

Learjet 35A

Exterior

Exterior Height: 12 ft 3 inches Wing Span: 39 ft 6 inches Length: 48 ft 7 inches External Baggage: NA

Interior

Cabin Volume: 268 cubic ft Internal Baggage: 40 cubic ft

Occupancy

Crew: 2

Passengers: 6-8

Operating Weights

Max T/O Weight: 18,300 lb Max Landing Weight: 15,300 lb Operating Weight: 10,700 lb Empty Weight: 10,000 lb Fuel Capacity: 6,238 lb Payload W/Full Fuel: 2,000 lb

Max Payload: 3,200 lb

Range

Normal Range: 1,700 - 2,000 nm Max Range: 2,000 - 2,100 nm Service Ceiling: 45,000 ft

Distances

Balanced Field Length: 5,000 - 6,000 ft Landing Distance: 3,000 ft

Performance

Rate of Climb: 4,290 fpm

Climb Rate One Engine Inop: 1,000 - 1,500 fpm

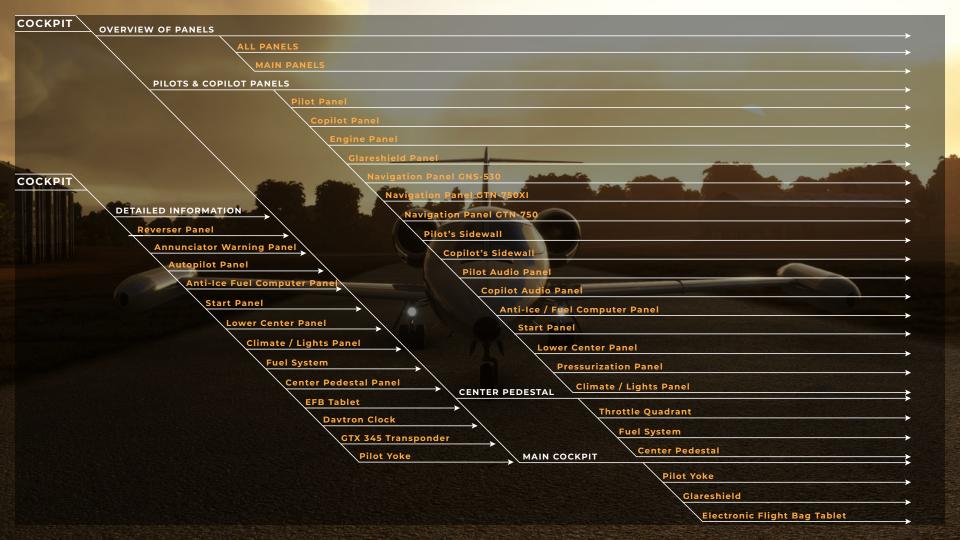
Max Speed: 451 kts Normal Cruise: 424 kts Economy Cruise: 377 kts Fuel Capacity: 6238 lb

Power Plant

Engines: 2

Maximum Thrust: 3,500 lb / each Engine Mfg: Honeywell Aerospace

Engine Model: TFE731



INTERIOR	
INTERIOR	CABIN
	Cabin Tables
4	
0.00	Passenger Curtains
7.	Cabin Door
	Cabin Door Switches
	Cabin Lights
INTERIOR	
Min	DETAILED INFORMATION Cabin Door
EXTERIOR	ALDER ST
	AIRCRAFT
	Cabin Door
	Cabin Door Open
	Engine Covers
	Ground Power Unit
	Ground Power Plug
	Pitot Covers
	Fuel Caps
	Fuel Nozzle
	Wing Lights And Static Wicks
	Navigation & Strobe Light
	Landing-taxi Light
	Belly Beacon Light
	Tail Beacon Light
	Wing Ice Inspection Light
	Chocks

