

DO NOT USE FOR FLIGHT

B-52 Driver



FLIGHT MANUAL

PART II – Aircraft and Systems

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ABOUT THIS MANUAL

VERSION: 08 DECEMBER, 2010

WARNING: THIS MANUAL IS DESIGNED FOR MICROSOFT® FSX USE ONLY. DO NOT USE FOR FLIGHT.

The 'B-52 Driver FLIGHT MANUAL is organized into three Parts.
Each Part is provided as a separate Acrobat® PDF document:

- **Part I – User's Manual**
- **Part II – Aircraft and Systems** - this document.
- **Part III – Normal Procedures.**

FOR GENERAL INFORMATION ON THE 'B-52 DRIVER' PRODUCT PLEASE USE WWW.CAPTAINSIM.COM .
THIS MANUAL PROVIDES ADDITIONAL INFORMATION ONLY, WHICH IS NOT AVAILABLE ON THE WEB SITE.

PART II – AIRCRAFT SYSTEMS

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INTRODUCTION

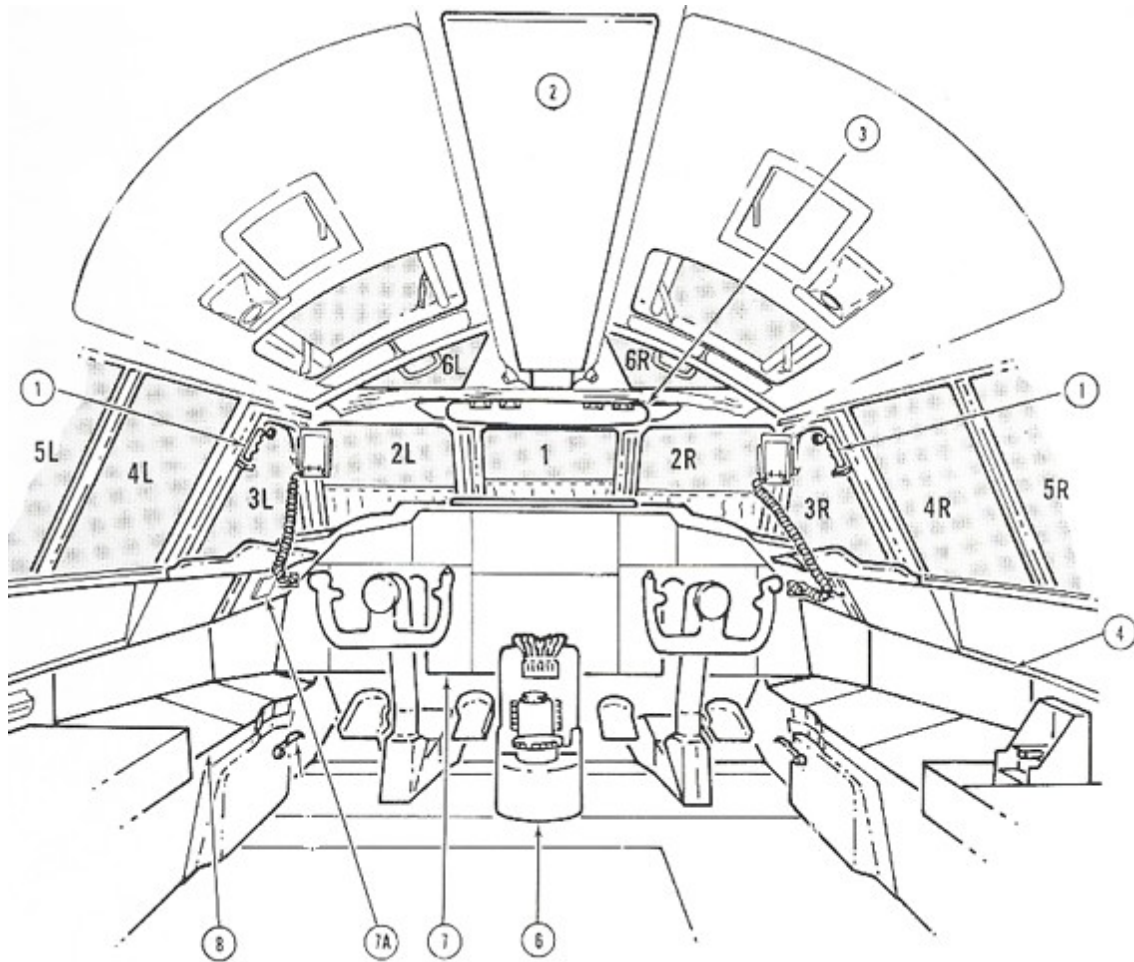
The 'B-52 Driver' is one of the most advanced, complete and accurate digital replicas of the B-52 aircraft ever available for any game platform.

But the 'B-52 Driver' (same as MSFS itself and any MSFS expansion) is a flight simulation software game. Therefore this product should not be used as flight training device (FTD) and/or simulator for flight training purposes.

Moreover the 'B-52 Driver' is [Fun Line](#) product, so it features some of essential systems programming. All items should work as described in this manual. If something is not described as functional (therefore it does not work or does not exist in the model) it is not a system 'bug' but a reasonable simplification.

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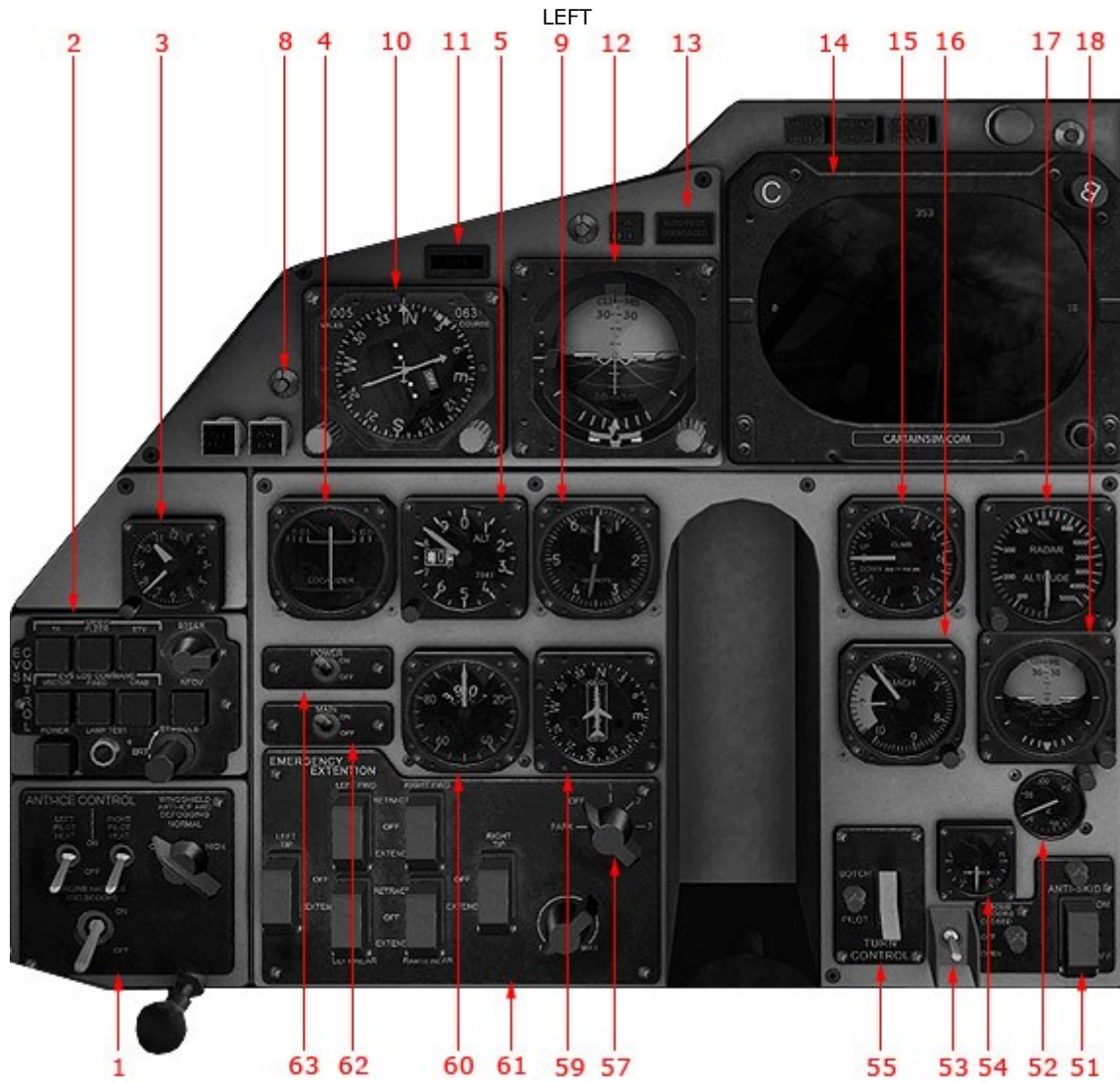
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3. EYEBROW INSTRUMENT PANEL
4. COPILOT'S SIDE PANEL
6. AISLE STAND
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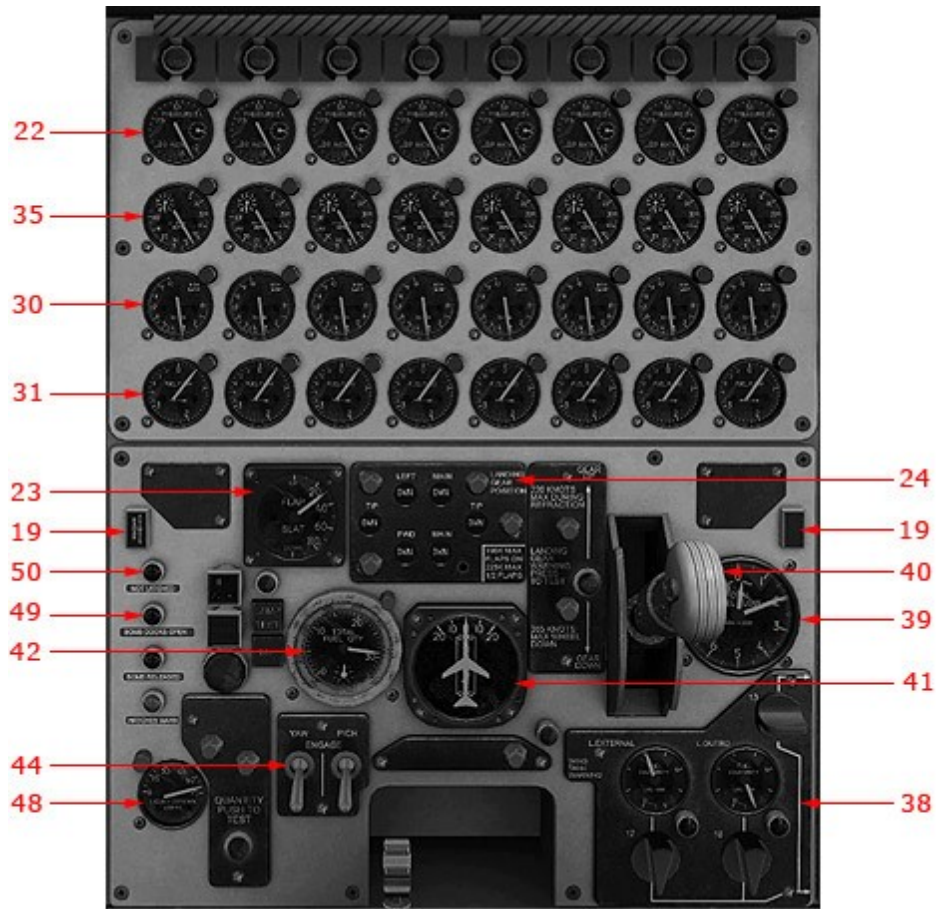
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PILOT'S INSTRUMENT PANELS



