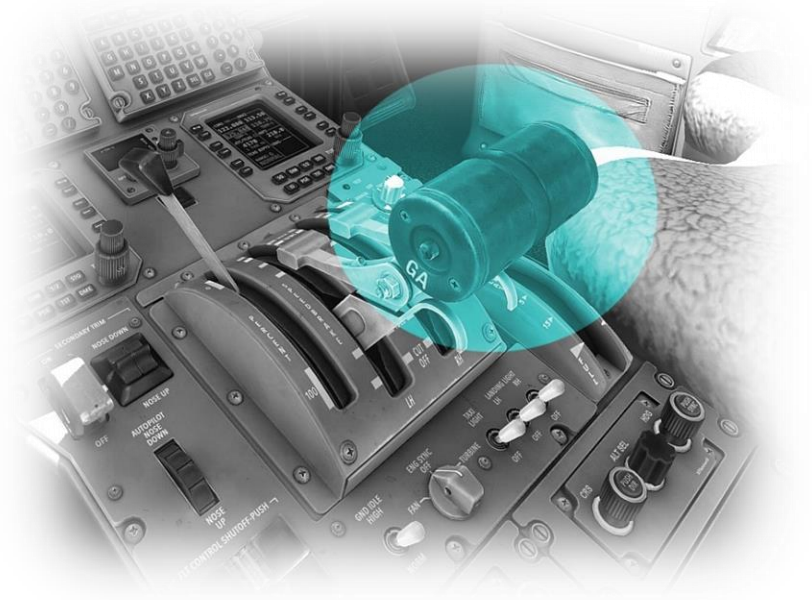
AVIONICS – ON

EICAS - ON

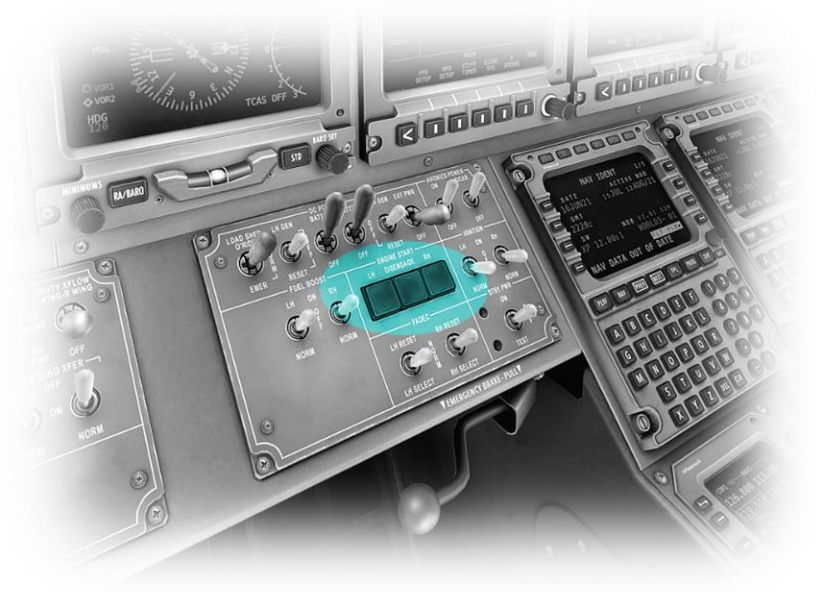


EICAS MODE – ELEC

THROTTLES - IDLE

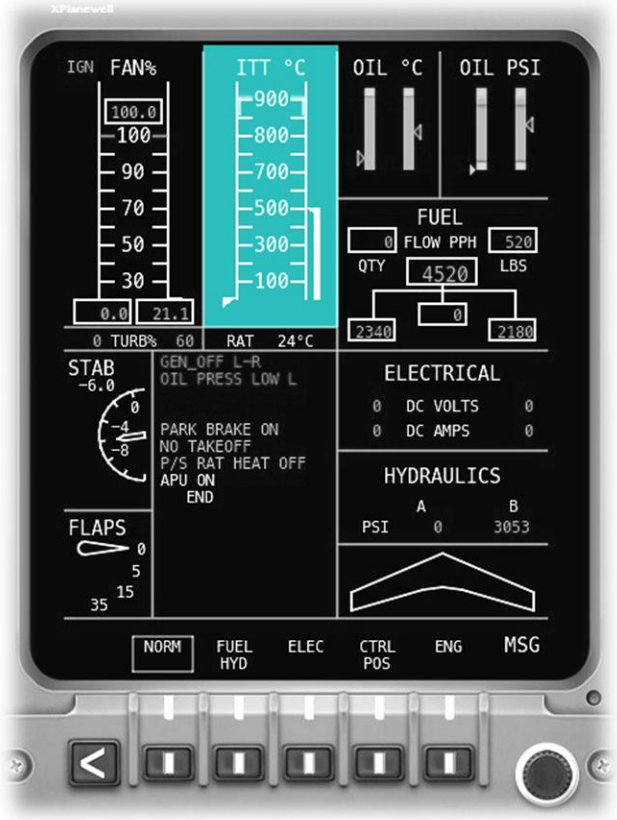


RIGHT ENGINE - START

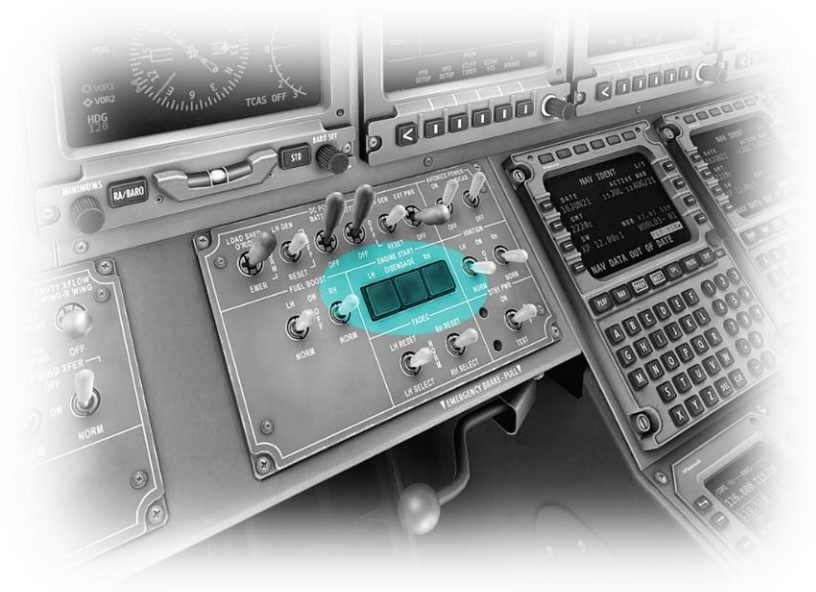


ITT TEMPERATURE – MONITOR

(DISENGAGE STARTER IF REQUIRED)