COCKPIT — Overview

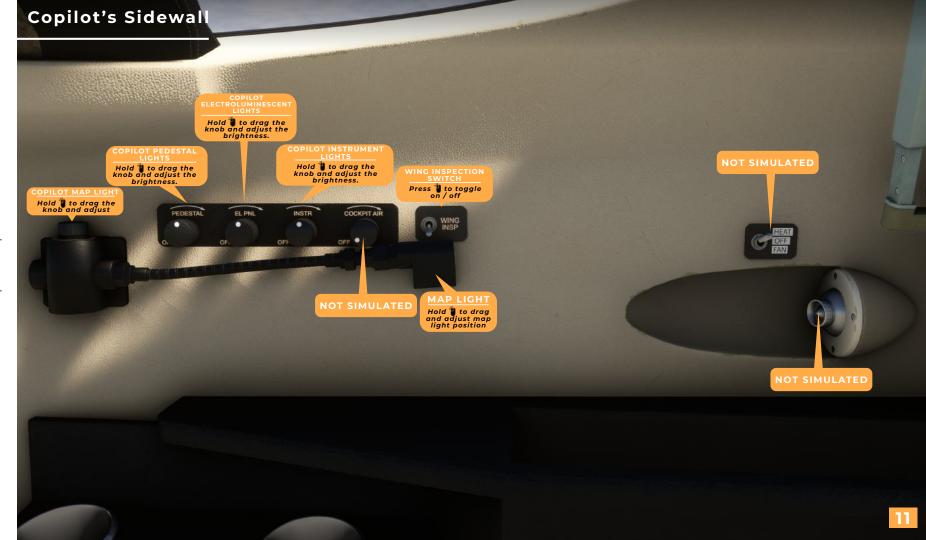
















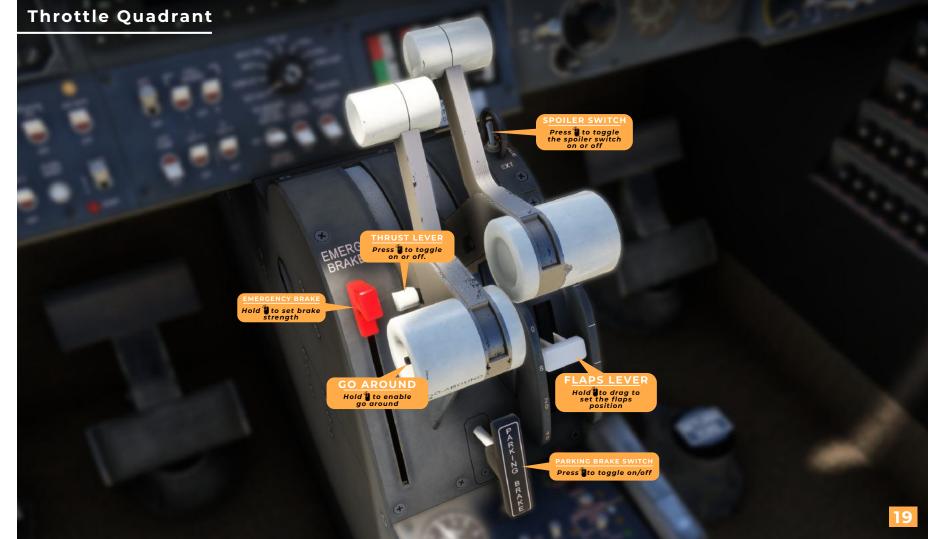
Anti-Ice / Fuel Computer Panel WINDSHIELD/ RADOME Press to togale Hold left click to drag Press to toggle airframe anti-ice the switch to on / the 3-way switch: Hold left click to **NOT SIMULATED** Up: Alcohol to position to on / off drag the 3-way Windshield & Radome switch: Center: Alcohol to MARKER BEACON Up: On Radome only Center: Hold Down: Off Press to toggle Down: Off Press to toggle Press to toggle Press 🖁 to toggle avionics master the switch to on / the switch to on / *Controls alcohol anti-ice switch position to the senstivity to system HI /LOW Press to toggle on / off to enable power on / off FUEL CMPTR STATIC AVIONICS WS SOURCE WING **RADIO** NT ON MASTER HEAT ALT OFF OFF LO **OFF** OFF **OFF** OFF OFF SPR SLAVE **EMER** NAC HEAT AC BUS VG SLAVE BAT START PRESSURE REGULATOR SWITCH Hold to toggle left / right **OFF** OFF OFF **ERECT** L & R PITOT HEAT SWITCHES Press to toggle Press et to toggle pitot anti-ice heat on / off nacelle anti-ice heat on / off AC BUS SWITCH **PILOT SWITCH** Press to toggle Hold momentarily to the switch to PRI / toggle the switch to SEC free / slave SLAVE DIRECTION Hold left click to BATTERY SWITCH drag the 3-way switch: Hold to move up Hold left click to Up: Left & down to toggle drag the 3-way Center: Both the switch to left switch: Down: Right and right Up: Emergency Center: Standby Down: Off Click for the detailed info.