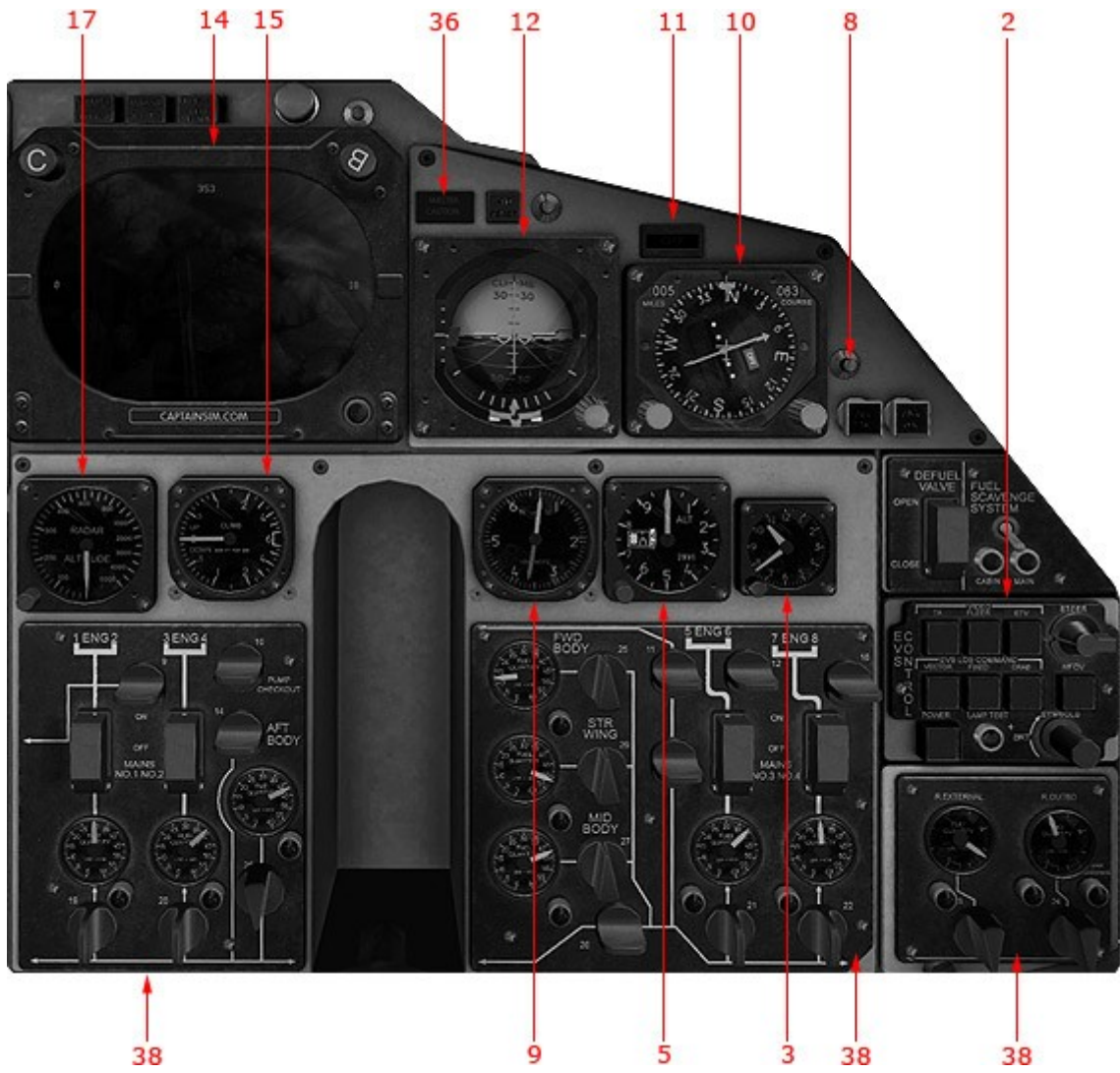
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CENTER



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RIGHT



OVERHEAD



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1. ANTI-ICE CONTROL PANEL
2. EVS CONTROL PANEL
3. CLOCK
4. FLIGHT COMMAND INDICATOR
5. ALTIMETER
8. MARKER BEACON LIGHT TEST SWITCH
9. INDICATED AIRSPEED INDICATOR
10. HORIZONTAL SITUATION INDICATOR
11. MARKER BEACON LIGHT
12. ATTITUDE-DIRECTOR INDICATOR
13. AUTOPILOT DISENGAGED LIGHT
14. EVS MONITOR
15. VERTICAL VELOCITY INDICATOR
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19. RADAR ALTIMETER CAUTION LIGHT
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49. BOMB DOORS OPEN LIGHT
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59. HEADING INDICATOR (GYRO)
60. TRUE AIRSPEED INDICATOR
61. LANDING GEAR CONTROLS PANEL
62. MACH INDICATOR SWITCH
63. FLIGHT DIRECTOR SWITCH

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1. ANTI-ICE CONTROL PANEL



1,2. Pitot Heat Switches

3. Engine, Nacelle, And Scoops Anti-Icing Switch

1. Pitot Heat Switches

Two ON-OFF pitot heat switches are located on the left side of the pilots' instrument panel. ON position of each switch energizes the I pitot tube heaters on the respective (left or right) side of the aircraft to prevent pitot tube stoppage by icing. The left pitot heat switch also controls the Q-spring ram air inlet heater. OFF position removes power from the heaters.

3. Engine, Nacelle, and Scoops Anti-Icing Switch

The ON--OFF engine, nacelle, and scoops anti-icing switch on the anti-ice control panel controls anti-icing of engine inlet components, nacelle leading edge areas, the ram air scoop lip in the left wing, and the cabin emergency rain air scoop. ON position makes the connections to supply TR power to energize the various solenoids and relays which cause the anti-icing air valves to open and turn on the electrical heater power. OFF position deenergizes the solenoids and relays, causing engine, nacelle, and scoop anti-icing to be shut off.

The emergency ram air scoop is electrically heated and will also cycle approximately 1 minute open and 15 seconds closed to prevent ice formation when the engine, nacelle, and scoops anti-icing switch is ON and the air conditioning master switch is in RAM.

2. EVS CONTROL PANEL



1. Power Switch

The power switch on the pilots' EVS control panel is a push-on/push-off type switch having an ON position (depressed) (switch face flush with switch housing) and an OFF position (extended) (switch face extends approximately 1/8 inch from switch housing) which is mechanically latched in each position. The switch is used to turn on and place the EVS monitor in standby mode.

When depressed in ON position, the word "ON" green is illuminated on the switch face provided power is on in the aircraft. When the switch is pressed again and the switch face extends from its housing, the switch is OFF and the EVS monitor is deactivated and power is removed from the other circuits provided through the switch.

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3. CLOCK



1. Winding Knob

2,3. Hands

4. FLIGHT COMMAND INDICATOR



The AN, ASQ-38(V) BNS flight command indicator (FCI) located on the pilots' instrument panel provides localizer information.

5. ALTIMETER



1. 100-Foot Pointer

2. Barometric Scale

3. 100-Foot Drum

4. Barometric Pressure Set Knob

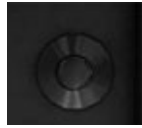
5. 1000-Foot Counter

6. 10,000-Foot Counter

A type AAU-19/A altimeters on the pilot's and copilot's instrument panels. The altimeter has a counter-drum-pointer display. The counters and drum provide a direct digital readout in hundreds and thousands of feet. The single pointer repeats the 100-foot indications of the drum, serving both as a vernier for the drum and as a quick indication of the rate and direction of altitude change. A barometric pressure set knob and barometric scale are provided for adjusting the altimeter setting.

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8. MARKER BEACON LIGHT TEST SWITCH



Marker beacon indicator lights are tested by pushing the central caution panel test switch.

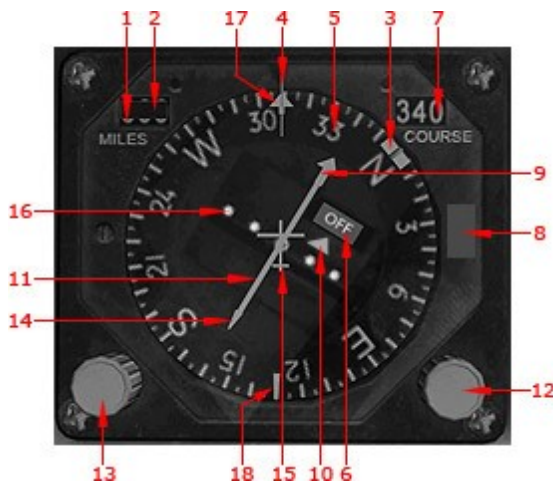
9. INDICATED AIRSPEED INDICATOR



1. Maximum Allowable Airspeed Indicator
2. Indicated Airspeed Pointer

Located at both the left and right sides of the pilots' instrument panel. By the use of two pointers, the pilots can observe the airspeed indication and the maximum allowable airspeed indication at the same time. The airspeed dial is graduated from 50 to 650 in 10-knot increments.

10. HORIZONTAL SITUATION INDICATOR



1. Range Indicator
2. Range Indicator Warning Flag
3. Heading Marker
4. Lubber Line
5. Compass Card
6. Course Deviation Indicator Warning Flag
7. Course Selector Window
8. Power Off Flag
9. Course Arrow (Head)
10. To-From Indicator
11. Course Deviation Indicator
12. Course Set Knob
13. Heading Set Knob
14. Course Arrow (Tail)
15. Aircraft Symbol
16. Course Deviation Scale
17. Bearing Pointer (head)
18. Bearing Pointer (tail)

It is an electrically operated instrument and replaces the bearing distance indicator, the radio course indicator, and the directional indicator (heading system). In the event of loss of all ac power, no information will be available from either the pilot's or copilot's horizontal situation indicator.

1. Range Indicator

Will give a digital display of the line-of-sight distance.