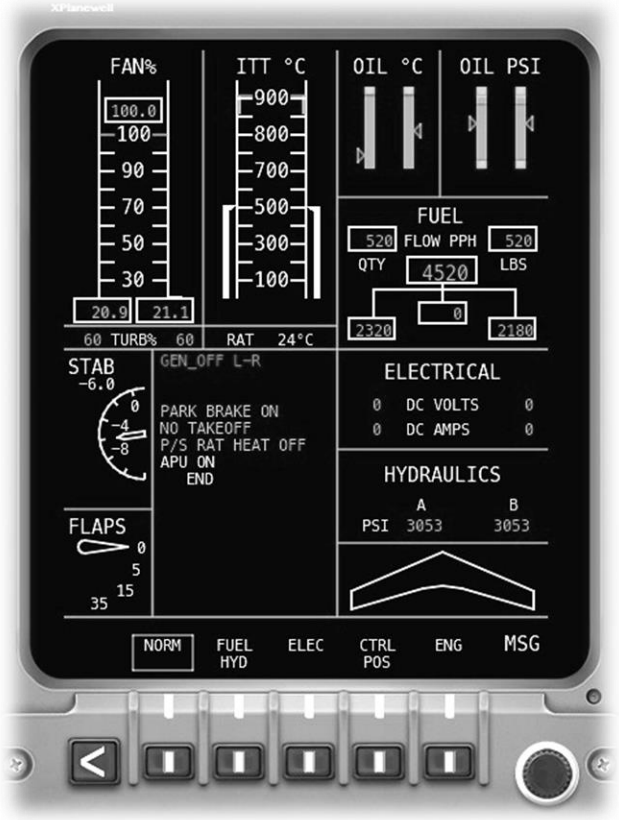


LEFT ENGINE - START



ITT TEMPERATURE – MONITOR

(DISENGAGE STARTER IF REQUIRED)