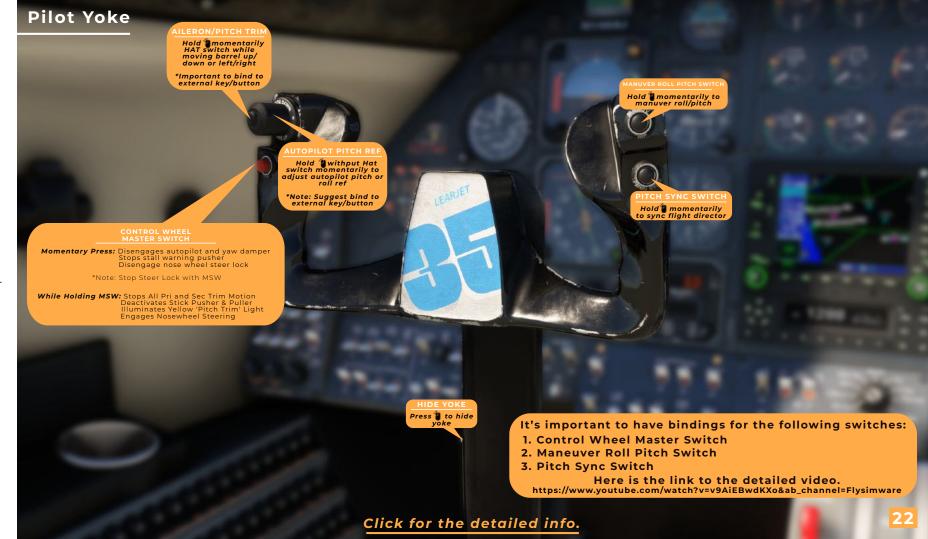




Climate / Lights Panel

BEACON LIGHT SWITCH









Cabin Door Open





Features Airplane EXTERIOR

Features Airplane EXTERIOR









Illuminates upon:

- a. Nacelle temperatures exceed approximately 410°F in the areas of the pylon firewall or accessory gearbox.
- b. Nacelle temperatures exceed 890°F in the areas of the turbine section.



ARMED:

Illuminates when corresponding[ENG FIRE PULL] handle is pulled and extinguishing agent is available from the associated bottle.









a. Loss of DC power to corresponding inverter.

SEC

INV

INV

Annunciator Warning Panel

- b. Loss of or insufficient AC power output to the corresponding 115 VAC bus and/or
- c. Main bettery switches set to 'on and associated INVERTER switch set to 'OFF' .



- a. Illuminates when oil pressure of either engine falls below approximately 23 PSI.
- b. Extinguishes when oil pressure rise above 30 PSI.



Illuminates when temperature of horizontal stablizer reaches 215°F.



- a. Illuminates when low-limit thermostat detects temperature of 215°F in bleed air windshield anti-ice discharge nozzle.
- b. Illuminates when high -limit thermostat detects temperature of 290°F in bleed air windshield anti-ice discharge nozzle.





Flashing:

a. Flaps are extended beyond 13° with SPOILER switch set to EXT.

AUG AIL

Malfunction detected in the aileron augmentation system in spoiler and spoileron modes.



- a. One or both PITOT HEAT switch(es) set to 'OFF'.
- b. One or both heating dement(s) inoperative or malfunction detected.

FUEL FILTER

Differential pressure is 1.25 psi across one or both airframe fuel filters. Fuel is bypassing the tailcone filter.









NOTE: (Must have master autopilot switch located on pilot's panel)

-----Autopilot Lateral-----

HDG: The HDG mode is used to maintain the heading selected by the heading bug on the pilot's or Co-pilot's HSI. Typical maximum bank angle is 25° in response to the heading bug rotation.

1/2 BNK: The 1/2 BNK mode is used to limit maximum bank angle to 15° in HDG or VOR NAV mode.