2. Range Indicator Warning Flag

The display will be covered by a range indicator warning flag if the NAV1 radio system is not tuned to a surface beacon that is within 300 nautical miles of the aircraft and will also be covered if the NAV1 station is not transmitting a signal of dependable strength

3. Heading Marker

Indicates a desired heading. The heading marker will rotate with the compass card after the desired heading has been selected by the heading set knob.

4. Lubber Line and 5. Compass Card

Provide an indication of aircraft heading.

7. Course Selector Window

Gives a digital display of the desired course selected by the course set knob.

9,14. Course Arrow

Indicates the desired course selected by the course set knob during ILS, ILS APP, VOR, and TACAN modes. The course arrow will rotate (in step) with the compass card.

10. To-From Indicator

Indicates whether the selected course, if intercepted and flown, will take the aircraft to the selected facility, or vice versa.

11. Course Deviation Indicator

referenced to the course arrow that indicates whether the aircraft is left or right of the desired course or perpendicular to the course arrow represent of course deviation and 1/4 of the localizer width. The deviation indicator provides information relative to the localizer beam when the nav mode select switch is in ILS or ILS APP and the NAV1 is on and tuned to an ILS frequency. For all other conditions, the course deviation indicator provides information relative to the desired course provided NAV1 radio is tuned to the respective surface beacon or omni-range station.

12. Course Set Knob

Used to set the course arrow and the digital display in the course selector window to the desired course. When the nav mode select switch is in VOR position and the NAV1 is tuned to an ILS frequency, the course set knob will have no functional effect on the course deviation indicator; however, the course deviation indicator will rotate in conjunction with the course set knob.

13. Heading Set Knob

Is used to set the heading marker to the desired heading.

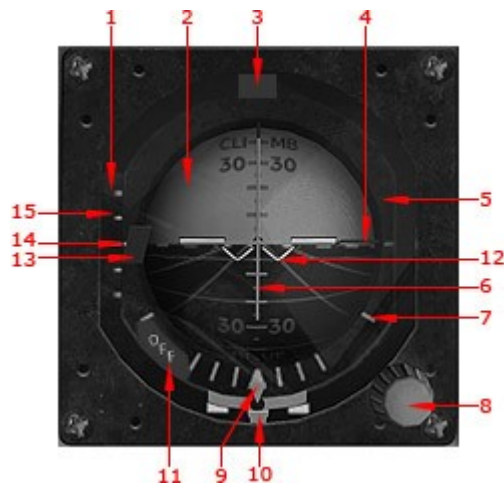
17. Bearing Pointer (head)

A Bearing Pointer indicates the bearing heading to VOR station.

11. MARKER BEACON LIGHT



The marker beacon indicator light is used as a navigational and landing aid. The light is located just above the respective pilot's horizontal situation indicator.

DO NOT USE FOR FLIGHT**12. ATTITUDE-DIRECTOR INDICATOR**

1. Glide Slope Indicator
2. Attitude Sphere
3. Course Warning Flag
4. Pitch Steering Bar
5. Bank Steering Bar Shield
6. Bank Steering Bar
7. Bank Scale
8. Pitch Trim Knob
9. Bank Pointer
10. Turn And Slip Indicator
11. OFF Flag
12. Miniature Aircraft
13. Glide Slope Warning Flag
14. Glide Slope Indicator
15. Glide Slope Deviation Scale

An ARU-49/A attitude director indicator, located on both the pilot's and copilot's instrument panel provides an indication of aircraft pitch and roll attitudes and rate of turn and slip indications. In addition, it provides glide slope and localizer information in that it shows the aircraft position above or below the glide slope and whether the aircraft has the correct bank angle and rate of turn to intercept and maintain a heading or course.

3. Course Warning Flag

A course warning will come into view during TACAN, VOR, ILS, or ILS APP mode of operation when the NAV1 fails or signals from the URN-3 beacon or the VOR or ILS stations are lost or become unreliable.

4. Pitch Steering Bar

A pitch steering bar will indicate whether the aircraft has the proper pitch to intercept the glide slope correctly. The bar will operate in ILS APP mode only. When not in operation and normal power is available, the pitch steering bar will be out of view.

6. Bank Steering Bar

A bank steering bar will indicate whether the aircraft has the correct bank angle and rate of turn to intercept the localizer beam "on course" if the NAV1 is tuned to an ILS frequency.

8. Pitch Trim Knob

A pitch trim knob permits zeroing the horizon line with reference to the miniature aircraft.

10. Turn and Slip Indicator

Indications of aircraft rate of turn and slip are provided by the needle and ball arrangement at the bottom center of the instrument.

11. OFF Flag

An OFF flag will appear upon interruption of power to the attitude indicating system.

13. Glide Slope Warning Flag

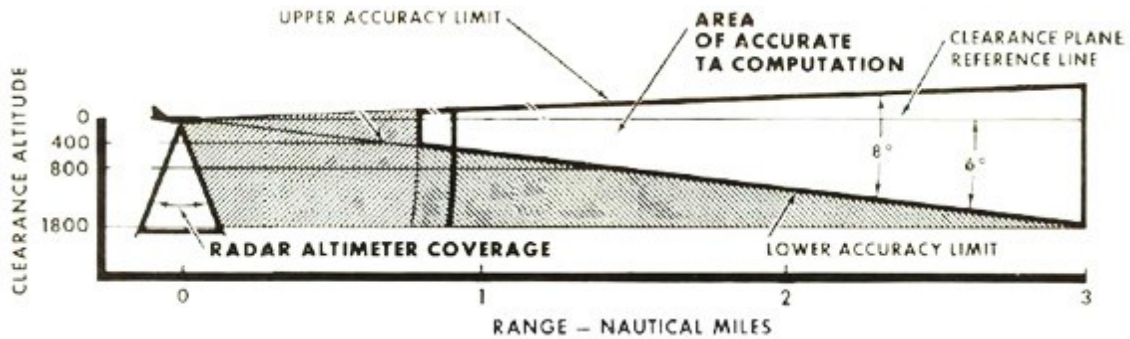
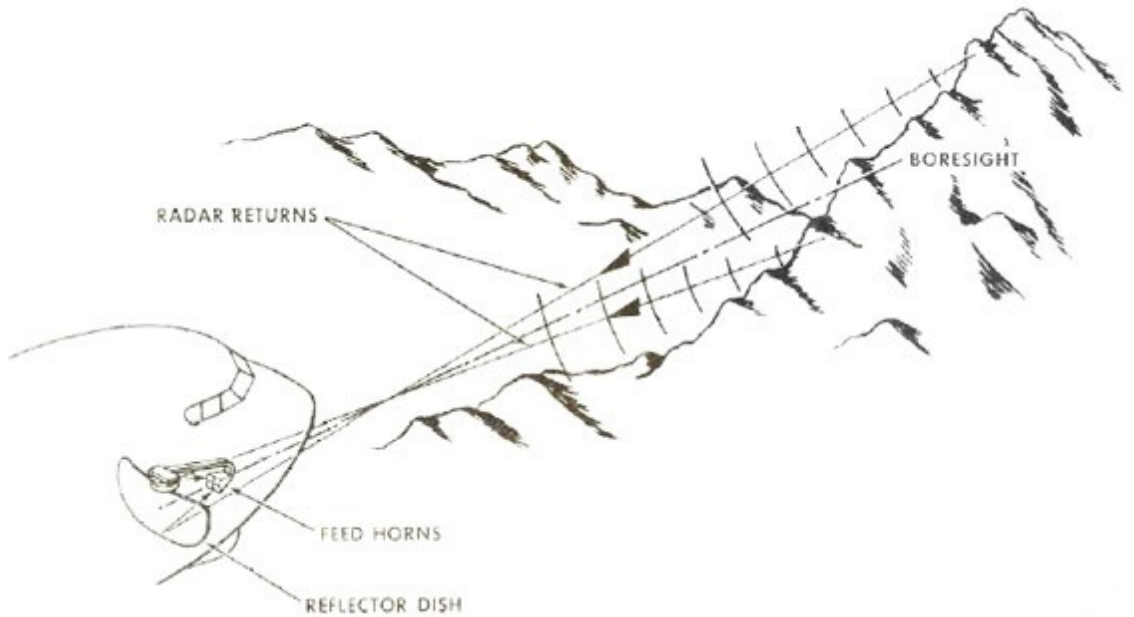
A glide slope warning flag will come into view during ILS or ILS APP mode of operation when the NAV1 fails or a glide slope signal of dependable strength is not being received.

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TERRAIN AVOIDANCE RADAR SYSTEM

The terrain avoidance (TA) system comprises a special mode of radar, an electronic terrain computer, radar scan converter, video distribution unit, and the pilot's and copilot's terrain display indicators (EVS monitors) and their associated electronic components.

The TA system provides a **monochromatic** radar display of *actual FSX terrain relief* along the flight path of the aircraft. By interpreting the display and manoeuvring the aircraft accordingly, the pilot is able to fly the aircraft at low absolute altitudes (aircraft to terrain separation distance).



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CONTROLS AND INDICATORS

14. EVS MONITOR

EVS monitor is located at both pilots' stations.



- 1. Indicated Airspeed Indicator
- 2. EVS monitor
- 3. Magnetic Course Indicator
- 4. TA return
- 5. Radar Altitude Indicator (up 5000 feet)
- 6. Brightness Knob

P20. TERRAIN DISPLAY CONTROL PANEL



- 1. Mode Selector Switch (MAP-PEAK)
- 2. Range Selector Knob

Note:
The higher an aircraft above the terrain is the more difference between MAP and PEAK mode returns.

MAP Mode



PEAK Mode



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15. VERTICAL VELOCITY INDICATOR



An MS28049 vertical velocity indicator is located at both the right and left sides of the pilots' instrument panel. The pointer shows aircraft vertical speed.

16. MACH INDICATOR



1. M-Pointer
2. Rotating Subdial

Indicates the ratio of aircraft speed to the speed of sound at the particular pressure altitude at any time during flight. The instrument has a range of 0.5 to 1.0 which is indicated on a stationary dial by a rotating pointer.

Note:
Mach Indicator Switch must be in ON position.

17. RADAR ALTIMETER



1. Radar Altimeter Caution Light
2. Altitude Indicator Needle

The instrument provides for measuring absolute altitude from 0 to 5000 feet.

An altitude indicator needle indicates altitude from 0 to 1000 feet in 20-foot increments and from 1000 to 5000 feet in 100-foot increments.

Radar Altimeter Caution Light is ON if aircraft is lower than 150 feet above ground.

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18. STANDBY HORIZONT INDICATOR



1. Attitude Sphere
2. Miniature Aircraft
3. Pitch Trim Knob
4. Bank Scale
5. Bank Pointer

Pitch Trim Knob permits zeroing the horizon line with reference to the miniature aircraft.

22. ENGINE PRESSURE RATIO GAGES



An engine pressure ratio (EPR) gage for each engine is located on the pilots' instrument panel. These gages indicate the ratio of engine inlet to exhaust pressures which is used as a measure of engine thrust. The engine inlet and exhaust indications are compared by a computer-transmitter which electrically transmits an indication to the engine pressure ratio gage.