LH GENERATOR – ON

RH GENERATOR - ON

APU BLEED – OFF

APU GENERATOR – OFF

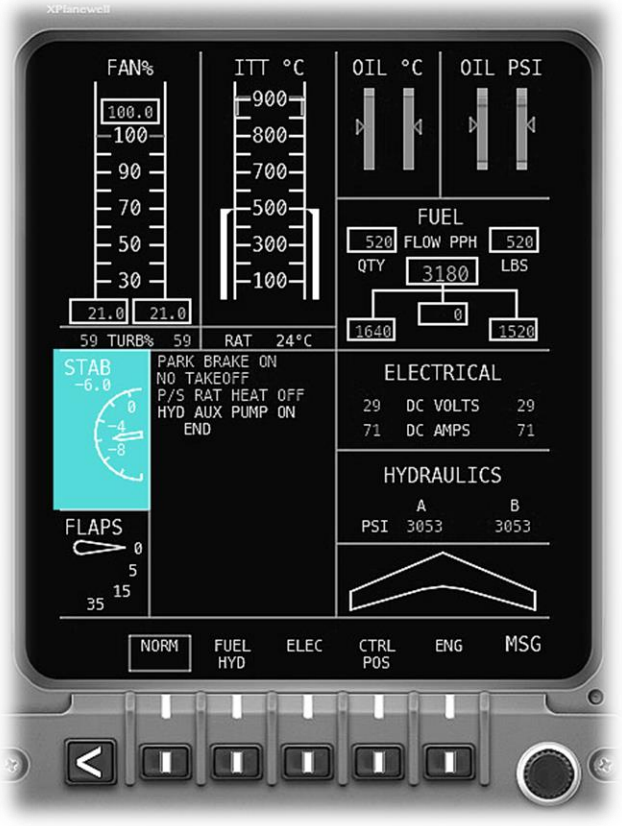
APU STOP – DEPRESS, WAIT, RELEASE

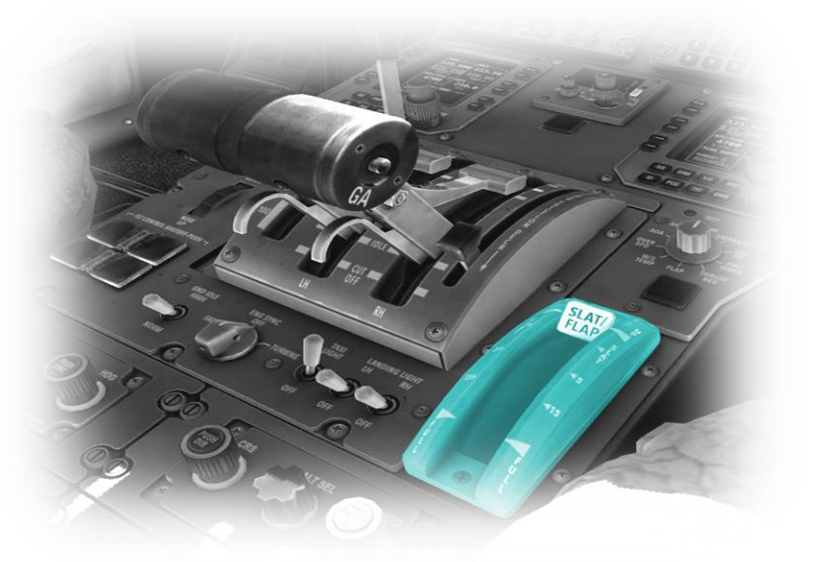
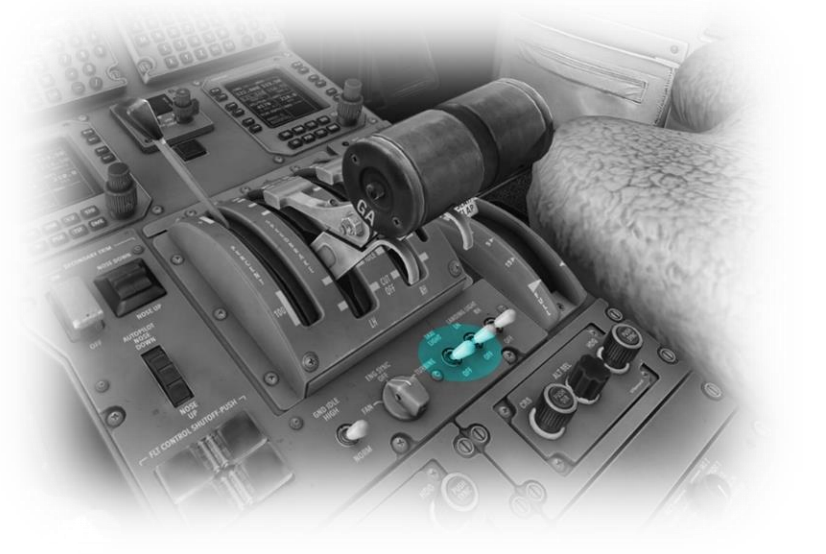
APU MASTER – OFF

LH CENTER WING XFER – NORM

RH CENTER WING XFER - NORM

Before Taxi

SEATBELT SIGN - ON	