NAV: The NAV mode is used to intercept and/or track the VOR or localizer approach course selected on the pilot's or co-pilot's HSI when valid data is available from the active navigation reciever. Typical maximum bank angle is 25° in response to heading bug rotation.

BC: The BC mode is used to track a localizer back course inbound (or localizer front course outbound). When valid data is available from the active navigation reciever. This mode is functional only when NAV mode is selected

Autopilot Panel	
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ARMED	
NOTE: (Must have master autopilot switch located on pilot's panel)	
LVL: The LVL mode is used to maintain wings level roll attitude in both the flight director (autopilot off) and autopilot engaged mode.	
Other Modes	
TST: Tests all bulbs and disengages all autopilot modes.	

ENG: Master autopilot mode. (Autopilot master switch located on pilot's panel must be on.)

SFT: The SFT mode is used to soften autopilot pitch and roll response during flight in turbulent air. This mode is locked out when NAV lcoalizer/VOR approach course is captured. This mode is not available during flight director only operation. (This function is not included on our model.)



SPD: The SPD mode is used to maintain the airspeed or Mach at the moment of mode engagement by commanding pitch attitude changes.

VS: The V/S mode is used to maintain the rate of climb or decent existing at the moment of mode engagement by commanding pitch attitude changes.

GS: The GS mode is used to intercept and track an ILS gliddeslope inbound when valid data is available from the active navigation reciever. This mode is functional only when NAV mode is selected.

ALT/SEL: The ALT/SEL is selected to level off at the altitude preselected on the alerter control when the flight director or autopilot is engaged in any vertical mode. When the preselected altitude is reached, the ALT/SEL mode is disengaged and the ALT mode is engaged.

ALT HLD: The ALT HLD mode is used to maintain the barometric altitude existing at the moment of mode engagement.

Anti-Ice Fuel Computer Panel Detailed Info.

- 1. Windshield Anti-Icing
- 2. Pitot Static Ice Protection
- 3. Wing and Stabilizer Anti icing (See test panel section for details.)
- 4. Engine Anti Icing
- 5. Marker Beacon Volume Control (not simulated)
- 6. Radio Altimeter Control: When this switch is in the upper position, power is supplied to the radio altimeter
- 7. Master Autopilot Switch: This switch must be on for the FC 530 unit.
- **8. VG ERECT SWITCH:** When pressed a fast erection cycle for the corresponding gyro. When pressing when autopilot is engaged will cause disengagement.
- **9. Slaving Controls Pilot:** The FREE/SLAVE is positioned to 'SLAVE' for slaved operation, and 'FREE' for unslaved operation. In slaved operation, heading displacement errors are corrected automatically through the gyro slaving circuit. In unslaved operation, heading displacement errors are corrected using the L/R SLAVE switch to rotate the compass cards left or right to agree with the magnetic heading.
- 10. AC Bus Primary / Secondary: When the AC BUS switch is set to the upper 'PRI position, left 115 VAC bus power is supplied to the gauge through the .25-amp PRI AC VM circuit breaker on the pilot's CB panel. When the AC BUS switch is set to the lower 'SEC' position, left 115 VAC bus power is supplied to the gauge through the .25-amp PRI AC VM circuit breaker on the co-pilot's CB panel.
- 11. Emergency Battery: To test the emergency battery before flight the EMER PWR switch should be positioned to STBY before the battery switches are turned on. The EMER PWR annunciator should illuminated. Turn a battery switch ON and the EMER PWR annunciator light should extinguish as the standby indicator is then powered by a main battery. The emergency battery must be turned off after flight or the emergency battery will drain.

Anti -Ice Fuel Computer Panel Detailed Info.

12. Fuel Computers: With fuel computers on, when turbine N2 reaches 45% RPM the starter will automatically disengage. With the fuel computers off, the starter/ generator switch must be moved to OFF when turbine N2 reaches 45% RPM.

13. Starting Pressure Regulator: When positioned L or R the switch commands the fuel computer to provide increased fuel scheduling for engines starting. An increase in the fuel flow gauge can be seen. Do not energize the SPR switch at any time than engine start.