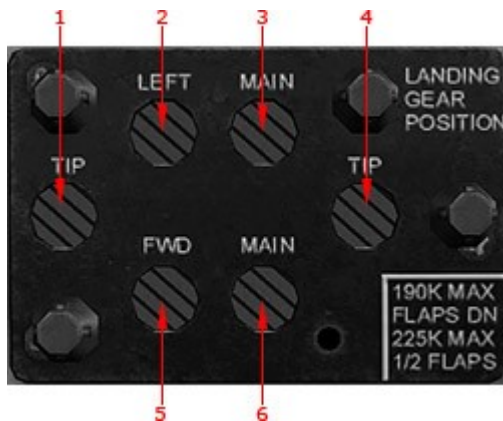
23. WING FLAP POSITION INDICATOR



A wing flap position indicator is provided on the pilots' instrument panel. This indicator reads from 0% to 100% of wing flap travel.

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24. LANDING GEAR POSITION INDICATORS PANEL



1-6. Landing Gear Position Indicators

Six tab-window type landing gear position indicators in the lower center of the pilots' instrument panel indicate landing gear position. Each tab indicator has three visual indicators to register landing gear position. When the landing gear is up and locked, the word UP appears in the tab window. A gear in an intermediate position is indicated by slanting alternate black and ivory stripes. The appearance of DWN indicates a gear down and locked.

25. LOW OIL PRESSURE WARNING LIGHTS



Low engine oil pressure is indicated by eight amber low oil pressure warning lights located over each oil pressure gage on the eyebrow instrument panel. A pressure switch is installed on each engine that will illuminate the light when a decreasing oil pressure reaches 37 (+2) psi and extinguish the light when an increasing oil pressure reaches 37 (+2) psi. These lights will complement the oil pressure indicating system to provide a cross-check to establish if a malfunction is occurring in the oil pressure indicating system or in the engine.

27. ACCELEROMETER



An accelerometer is located on the pilots' eyebrow panel. The accelerometer is a self-contained unit requiring no external connections. The dial is calibrated in "g" units from -2 to +4 "g's."

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29. MAGNETIC STANDBY COMPASS



A pilot's magnetic standby compass is located on the eyebrow instrument panel between the oil pressure gages.

30. EXHAUST GAS TEMPERATURE GAGE



Exhaust gas temperature of each engine is indicated by eight gages on the pilots' instrument panel. These gages are calibrated in degrees centigrade and indicate the temperature of the exhaust gases of each engine. Engine thermocouples supply power to operate the gages which are independent of the aircraft electrical power system.

31. FUEL FLOWMETERS



Fuel flow to the engine is shown by eight fuel flowmeters on the pilots' instrument panel. These indicators read in pounds per hour and operate on TR power.

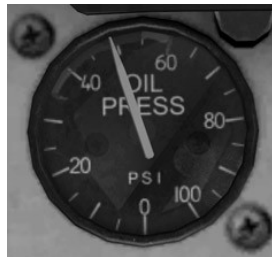
32. DME INDICATOR



Indicates the line-of-sight distance to DME station.

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34. OIL PRESSURE GAGES



Engine oil pressure is indicated by eight oil pressure gages located on the eyebrow instrument panel.

35. TACHOMETERS



1. Larger Pointer
2. Small Pointer

Speed of the high pressure compressor rotor in percent rpm is indicated by eight tachometers on the pilot's instrument panel. Engine - driven tachometer generators supply power to operate the indicators which are independent of the aircraft electrical system. Each instrument has two pointers.

1. Larger Pointer

Is read on a dial calibrated from 0 to 100 rpm.

2. Small Pointer

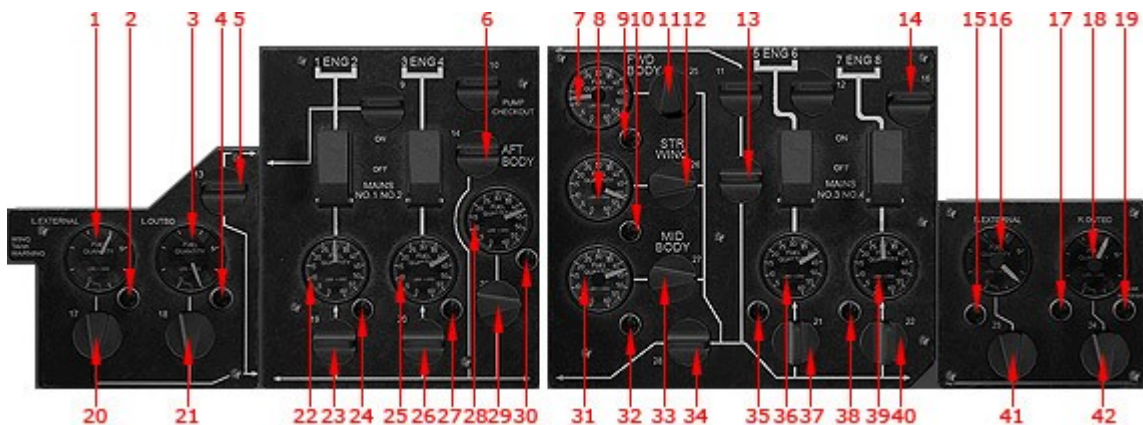
Indication is read on a dial calibrated from 0% to 10% rpm.

36. MASTER CAUTION LIGHT



Is ON if any of the following occurs:

1. In the fuel tank there is less than 10% of fuel.
2. Vertical speed is more than 7000 ft per minute.
3. Altitude is less than 200 ft and speed is more than 250 Knots.

DO NOT USE FOR FLIGHT**38. FUEL SYSTEM MANAGEMENT PANELS**

- 1,3,7,8,16,18,22,25,28,31,36,39. Fuel Quantity Gages
 2,4,9,10,15,17,24,27,30,32,35,38. Fuel Flow Indicator Lights
 5,6,13,14. Auxiliary Tank Engine Feed Control Valve Switches
 11,12,20,21,29,33,41,42. Auxiliary Tank Fuel Flow Control Switches
 19. Wing Tank Warning Light
 23,26,37,40. Main Tank Fuel Level Control Valves Switches
 34. Main Mainfold Interconnect Valves Switch

1,3,7,8,16,18,22,25,28,31,36,39. Fuel Quantity Gages

The quantity of available fuel in each tank is indicated in pounds by 12 fuel quantity gages on the fuel system panel. Fuel probes in each tank sense quantity indications. The fuel probe signals are relayed to amplifiers which operate the gages. Due to the type of fuel quantity probes used, changes in fuel density have little if any effect upon quantity indications.

2,4,9,10,15,17,24,27,30,32,35,38. Fuel Flow Indicator Lights

Twelve amber fuel flow indicator lights are located on the fuel system panel adjacent to the fuel quantity gages. Those indicator lights indicate no fuel flow from the corresponding tank during fuel feed operations.

5,6,13,14. Auxiliary Tank Engine Feed Control Valve Switches

Four auxiliary tank engine feed control valve I switches on the fuel system panel have unmarked OP EN--CLOSED positions. These rotary switches are control operation of valves of corresponding numbers to direct auxiliary tank fuel to the engines.

11,12,20,21,29,33,41,42. Auxiliary Tank Fuel Flow Control Switches

With an auxiliary tank fuel flow control switch in ENGINE FEED position, the boost pumps in the corresponding auxiliary tank supply fuel to the main manifold.

19. Wing Tank Warning Light

Wing tank warning light on the fuel system panel is provided to warn the crew that fuel is being used from the external or outboard wing tanks out of sequence.

34. Main Mainfold Interconnect Valves Switch

A main manifold interconnect valves switch on the fuel system panel has unmarked OPEN--CLOSED positions. This rotary switch controls the operation of main manifold interconnect valves. When the white stripe on the switch is aligned with the flow line on the panel, the switch is OPEN and left TR power is supplied to open valve. Opening these valves interconnects the right and left sides of the main manifold. CLOSED position closes the two valves.

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39. TOTAL FUEL FLOW INDICATOR



This instrument uses 115-volt ac power to electrically add the flow rates indicated on the eight individual fuel flowmeters. The totalizer indication is accurate within $\pm 3\%$. When all engines are operating.

40. LANDING GEAR LEVER



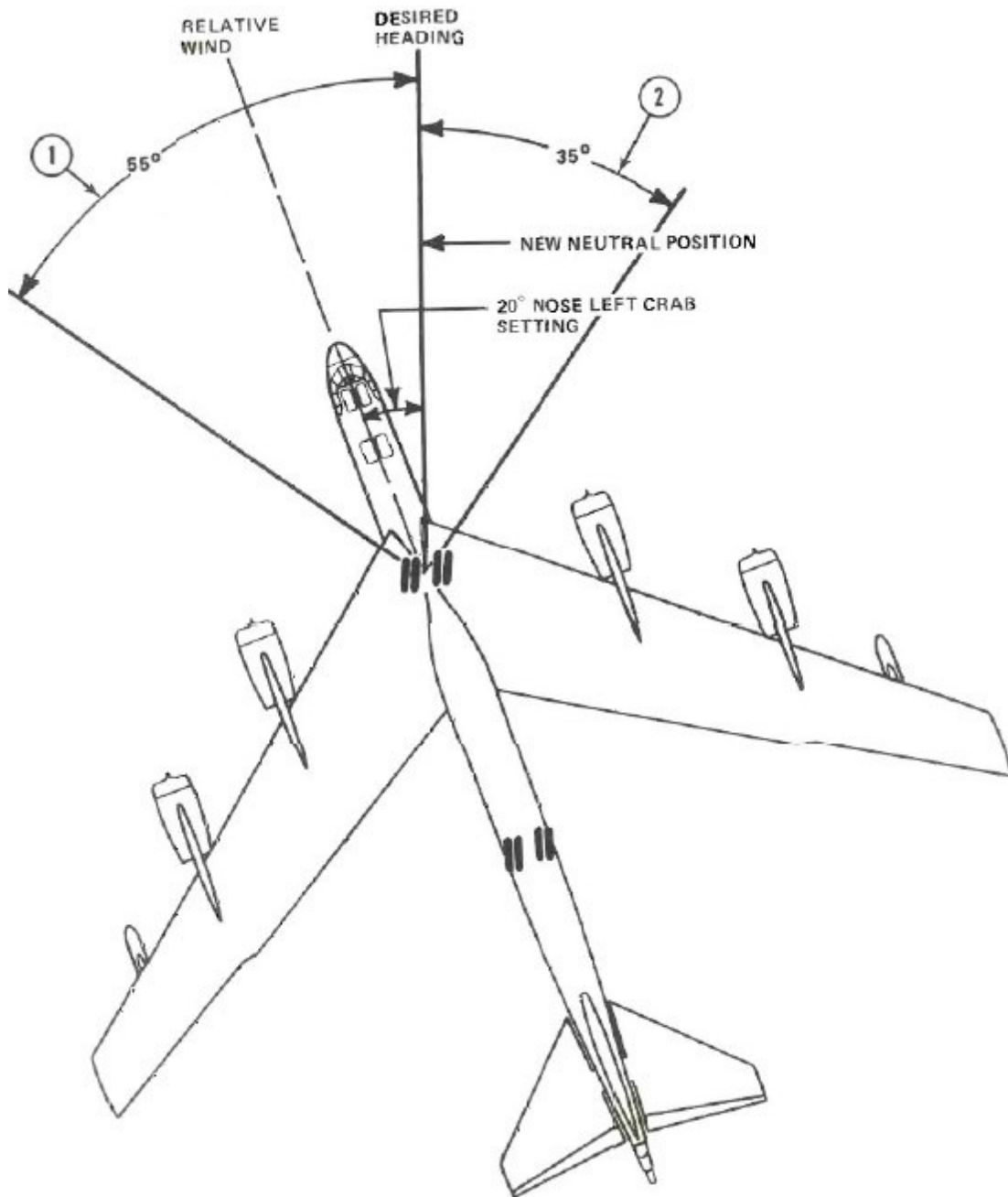
A landing gear lever is located on the pilots' instrument panel ahead of the aisle stand. Positions of the lever are GEAR UP-GEAR DOWN.