STABILIZER TRIM – SET FOR TAKEOFF (- 6.0 degrees) See: Stabilizer Trim:	

FLAPS – SET (5 Degrees)	
FLIGHT CONTROLS – CHECKED (Pitch / Roll / Yaw) See: Roll and Pitch and Yaw	
TAXI LIGHTS - ON	

TRANSPONDER – STANDBY **See: Radio Management Units**	
PARKING BRAKE – OFF	

Before Takeoff

FLAPS – CHECK

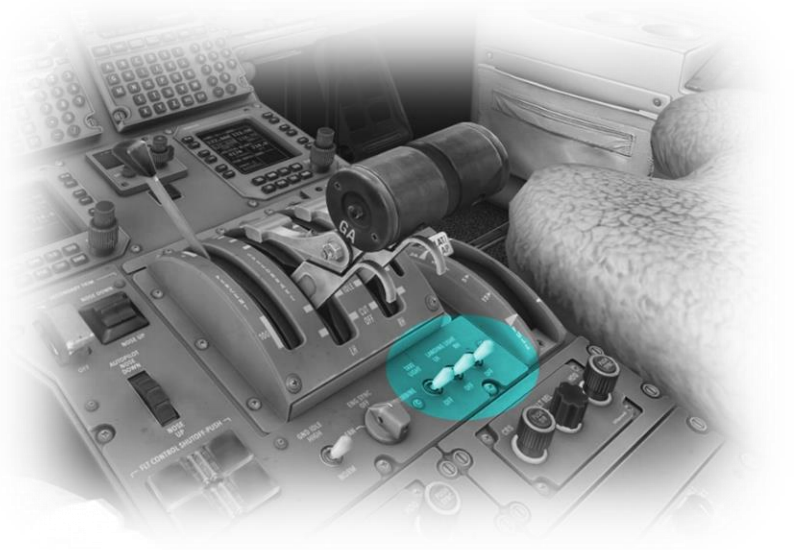
(5 Degrees)