Start Panel Instructions

- 1. Turn on both fuel computer switches. (With fuel computers on the start light will distinguish when engine starts. If fuel computers are off the start light will remain on until the start switch is off or on L GEN.
- 2. Check that thrust levers are in Idle Cutoff.
- **3.** Right click GEN switch down to the start position. Wait for N1 RPM to reach 10% then move thrust lever upto idle.
- **4. AIRSTART:** (Windmilling or airstarts may be attempted for emergency procedures.)

To shutdown 1 engine left click thrust lever lock. To shutdown both engines middle click mouse wheel.

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Lower Center Panel Detailed Info.

- 1. Anti-Skid Switch: Use this to prevent lockup of brakes. Indication on the anti-skid panel will light for any fault in the anti-skid system with anti-skid switch on or if the switch is off.
- 2. Stall Warning Switch: The stall warning lights on the annunciator panel will light when the battery switches are turned on, and the stall warning switches are in the OFF position. With the stall warning switches ON and the control column shaker actuated, the light will flash until the AOA diminishes to a safe point. When the AOA is in the yellow margin and the stall warning lights will illuminate steady and stick shaker will occur, when in the red margin the stick pusher is pushed forward to prevent a stall.
- 3. Warning System Check: (Middle click mouse wheel to use test button)
- [A.] Cabin Altitude Check: Cabin altitude warning shall sound.
- [B.] Mach Check: Must have PRI or SEC INV on, have pitch within T.O. Segment. L STALL switch on. Control column shall aft with 18 pounds of force and the aural overspeed warning shall sound.
- [C.] Mach Trim Check: The stablizer trim will trim slowly in the nose up direction for 1 to 3 seconds and then stop. The MACH TRIM warning light shall illuminate and the stall warning horn shall sound.
- [D.] Fire Detection Check: Both ENG FIRE PULL t-handles and the MASTER WARN will flash.
- **[E.] L R STALL:** The pilot's AOA indicator will sweep from the green segment to the red segment. As the needle passes through the yello margin, the shaker will actuate and the L or R STALL warning light shall flash. As the needle advances to the red segment, the pusher will actuate. L or R STALL warning light will illuminate steady just prior to or at the pusher actuation.
- **4. Hydraulic Pump:** This switch operates the electric hydraulic pump. Turn this switch on to set the parking brake before the engines are started. Once engines are operating, the engine driven hydraulic pumps supply hydraulic pressure. Leave the switch in the ON position for flight.

Lower Center Panel Detailed Info.

- **5. L R Landing / Taxi Lights:** With the L or R switch in the down position both landing and taxi lights are set OFF. With the L or R switch in the middle position only the taxi corresponding light is ON. With the L or R switch in the upper position both landing and taxi corresponding lights are ON.
- **6. No Smoking / Fasten Seat Belt:** With the switch located in the down position the seat belt light in the cabin is ON. With the switch positioned in the middle position both no smoking and fasten belt lights in the cabin are OFF. With the switch positioned in the upper position both no smoking and fasten belt lights in the cabin are ON.
- **7. Horn Silence:** The HORN SILENCE switch is spring loaded to the OFF position. If the cabin altitude exceed 10,100', the cabin altitude warning horn sounds. The horn may be silenced by moving the momentary HORN SILENCE switch to the up position.
- 8. Spoileron Reset: Not simulated!
- 9. Wing / Stabilizer Temperature:

[RED] Indicates a freezing condition will occur on surfaces below 35°F or a system failure has occured.

[GREEN] Indicates that above 35°F moisture will not freeze to surface and the system is functioning properly.

[YELLOW] Indicates an overheating condition and possible system failure or malfunction has occured.

- 10. Temperature Control: Indicates the position of the hot air bypass value (H-valve). Used to control the cabin temperature.
- 11. Flaps: Indicates the flaps position.

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Climate / Lights Panel Detailed Info.