DO NOT USE FOR FLIGHT**CROSSWIND CRAB SYSTEM**

A crosswind crab system is provided on this aircraft to facilitate making crosswind landings and takeoffs and to reduce the hazards of crosswind conditions. The crosswind crab system provides a means of turning all four main gear to align with the runway while the aircraft is flown in a wings-level attitude compensating for drift. This system utilizes the steering actuators on the front main gear and a similar set on the rear main gear. The landing gear can be preset and turned up to 20° left or right of center during the approach. The maximum of 20° crab will accommodate landings in crosswinds up to and including 43 knots blowing 90° to the runway at a landing weight of 270, 000 pounds. The direction of the landing gear is preset by a crosswind crab control knob which mechanically operates the steering metering valves on each main gear. These valves meter hydraulic pressure to the actuating cylinders to position the gear as desired. The crosswind crab system is automatically centered when the landing gear lever is moved to the GEAR UP position. On the ground after landing, the gear is quickly centered by a pilot - operated centering button or by turning the crosswind crab control knob to center.

DO NOT USE FOR FLIGHT

TURNING ANGLES AVAILABLE WITH MAXIMUM CROSSWIND CRAB SETTINGS



REMARKS:

Crab setting refers to direction of the nose of the aircraft relative to desired heading.

CONDITIONS:

- Aircraft taxiing with 20° nose left crosswind crab setting.
- Steering ratio lever in TAXI.

1. Turning angle available in direction of crab setting is 55° from new neutral position.
2. Turning angle available in direction opposite crab setting is 35° (55° minus 20°) from new neutral position.

DO NOT USE FOR FLIGHT

CONTROLS AND INDICATORS

P21. CROSSWIND CRAB CONTROL KNOB



The crosswind crab control knob is recessed in the rudder trim control knob on the aft end of the aisle stand. The control sets the amount of nose left or right trim selected. When the crosswind crab control knob is turned for trim, cable linkage moves the jackscrew at the differential coordinating unit. The jackscrew positions the rear drum of the coordinating unit to move cable and mechanical linkage to operate the forward gear steering metering valves.

The jackscrew also moves cable and mechanical linkage to operate the rear gear steering metering valves. It is to be noted that the rear main gear can be steered only through movement of the jackscrew of the coordinating unit while the forward main gear are steered by movement of the rear drum of the coordinating unit. The rear drum can be moved both by the jackscrew for crosswind crab and by the forward drum of the coordinating unit for steering by the rudder pedals. This action allows steering of the forward gear even when the forward gear are preset for crosswind crab.

P22. CROSSWIND CRAB CONTROL CENTERING BUTTON



A crosswind crab centering button located to the right of the crosswind crab control knob on the aisle stand is used to center all four main landing gear from a turned position to neutral. The crosswind crab centering button controls an electric motor which turns the jackscrew in the coordinating unit in the desired direction to center all four gear. When the left rear gear is centered, power to the motor is interrupted causing all centering action to stop. The centering button, a push-type switch that is spring-loaded to OFF position, is supplied TR power. It is covered with a moisture- and dust-proof rubber cap which must be pressed to actuate the centering button.

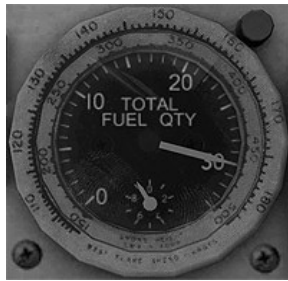
41. CROSSWIND CRAB POSITION INDICATOR



The indicator is centrally located on the lower part of the pilots' instrument panel and shows in a relative plan view presentation the amount in degrees that the landing gear is turned to compensate for aircraft crab during crosswind conditions. The indicator has a diagram marked with a miniature runway and a scale calibrated from 0° to 20° both right and left.

DO NOT USE FOR FLIGHT

42. TOTAL FUEL QUANTITY INDICATOR



Indicates total quantity of fuel in the aircraft.

43. MAIN TANKS LOW WARNING LIGHT



Illuminates when there is low fuel in main tanks.

44. SAS CONTROL PANEL

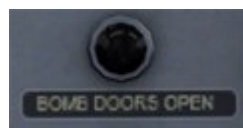


1. Yaw SAS Switch

The pitch and yaw SAS provides increased aircraft stability and structural life with improved handling qualities over non-SAS operation

The yaw SAS commands the rudder to dampen aircraft oscillations in yaw as measured by triply redundant yaw rate and lateral acceleration sensors located in the fuselage. Electrical signals from these sensors are fed to the rudder hydraulic actuator. The yaw SAS can command maximum rudder deflections of 10°.

49. BOMB DOORS OPEN LIGHT



A green caution light marked "Bomb-Doors-Open. When illuminated, they indicate that the bomb doors are fully open, that the bomb doors will be held open until the bomb doors close circuit is energized, and that the bomb door safety switches are positioned so bomb release may be made by either the normal or the jettison system. The lights will remain illuminated as long as the bomb doors are fully open.

DO NOT USE FOR FLIGHT

50. BOMB DOORS NOT LATCHED LIGHT



An amber caution light marked "Bomb-Doors-Not-Latched". Will illuminate when the forward bomb door latch is unlatched. These lights will remain on until the bomb doors are closed and the forward bomb door is latched.

51. ANTISKID SWITCH



The switch has two positions, ON--OFF, and is guarded to the ON position. When the switch is ON, the antiskid system is in operation.

52. OUTSIDE AIR TEMPERATURE GAGE



A Type G-10 outside air temperature gage is located on the left side of the pilot's instrument panel. The air temperature gage is operated by an electrical resistance thermometer bulb located flush with the body skin on the lower left side of the forward pressurized section of the radar navigator's escape hatch. The temperature range of the gage is -70° to +50°C. The pointer should rest off the scale with power off, and should register outside air temperature with power on.

53. BOMB DOORS SWITCH



A pilot's bomb door on the pilots' instrument panel provides a means of controlling the bomb doors. The switch has OPEN-OFF-CLOSED positions and is spring-loaded to OFF position. Actuating this switch to OPEN or CLOSED position will energize the bomb doors open circuit or the bomb doors close circuit which positions the bomb door control valves which in turn directs hydraulic pressure to the bomb door actuators.

DO NOT USE FOR FLIGHT

54. RUDDER TRIM INDICATOR



The indicator provides an indication of rudder trim input.

55. AUTOPILOT TURN CONTROL SELECTOR SWITCH



This switch is of the solenoid locking type and has PILOT-BOMB positions for selecting either the autopilot flight controller (PILOT) or the BNS (BOMB) respectively for turn command of the autopilot.

Interlocks will return the turn control selector switch from BOMB to PILOT position without disengaging the autopilot when the pilots' turn knob is rotated out of center detent.

BOMB position is INOP.

57. WINDSHIELD WIPERS SWITCH



Electrically operated windshield wipers clear the windows in front of the pilot and copilot. A separate motor drives each of the two blades. Both wipers are controlled by a single rotary-type switch on the pilots' Instrument panel. The switch has PARK-OFF-1-2-3 positions, giving a choice of wiper speeds. The switch is spring-loaded from PARK to OFF position. After use, the switch is held in PARK position until the blades move to the stowed position and stop. The switch is then placed to OFF position.

DO NOT USE FOR FLIGHT

59. HEADING INDICATOR (GYRO)



A Type C-2A heading indicator (gyro) is located on the left side of the pilots' instrument panel.

The heading indicator is an unslaved-gyro which provides auxiliary headings for navigational purposes and is also used to provide headings in the event of failure of the main compass system.

60. TRUE AIRSPEED INDICATOR



A true airspeed indicator is a remote indicating unit. A main dial and subdial in the true airspeed indicator repeat airspeed information transmitted from the true airspeed computer. A cutout and reference mark on the main dial permit reading of the subdial. The power to operate this indicator is supplied by the true airspeed computer. The true airspeed computer uses static pressure, pitot pressure, and temperature to compute true airspeed and Mach information.

62. MACH INDICATOR SWITCH



Mach Indicator power switch on the pilot's panel has ON-OFF positions. In ON position, the switch supplies power to the pilot's Mach Indicator.

63. FLIGHT DIRECTOR SWITCH



Flight Director switch on the pilot's panel has ON-OFF positions. In ON position, the switch supplies power to the Flight Director indicators.

DO NOT USE FOR FLIGHT

OVERHEAD PANEL



- O01. OVERHEAD LIGHTING PANEL
- O03. UHF RADIO CONTROL PANEL
- O04. UHF2 RADIO CONTROL PANEL
- O05. TACAN RADIO CONTROL PANEL
- O06. VOR CONTROL PANEL

DO NOT USE FOR FLIGHT

001. OVERHEAD LIGHTING PANEL

The following lights can be controlled independently from the overhead light control panel:



- 1. Dome Flood Light Switch
- 2. Navigational Lights Switches
- 3. Anti-collision Lights Switch (*Strobe Lights FSX key*)
- 4. Overhead Instruments Lights Switch

1. Dome Flood Light Switch

Red and white lights are controlled by a RED-OFF-WHITE toggle switch.

2. Navigational Lights Switches

ON position selects illumination of all navigational lights, while OFF position turns the lights out.