ALTIMETER – SET

See: [Primary Flight Display (PFD)]

LANDING LIGHTS – ON

TAXI LIGHTS – OFF



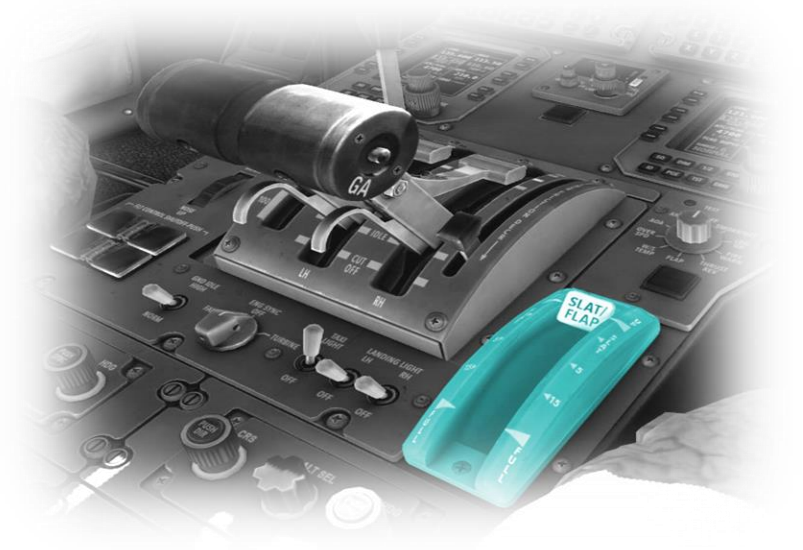
TRANSPONDER – ATC ON

See: [Radio Management Units]