- 1. Auto / Manual: Selects automatic or manual control of the cabin temperature. When set to AUTO, the climate control systems automatically adjusts the position of the hot air bypass valve (H-valve) to maintain the desired cabin temperature set with the COLD/HOT knob. In MAN, pilot has direct control of the H-valve.
- 2. Cold / Hot: Controls the desired cabin temperature. In the AUTO mode, temperature is controlled by the controller based on the position of the COLD/HOT knob. In the MAN mode, pilot has direct control of the hot air bypass valve (H-Valve) using COLD/HOT knob.
- 3. Cool / Fan: Operation simulated. In the COOL position, the freon air conditioner provide cool air to the cabin. Ensure that the CABIN AIR switch is in the off position. In the FAN position, the blower fans operate but not the air conditioner itself. This switch must be OFF for engine start.
- 4. Recognition Lights: Turns on the recognition lights located on both tip tanks.
- **5. Strobe Lights:** Turns on strobe lights located on both navigation light fixtures on each tip tank.
- 6. Navigation Lights: Turns on both navigation lights located on the side of both tip tanks and one white navigation on the tail light fixture.
- 7. Beacon Lights: Turns on both beacon lights located on the top of the vertical stablizer and the bottom of the fuselage.
- 8. Bleed Air: With the switch in the bottom position the bleed air system is off. With the switch in the middle, position the bleed air system is on. With the switch in the upper position the bleed air emergency system is on.
- 9. Auxiliary Heat: Not Simulated!
- 10. VG Erect Switch: When pressed a fast erection cycle for the corresponding gyro. When pressing when autopilot is engaged will cause disengagement.
- 11. Slaving Controls Co-Pilot: The FREE/SLAVE is positioned to 'SLAVE' for slaved operation, and 'FREE' for unslaved operation. In slaved operation. In slaved operation, heading displacement errors are corrected using the L/R SLAVE switch to rotate the compass cards left or right to agree with the magnetic heading. Return

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Fuel System

- 1. Fuel Quantity Indicator
- 2. Fuel Quantity Selector: Check fuel quantity and balance, wing-to-ting and tip-to-tip.
- 3. Fuel Used Counter: You must push the reset counter to start counting fuel burn.
- **4. Jet Pumps and Standby Pumps :** Jet pump switches open the motive flow valves allowing engine fuel pump pressure to operate jet pumps located in the tip tanks and wing tanks. These values are normally left in on position. The standby pumps provide fuel pressure for engine starting automatically during the start sequence. They can be manually turned on for fuel balancing with the crossflow value opened. The standby pumps also activate when the Transfer switch is placed into the FILL position to fill the fuselage tank.
- **5. Fuel Jettison :** Empties tip tanks only.
- **6. Cross Flow Valve :** If you have a fuel imbalance and you want to move fuel from the left wing tank to the right wing tank switch open the cross flow and switch open the left standby pump. To move fuel from the right wing to the left wing, turn on the right standby pump.
- 7. Fuselage XFER-FILL Valve:

Fill Position: The transfer and crossflow valves are sequenced open, and both standby pumps are energized automatically on to fill the fuselage tank. When the tank is full, a float valve closes the valves, turn off the standby pumps, and illuminates the green FULL light.

XFER Position: The transfer and crossflow valves are sequenced open and the transfer pump is energized automatically while both standby pumps are deactivated. When the fuselage tank is empty, the white EMPTY light is illuminated. Position the XFER-FILL switch to off.

The Learjet 35A engines only burn fuel from wing tanks. Fuel from the tip tanks are transferred to the wing tank by gravity until the fuel in each tank is approximately 600 lbs. Tip fuel is then transferred by the motive flow jet pumps in each tip tank.

When the tip tank fuel decreases below 760 lbs. In each tank, place the FUS TANK XFER-FILL switch to XFER. Monitor that the fuselage fuel transfer evenly from the fuselage tank into each wing tank.

Opening the aircraft options panel (Shift+2) allows you to see what fuel valves are open as illustrated fuel paths will apear. This will allow you to learn the fuel system as your using the fuel functions.

Return

Center Pedestal Panel Detailed Info.

- 1. Pitch Trim Indicator
- 2. Aileron Trim Indicator
- 3. Rudder Trim Indicator
- **4. Steer Lock:** When steer lock switch is pressed the steer lock is disabled allowing full range steering for the front gear. When the STEER LOCK switch is pressed a [STEER ON] light will show on the main annunciator panel. To disable the steer lock you must press the orange MSW switch located on the pilot's or co-pilot's yoke. When the aircraft speed increases the steering will reduce range until 45 knots. At 45 knots the steer lock system will disable.