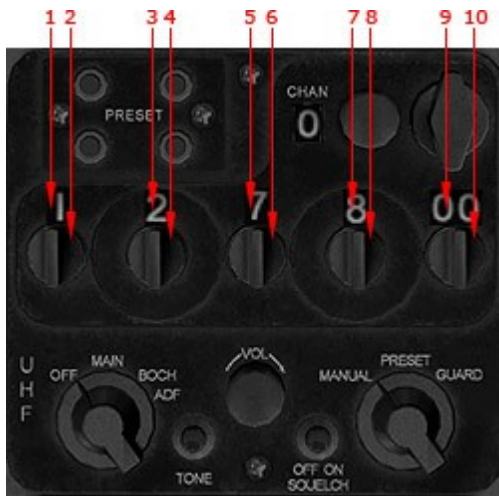
003. UHF RADIO CONTROL PANEL



- 1. COMM 1 Frequency Indicator
- 2-5. COMM 1 Frequency Selector Knobs

DO NOT USE FOR FLIGHT

004. UHF2 RADIO CONTROL PANEL



1,3,5,7,9. COMM 2 Frequency Indicator

2,4,6,8,10. COMM 2 Frequency Selector Knobs

005. TACAN RADIO CONTROL PANEL



1. NAV2 Frequency Indicator Window

2. NAV2 Frequency tens and units Selector Knob

3. NAV2 Frequency tenth and hundredth Selector Knob

1. NAV2 Frequency Indicator Window

Indicates selected NAV2 frequency.

Note: As the first digit of the frequency is always 1 so it is not shown on the indicator.

006. VOR CONTROL PANEL



1. NAV1 Frequency Indicator

2. NAV1 Frequency Selector Switch

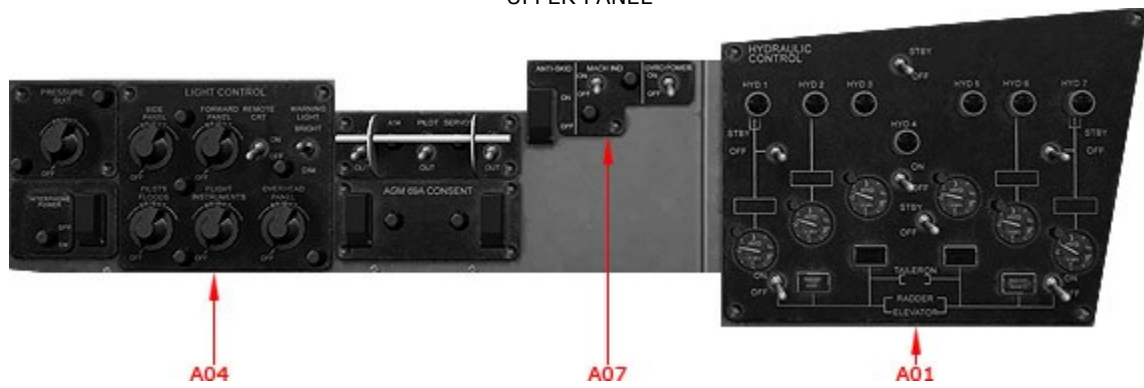
Note:

As the first digit of the frequency is always 1 so it is not shown on the indicator.

DO NOT USE FOR FLIGHT

PILOT'S SIDE PANELS

UPPER PANEL



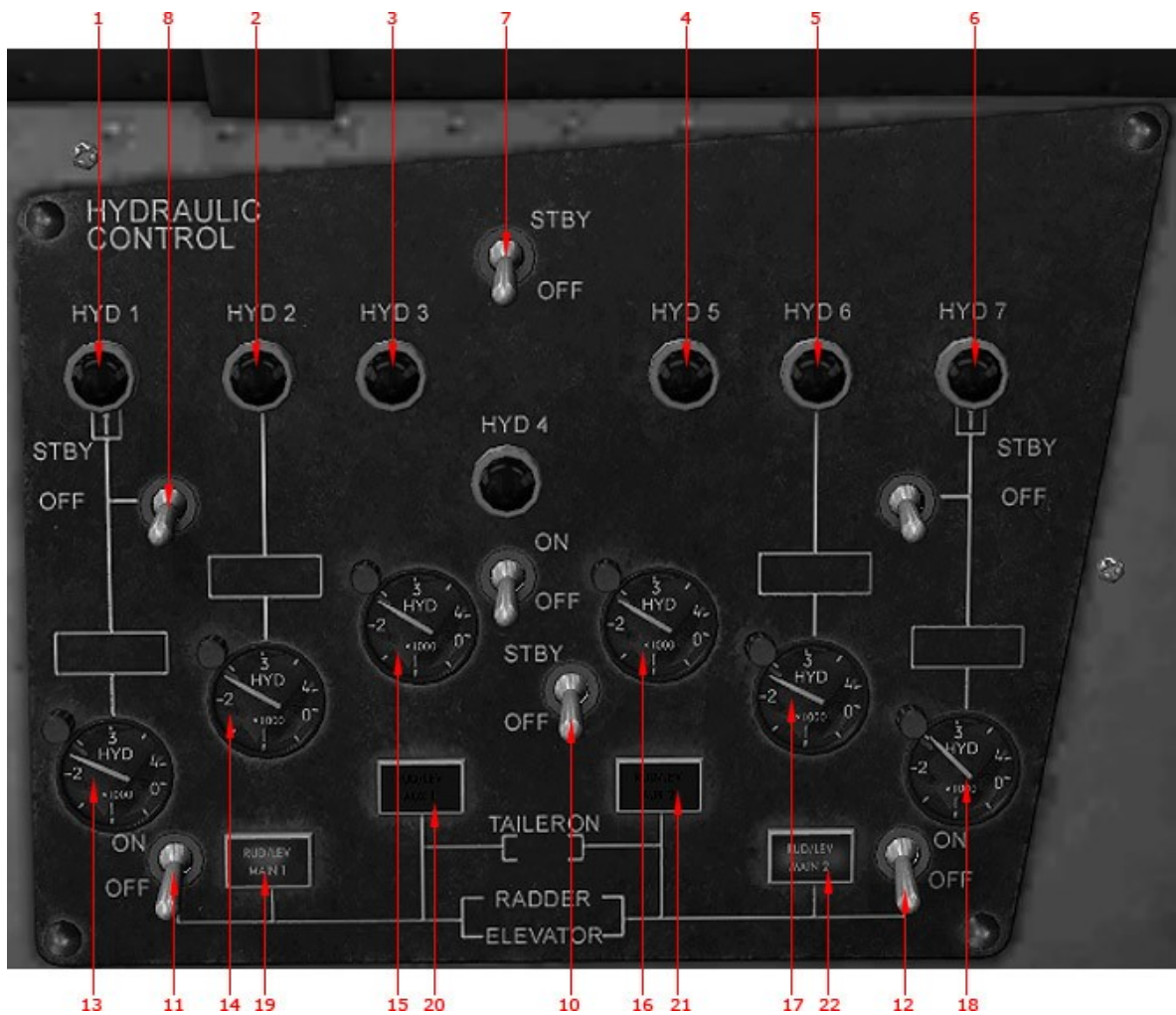
LOWER PANEL



- A01. HYDRAULIC PANEL
- A04. LIGHT CONTROL
- A07. ANTISKID MACH GYRO
- A08. OXYGEN QUANTITY
- A14. OXYGEN REGULATOR PANEL

DO NOT USE FOR FLIGHT

A01. HYDRAULIC PANEL



- 1-6. Engine-Driven Hydraulic Pump Out Lights
- 7-10. Standby Pump Switches
- 11,12. RUD/ELEV Hydraulic System Switches
- 13-18. Hydraulic System Pressure Gages
- 19-22. RUD/ELEV Hydraulic System Lights

1-6. Engine-Driven Hydraulic Pump Out Lights

Each of the six individual hydraulic systems has an red pump out indicating light located on the hydraulic control panel at the pilots' station. Since the lights indicate engine-driven pump pressure only, a light will remain on after failure of a main pump even though (for those systems which have a standby pump) system pressure is restored to normal by the standby pump. Only a return of the affected main pump to proper operation will extinguish the light.

11,12. RUD/ELEV Hydraulic System Switches

Two rudder/elevator hydraulic system switches are located on the lower portion of the hydraulic control panel. These switches have ON— OFF positions and in the ON position they energize ac motor-driven pumps that operate the rudder/elevator main No. 1 and 2 hydraulic systems. In the OFF position, power is removed from the hydraulic pumps.

DO NOT USE FOR FLIGHT

13-18. Hydraulic System Pressure Gages

Six gages on the hydraulic control panel indicate pressure of the hydraulic systems. The location of each gage on the control panel corresponds to the respective hydraulic system which it serves and which is shown by outline on the control panel.

A04. PILOT'S LIGHT CONTROL PANEL

The following lights can be controlled independently from the pilot's light control panel:



1. Pilot's Side Panel Instruments Lights Switch
2. Forward Center Panel Instruments Lights Switch
3. Panels Backlights Switch (*Shift+L*)
4. Pilot's Panel Instruments Lights Switch
5. Eyebrow Panel Instruments Lights Switch

1. Pilot's Side Panel Instruments Lights Switch

Turns pilot's side panel instrument lights on/off.

2. Forward Center Panel Instruments Lights Switch

Turns forward center panel instruments lights on/off.

3. Panels Backlights Switch (*Shift+L*)

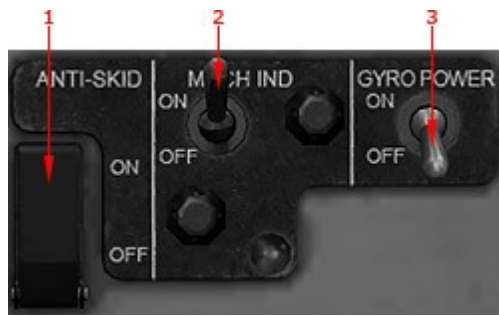
Turns panels backlights on/off.

4. Pilot's Panel Instruments Lights Switch

Turns pilot's panel instruments lights on/off.

5. Eyebrow Panel Instruments Lights Switch

Turns eyebrow panel instruments lights on/off.

DO NOT USE FOR FLIGHT**A07. ANTISKID MACH**

1. Antiskid Switch
2. MACH Switch
3. Gyro Power Switch

1. Antiskid Switch

The switch has two positions, ON--OFF, and is guarded to the ON position. When the switch is ON, the antiskid system is in operation.

2. MACH Switch

Mach Indicator is a servo-type indicator, receiving power from the true airspeed computer through a Mach indicator switch on the pilot's side panel.

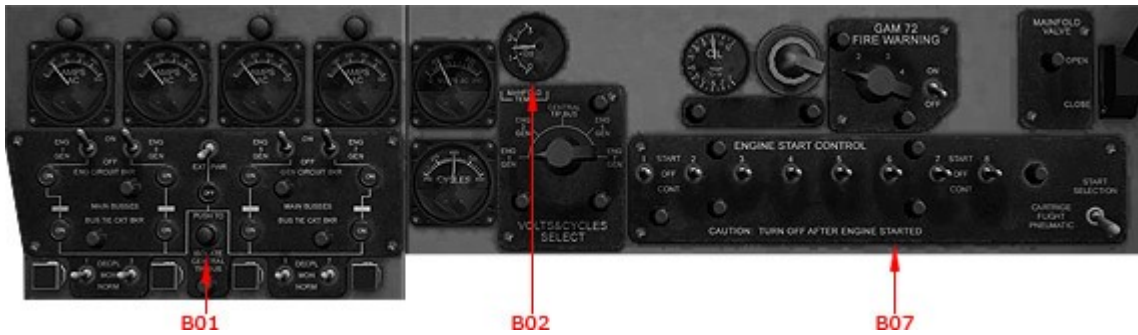
3. Gyro Power Switch

Two gyro power switches on the pilot's panel and pilot's side panel have ON--OFF positions. In ON position, the pilot's gyro power switch supplies power to the pilot's attitude indicating system and the heading indicator.