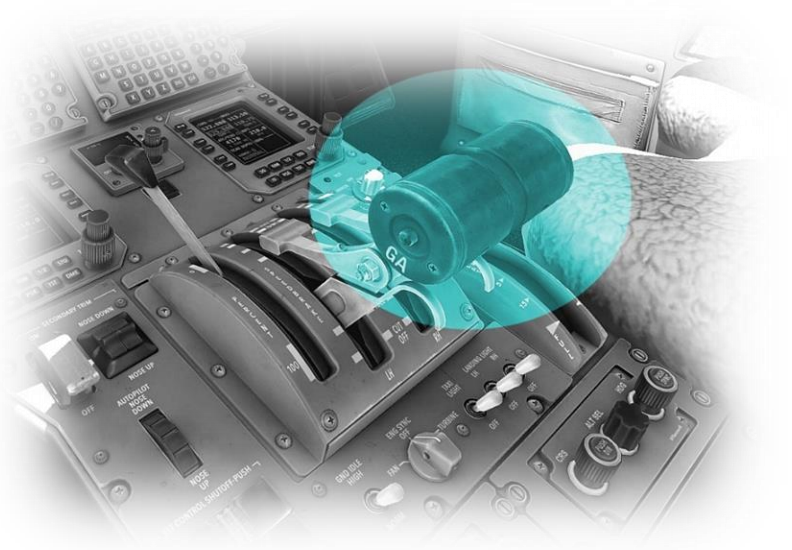
After Takeoff

LANDING GEAR – UP

FLAPS – RETRACTED



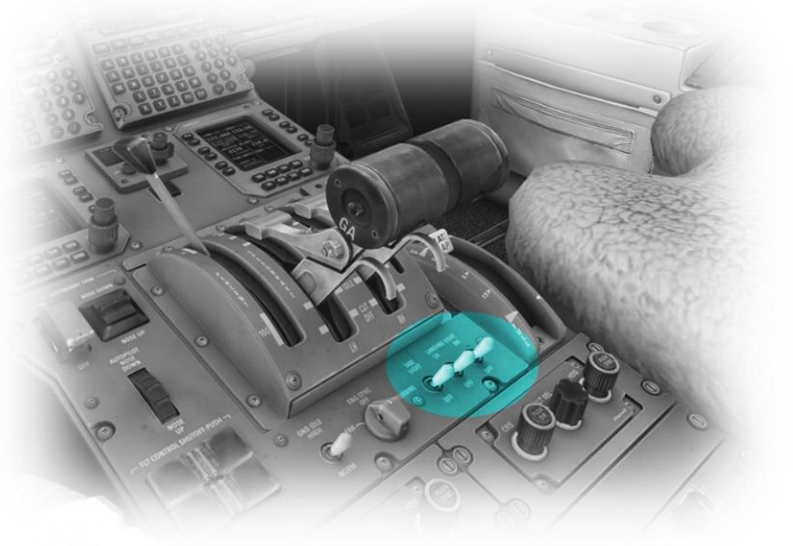
THROTTLES – SET AS REQUIRED



Cruise

SEATBELT SIGN - OFF

LANDING LIGHTS – OFF



ALTIMETER – SET

See: [Primary Flight Display (PFD)]

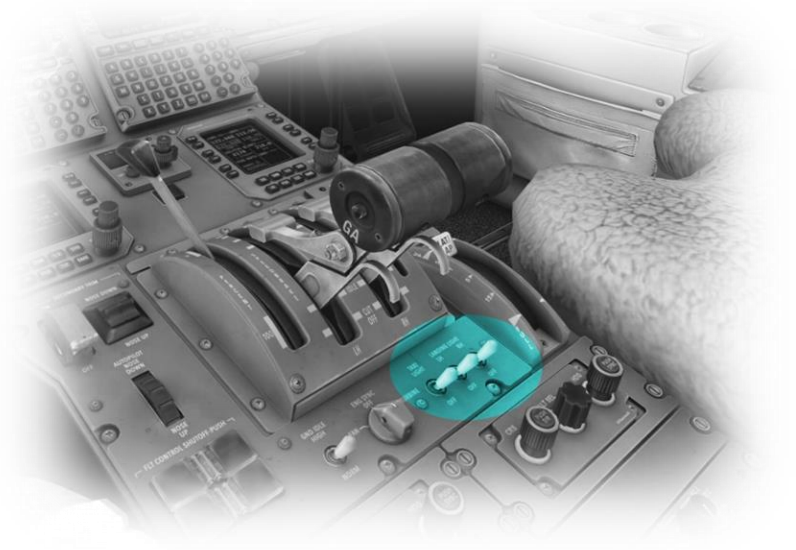
Before Landing

SEATBELT SIGN - ON

ALTIMETER – SET

See: [Primary Flight Display (PFD)]