Steer lock switch can be assigned to the keyboard / joystick by using the 'TAIL HOOK' assignment.

- **5. Primary / Secondary Pitch Trim Switch:** When this switch is set to the upper 'PRI' position, the pitch trim system operates in the primary mode and pitch trim commands are made using the control wheel (YOKE) trim switches. When set to the lower 'SEC' position, the pitch system operates in the secondary mode and pitch commands are made suing the secondary pitch trim switch. When set to the center'OFF' position, the primary and secondary motors, pitch trim control circuits, and the autopilot will be inoperative.
- 6. Secondary Pitch Trim Switch
- 7. Rudder Trim Switch

Center Pedestal Panel Detailed Info.

8. Yaw Damper: On the FC-530 equipped airplanes, the primary or secondary yaw damper system is selected for operation or testing by pressing the corresponding PWR switch. When this switch is pressed and power is available to the selected system, the green [ON] annunciator above each switch will be illuminated. With power available to both systems and both [ON] annunciators illuminated, pressing and holding the TST switch initiates simultaneous testing of both systems. During this test, the [PR] and [SEC] annunciators should illuminate and both effort indicator pointers should swing to the right, then slowly to the left.

With the [ON] annunciators illuminated, the selected system is engaged by pressing the corresponding ENG switch. ENG switch logic is such that only one system may be engaged at a time. Selection of either system will disengage the other. The engaged system is indicated by illumination of the green [ENG] annunciator above the corresponding PRI or SEC ENG switch. The direction of the rudder deflection is indicated by the corresponding PRI or SEC effort indicator.

9. COMM 2 / NAV 2 / ADF 1 / ADF 2 Radios

Aileron and primary pitch trim commands are located on the pilot's and co-pilot's yoke!

















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Control Wheel Trim Switch ('Barrel Switch'): Either control wheel trim switch (NOSE UP/ NOSE DOWN/LWD/RWD) functions as a manual autopilot controller when moved in any of the four directions without depressing the trim arming button. When an attitude change is made this way, the appropriate servo changes the attitude of the aircraft and disengages any roll or pitch modes previously selected in the affected axis except NAV ARM, G/S ARM, and ALT SEL ARM. The autopilot reverts to basic attitude hold in the affected axis when the switch is released. Depressing the trim arming button and moving the trim switch in any of the four directions disengages the autopilot, and the autopilot disengagement tone sounds. This is the normal means of disengaging the autopilot since it does not disengage the yaw damper. Previously selected flight director modes are not disengaged when the autopilot is disengaged.



Master Switch Wheel: When pressed, disengages auopilot, yaw damper, and nosewheel steering (on the ground only). When pressed and held, it disengages:

Primary & Secondary Trim.

Pitch Servo: Stick pusher & stick nudger (both stall protection devices) and the stick puller (overspeed protection device).



Control Wheel Maneuver Switch (MANUV/RP): Depressing and holding either the pilot or copilot MANUV/RP switch temporarily releases autopilot access to the pitch and roll servos and extinguishes the green ROLL and PITCH annunciators but does not cancel any previously selected flight director roll or pitch modes. This enables either pilot to change the aircraft attitude in both pitch and roll axes manually. When the switch is released, the autopilot resynchronizes to and holds the original roll mode and the existing (new) values in the SPD. V/S or ALT HLD modes; the green ROLL and Pitch annunciators illuminate again.

Pilot Yoke Detailed Info.

Cabin Door Detailed Info.





UPPER DOOR HANDLE: The upper handle will un-latch the upper section of the door. To un-latch the motor hook must be un-hooked. To latch the upper door handle, the motor hooks must be hooked. The motor hooks must be motored back to the un-hooked position after the door is latched otherwise the red DOOR annunciator will illuminate.

LOWER DOOR HANDLE: The lower door handle will un-latch the lower section of the door . To un-latch move handle to the right. To latch / lock move handle to the left.

MOTOR SWITCH: The motor switch will pull the door tight to allow the upper handle to latch. When the switch is in the down position the motor is no longer holding the door tight.

LOWER DOOR CABLE: Lower door cable will extend the lower door when the lower door handle is un-latched. To latch click again on the lower door cable to close the lower door and the door will automatically latch.