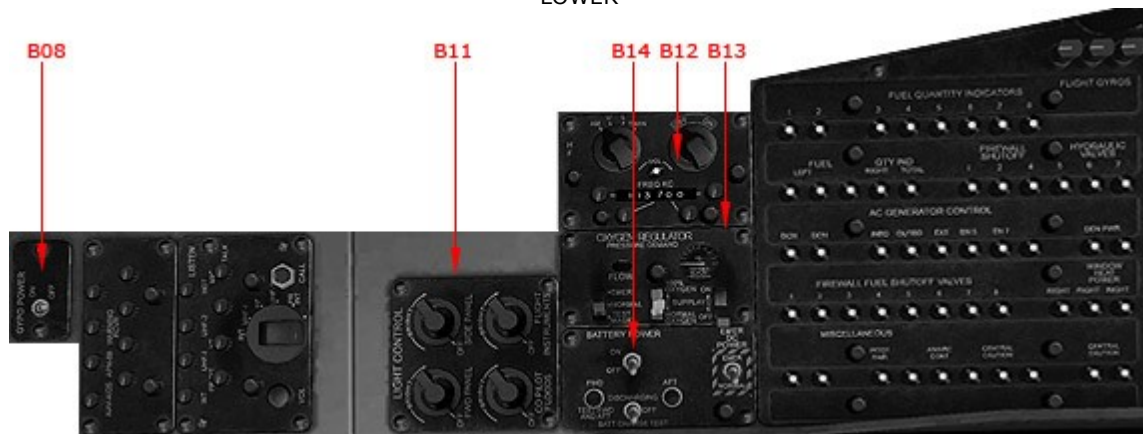
DO NOT USE FOR FLIGHT

COPILT'S SIDE PANELS

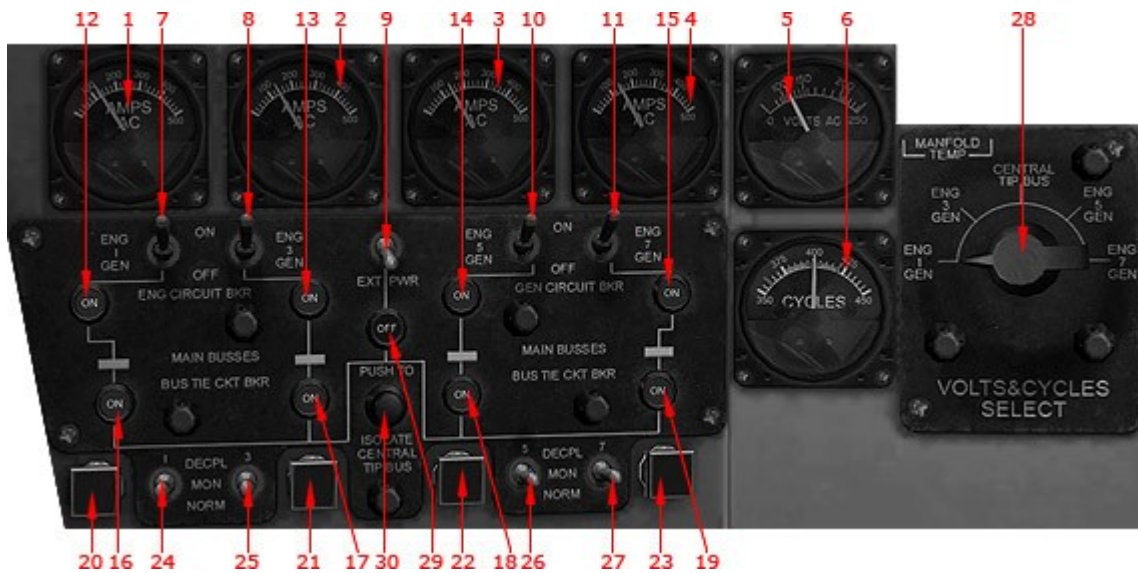
UPPER



LOWER



- B01. ELECTRICAL PANEL
- B02. TEMP INDICATOR
- B03. OIL TEMP INDICATOR
- B07. ENG START CONTROL PANEL
- B08. GYRO POWER SWITCH
- B11. LIGHT CONTROL
- B12. HF RADIO PANEL
- B13. OXYGEN REGULATOR PANEL
- B14. BATTERY SWITCH PANEL

DO NOT USE FOR FLIGHT**B01. ELECTRICAL PANEL**

- 1-4. Ammeter
- 5. Voltmeter
- 6. Frequency Meter
- 7,8,10,11. Generator Switch
- 9. Main External Power Switch
- 12-15. Generator Circuit Breaker Position Indicator
- 16-19. Bus Tie Circuit Breaker Position Indicator
- 20-23. Generator Drive Overheat Light
- 24-27. Generator Drive Decoupler Switch
- 28. Frequency And Voltmeter Selector Switch
- 29. External Power Circuit Breaker Position Indicator
- 30. Master Isolate Switch

1-4. Ammeter

Provides indication of output in amperes supplied by each individual generator. The ammeters indicate from 0 to 500 amperes.

6. Frequency Meter

A frequency meter provides a means of reading individual frequencies of the generators and central bus tie.

7,8,10,11. Generator Switch

Generator switches on the copilot's ac control panel are marked ON and OFF. When the switch is held momentarily in ON position, 28-volt nominal dc essential power closes the generator control relay and the generator circuit breaker and energizes the generator field.

9. Main External Power Switch

Main external power switch on the ac control panel is marked ON and OFF. The switch is provided for controlling the main external power system.

DO NOT USE FOR FLIGHT

12-15. Generator Circuit Breaker Position Indicator and 16-19. Bus Tie Circuit Breaker Position Indicator

Eight tab indicators, one for each generator circuit breaker and one for each bus tie circuit breaker are located on the ac control panel and provide a means of indicating the position of the respective circuit breakers.

24-27. Generator Drive Decoupler Switch

The switches are marked NORM and i ECPI at the extreme positions and MON at the center position.

28. Frequency And Voltmeter Selector Switch

A five-position frequency and voltage selector switch has ENG GEN -ENG 3 GEN--CENTRAL TIE BUS—ENG 5 EN- ENG 7 GEN positions. The switch provides a means of selecting and reading frequency and voltage >i the central bus tie and of each generator. In ENG 1 GEN position, the frequency and voltage of the No. 1 generator may be read on the frequency meter and voltmeter provided the generators are isolated. The remaining positions will perform the above operation for their respective generators as marked. When the generators are in parallel, all generator switch positions will be read the same as the CENTRAL TIE BUS position.

30. Master Isolate Switch

An isolate switch is marked "Push to Isolate Central Tie Bus" Pressing the switch energizes the master isolate relay, which in turn trips the bus tie circuit breakers, isolating all generators from the central bus tie.

B02. TEMP INDICATOR



Shows static air temperature.

B07. ENG START CONTROL PANEL



1-8. Starter Switches

1-8. Starter Switches

These switches select the engines pair for which a starting function is desired. When the starter switch is in START, the starter air valve is opened and ignition power is directed to that engines pair.

DO NOT USE FOR FLIGHT

B11. COPILOT'S LIGHT CONTROL PANEL

The following lights can be controlled independently from the copilot's light control panel:



1. Copilot's Side Panel Instruments Lights Switch

Turns copilot's side panel instruments lights on/off.

2. Panels Backlights Switch (Shift+L)

Turns panels backlights on/off.

3. Copilot's Panel Instruments Lights Switch

Turns copilot's panel instruments lights on/off.

B12. HF RADIO PANEL



1,3,4,5. NAV1 Frequency Selection Knobs

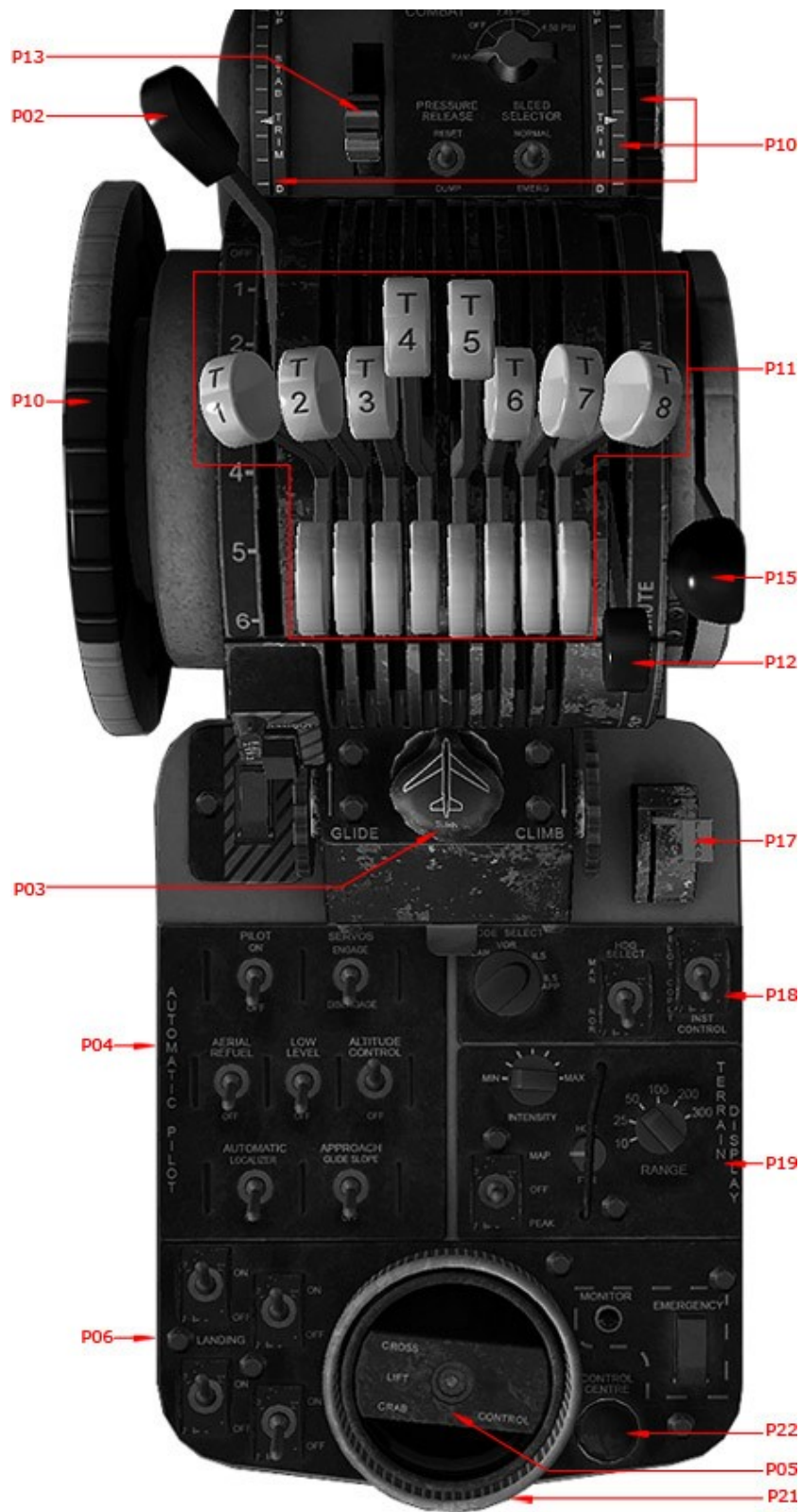
2. NAV1 Frequency Selection Indicator

DO NOT USE FOR FLIGHT**B14. BATTERY SWITCH PANEL**1. Battery Switch (*Shift+M*)

An ON-OFF battery switch on the copilot's side panel routes battery power to the essential battery buses. When the battery switch is placed in ON position, battery power is directed to the essential buses through the essential dc battery relays and, when TR power is available, relays are energized to transfer essential buses to TR power. When the battery switch is in OFF position, no battery power is available to the essential battery buses. Battery power is supplied directly from each battery to individual (direct) battery buses at all times, regardless of the position of the battery switch.