LANDING LIGHTS – ON



FLAPS – AS REQUIRED

Landing

SPEEDBRAKES – AS REQURIED

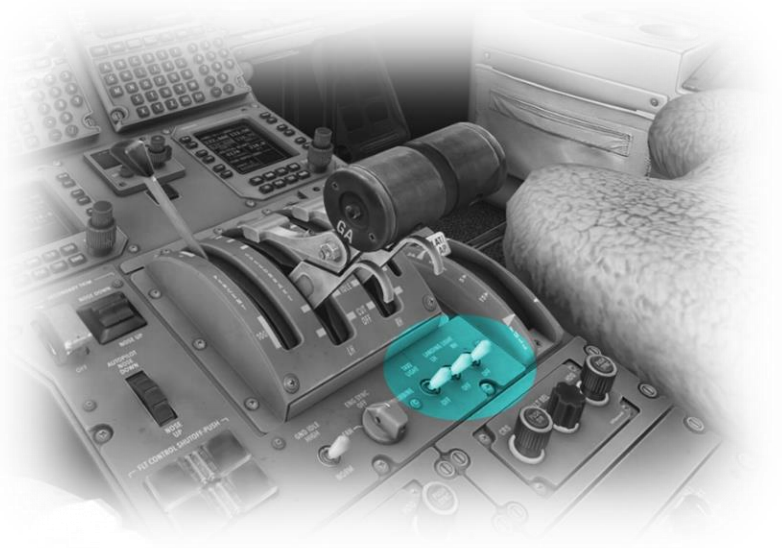
FLAPS – FULL

After Landing

FLAPS – RETRACTED

SPEEDBRAKES – RETRACTED

TAXI LIGHTS – ON



LANDING LIGHTS – OFF

TRANSPONDER – STANDBY

See: [Radio Management Units]

Parking

PARKING BRAKE – ON

THROTTLES – CUT-OFF

SEATBELT SIGN - OFF

LH CENTER WING XFER – OFF

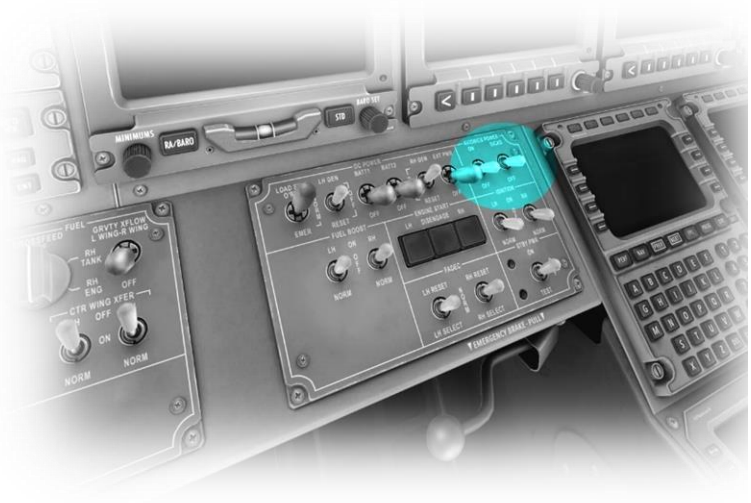
RH CENTER WING XFER - OFF

LH GENERATOR – OFF

RH GENERATOR - OFF

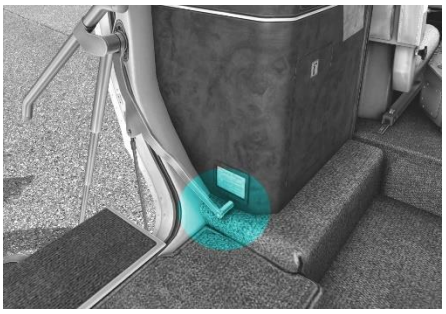
AVIONIC – OFF

EICAS - OFF



BATT1 & BATT2 – OFF

CABIN DOOR – OPEN



Operating-Speeds

Rotate Speed *	Vr	145 KIAS
Stall Speed, Landing Configuration	Vso	115 KIAS
Stall Speed, Clean	Vs1	136 KIAS
Minimum Controllable Speed	Vs	140 KIAS
Best Angle of Climb	Vx	270 KIAS
Best Rate of Climb	Vy	300 KIAS
Maximum flaps Extended Speed	Vfe	180 KIAS
Maximum Operating Speed (Sea Level to 8,000 ft)	Vmo	270 KIAS
Maximum Operating Speed (Above 8,000 ft)	Vmo	350 KIAS
Maximum Mach Number	Vmo	0.935 Mach
Maximum Gear Operating Speed	Vle	210 KIAS
Maximum Gear Extended Speed	Vlo	210 KIAS
Landing (reference) Speed	Vref	132 KIAS
Maximum Demonstrated Crosswind		10 KNOTS

- *Representative value depending on conditions*