DO NOT USE FOR FLIGHT

aisle stand



DO NOT USE FOR FLIGHT

- P02. AIRBRAKE LEVER
- P03. AUTOPILOT TURN AND PITCH CONTROLLER
- P04. AUTOPILOT COMMAND SELECTOR PANEL
- P05. CROSSWIND CRAB CONTROL KNOB нет номера на скрине
- P06. LANDING LIGHTS PANEL
- P10. STABILIZER TRIM WHEEL AND INDICATOR
- P11. THROTTLES
- P12. THROTILE BRAKE LEVER
- P13. PARKING BRAKE LEVER (*Ctrl+.*)
- P15. DRAG CHUTE LEVER
- P17. WING FLAP LEVER
- P18. NAVIGATION SYSTEM SELECT PANEL
- P19. TERRAIN DISPLAY CONTROL PANEL
- P21. RUDDER TRIM KNOB
- P22. CROSSWIND CRAB CONTROL CENTERING BUTION

P02. AIRBRAKE LEVER



The airbrake lever on the pilot's side of the aisle stand operates airbrakes.

P03. AUTOPILOT TURN AND PITCH CONTROLLER



- 1. Pitch Controllers
- 2. Turn Controller

1. Pitch Controllers

2 controllers mechanically joined to one another. Free to rotate without limit in either direction. Activated when autopilot engaged so that when rotated, new attitude reference is set and airplane pitches to maintain it. Deactivated when Altitude Hold is selected or when glideslope is captured.

2. Turn Controller

- Detented at center position
- May be rotated at 130 degrees in either direction.
- When rotated, causes airplane to turn. Rate and amount of rotation determines rate and amount of airplane roll.
- Will remain in any position
- Can effect a maximum bank angle of 50°

DO NOT USE FOR FLIGHT**P04. AUTOPILOT COMMAND SELECTOR PANEL**

1. Autopilot Master Pilot Switch
2. Servos Engage Switch
3. Altitude Control Switch
4. Automatic Approach Localizer Switch
5. Automatic Approach Glide Slope Switch

1. Autopilot Master (Pilot) Switch (Z key)

An autopilot master (pilot) switch on the autopilot selector panel has ON-OFF positions. ON position puts power to the servo control drive motor and permits ready engagement of the servos. OFF position cuts off power to the servo control drive motor and also disengages the autopilot

3. Altitude Control Switch (Ctrl+Z)

An altitude control switch has ON-OFF positions. In ON position, the elevator servo is controlled by a barometric pressure control unit. Rotating the pitch knob drops the altitude control switch to OFF and deactivates altitude control operation. Moving the glide slope switch to ON will drop the altitude control switch to OFF position. The altitude control switch will remain locked in OFF as long as the glide slope switch is in ON position.

4. Automatic Approach Localizer Switch

Dummy on this panel. See description of ILS position of Nav Mode Select Switch for details.

5. Automatic Approach Glide Slope Switch

Dummy on this panel. See description ILS APP positions Nav Mode Select Switch for details.

DO NOT USE FOR FLIGHT**P18. NAVIGATION SYSTEM SELECT PANEL**

1. Nav Mode Select Switch
2. Heading Selector Switch

1. Nav Mode Selector Switch

Nav mode select switch marked "Mode Select" is located on the navigation system select panel. The rotary switch has TACAN-VOR-ILS-ILS APP positions.

- In TACAN position, the bank steering bar will respond to the MSFS flight plan (if loaded). (*Ctrl+Shift+N should be assigned*)
- In VOR position, the omnirange radio navigation system is selected and NAV1 may be placed in operation. The bank steering bar will respond to NAV1. (*Ctrl+N*)
- In ILS positions, the instrument landing system mode of navigation is selected. The bank steering bar will respond to ILS localizer. If Autopilot is engaged, ILS position allows the lateral controls of the autopilot to be controlled by the localizer beam after it has been intercepted. (*Ctrl+0*)
- In ILS APP positions, the instrument landing system mode of navigation is selected. The bank steering bar will respond to ILS localizer. The pitch steering bar will respond to ILS glideslope. If Autopilot is engaged, ILS APP position allows the lateral and pitch controls of the autopilot to be controlled by the localizer and glide slope beams after they have been intercepted. (*Ctrl+A*)

Note: Nav Mode Selector Switch is active only if Heading Selector Switch in NOR position.

2. Heading Selector Switch (*Ctrl+H*)

A heading selector switch located on the navigation system select panel on the aisle stand is marked "HDG Select." The switch has MAN-NOR positions and controls the input source for signals to the bank steering bar on the attitude-director indicator. In NOR (normal) position, the information displayed on the flight director indicator will be determined by the position of the mode select switch. In MAN (manual) position, the flight director system will override Nav Mode Selector Switch. The bank steering bar will respond to the heading set by the heading set knob on the captain's horizontal situation indicator. The bar will indicate zero deflection when the aircraft has the correct bank angle to arrive at the selected heading. The heading can be maintained by keeping the bank steering bar at zero deflection.

The autopilot localizer and glide slope can be energized only when the nav mode select switch is in ILS or ILS APP position respectively and the omni-range radio system is on and tuned to an ILS frequency.

DO NOT USE FOR FLIGHT

P06. LANDING LIGHTS PANEL



Landing Lights ON- OFF Switch (Ctrl+L)

Turn landing lights on-off.

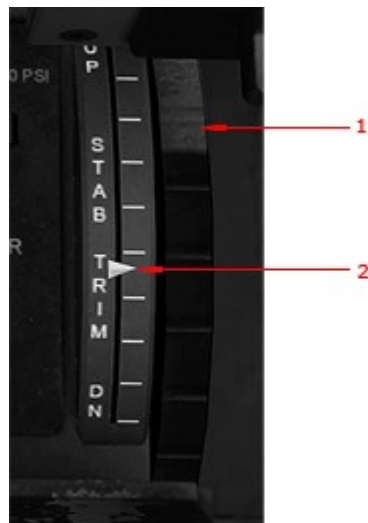
Crosswind Landing Light Switch

Turn crosswind landing lights on-off.

Taxi Lights Switch

Turn taxi lights on-off.

P10. STABILIZER TRIM WHEEL AND INDICATOR



1. Copilot's Trim wheel
2. Stabilizer Trim Indicator

Manual control of the stabilizer trim metering valve is provided by rotation of the stabilizer trim wheels on the aisle stand. The pilot's trim wheel is attached to the throttle shaft and operates through a chain sprocket linkage to move a trim indicator located forward and inboard of the wheel.

The copilot's trim wheel and trim indicator are located opposite to the pilot's trim indicator. The manual trim wheels can be used to override the electric trim control system or autopilot trim system.

The trim wheel face and periphery is painted in alternate black and white segments as a visual aid and reminder when the electric trim control system is being used.

DO NOT USE FOR FLIGHT

P11. THROTTLES



Eight throttles control eight engines. Due to MSFS limitations the eight throttles combined as four pairs of engines.

Note:

Place all throttles to idle position (F1) before engines starting up.

P15. DRAG CHUTE LEVER



Positions of the lever are DEPLOY-LOCKED-JETTISON. This lever manually operates the drag chute release and jettison mechanisms through a cable system. Normally, the lever must be moved to DEPLOY before it can be moved to JETTISON position. LOCKED position holds the spring-loaded drag chute compartment door securely closed. JETTISON position causes release of the jettison mechanism and allows the chute to pull free of the aircraft.

Drag Chute Limitations

- During the deceleration of a landing or refused take-off, the drag chute may be deployed at 135 knots IAS. Deployment at higher speeds may result in failure of the chute or the shear pin.
- Drag chute will not deploy at or over 200 knots IAS.
- Once deployed the drag chute will automatically jettison at 20 knots IAS.

To deploy the drag chute while in exterior views use *Wing Fold* FSX key (should be assigned).

Drag chute is visual feature, it does not affect landing distance.

DO NOT USE FOR FLIGHT**P17. WING FLAP LEVER**

The wing flap system includes four separate wing flap sections. The flaps are of the Fowler type with high lift/drag ratio resulting in shortened takeoffs and reduced landing speeds. All four flap sections are simultaneously driven by a single power unit located in the fuselage aft of the center section gear spar. During the first 37% of extension, the flaps rotate downward 35° with little rearward movement. For the remainder of the extension, the flaps move rearward only. Most of the drag increase occurs during the first 20% of the flap motion. This initial 20% rotates the flaps down 29° in approximately 12 seconds, leaving only 6° of rotation in the remaining 80% of flap extension. The flaps are electronically controlled by a single flap lever. No emergency control system is provided for the flaps.



Control of the wing flaps is accomplished by moving a lever with an airfoil-type knob on a detent quadrant located on the right side of the aisle stand. This lever can be moved from either the UP or DN position. When the lever is placed in the UP or DN position, a circuit is closed to supply TR power to left and right flap extend or retract relays.

The flaps extend or retract fully in approximately 60 seconds.

DO NOT USE FOR FLIGHT

CUSTOMER CARE

FORUM

You are invited to join Captain Sim [community forum](#)

DAILY NEWS

For Captain Sim *daily* news please follow us at [Twitter](#) or [Facebook](#).

VIDEO CHANNEL

For Captain Sim videos please watch our YouTube [channel](#).

TECH SUPPORT

Our product is not perfect (unfortunately nothing is). But we are working on improvements. If you have some important issue to report, please check-in to [Your Profile](#) then click Product Name > Customer Support > and use the Trouble Ticket System. We process all tickets and consider the most significant issues for further upgrades.