Operating Limitations

Certification and operational limitations are conditions of the type and airworthiness certificates and must be complied with at all times as required by law.

Certification Status

Maximum Design Ramp Weight	13,500 POUNDS
Maximum Design Takeoff Weight	13,300 POUNDS
Maximum Design Landing Weight	12,700 POUNDS
Maximum Design Zero Fuel Weight	9,500 POUNDS

NOTE: Check your aircraft listed Maximum Design Zero Fuel Weight for a variance to the above.

Takeoff Weight

Limited by the most restrictive of the following requirements:

Maximum Certified Takeoff Weight	13,300 POUNDS
Maximum Takeoff Weight Permitted by Climb Requirements	REFER TO TABLES IN SECTION IV/AFM
Takeoff Field Length	REFER TO TABLES IN SECTION IV/AFM

Landing Weight

Limited by the most restrictive of the following requirements:

Maximum Certified Landing Weight	12,700 POUNDS
Maximum Landing Weight Permitted by Climb Requirements or Brake Energy Limit	REFER TO TABLES IN SECTION IV/AFM
Landing Distance	REFER TO TABLES IN SECTION IV/AFM

Weight And Balance Data

The airplane should be operated in accordance with the approved loading schedule. (Refer to **Weight and Balance Data Sheet and Model 550 Citation II Weight and Balance Manual**.)

Speed Limitations

Maximum Operating Limit Speeds

Maximum V_{MO}/M_{MO} at 9500 lbs ZFW:

M_{MO} (Above 28,000 feet) . . . . . 0.705M INDICATED

V_{MO} (14,000 - 28,000 feet) . . . . . 277 KIAS

V_{MO} (Sea Level - 14,000 feet) . . . . . 262 KIAS

Minimum Operating Speeds

Minimum Control Speed, Air – V_{MCA} . . . . . 77 KIAS

Minimum Control Speed, Ground – V_{MCG} . . . . . 62 KIAS

Takeoff And Landing Operational Limits

Maximum Altitude Limit. . . . . 14,000 FEET

Maximum Tailwind Components. . . . . 10 KNOTS

Maximum Water/Slush on Runway . . . . . 0.4 INCHES

Maximum Tire Ground Speed. . . . . 165 KNOTS

Maximum Ambient Temperature. . . . . ISA + 39°C

Minimum Ambient Temperature . . . . . -54°C

- The autopilot and yaw damper must be OFF for takeoff and landing.
- Vertical navigation system must be OFF below 500 feet AGL.
- Takeoff and landings are limited to paved runways unless incorporating SB550-32-06.
- Takeoff is prohibited if the aircraft is contaminated by frost, ice, snow or slush as defined in the ***Temporary FAA Approved Airplane Flight Manual Change*, Sec. II, Page 2-11, "Frost, Ice, Snow And Slush Takeoff Limitations."**

Enroute Operational Limits

Maximum Operating Altitude . . . . . 43,000 FEET

Minimum/Maximum
Operating Temperatures. . . . . .ISA +39°C (REFER TO **FIGURES 2-7 AND 4-6 OF AFM**)

Maneuvers

No acrobatic maneuvers, including spins, are approved. No intentional stalls permitted above 25,000 feet or at engine speeds between 61.0% and 65.0% N_1.

Electrical System

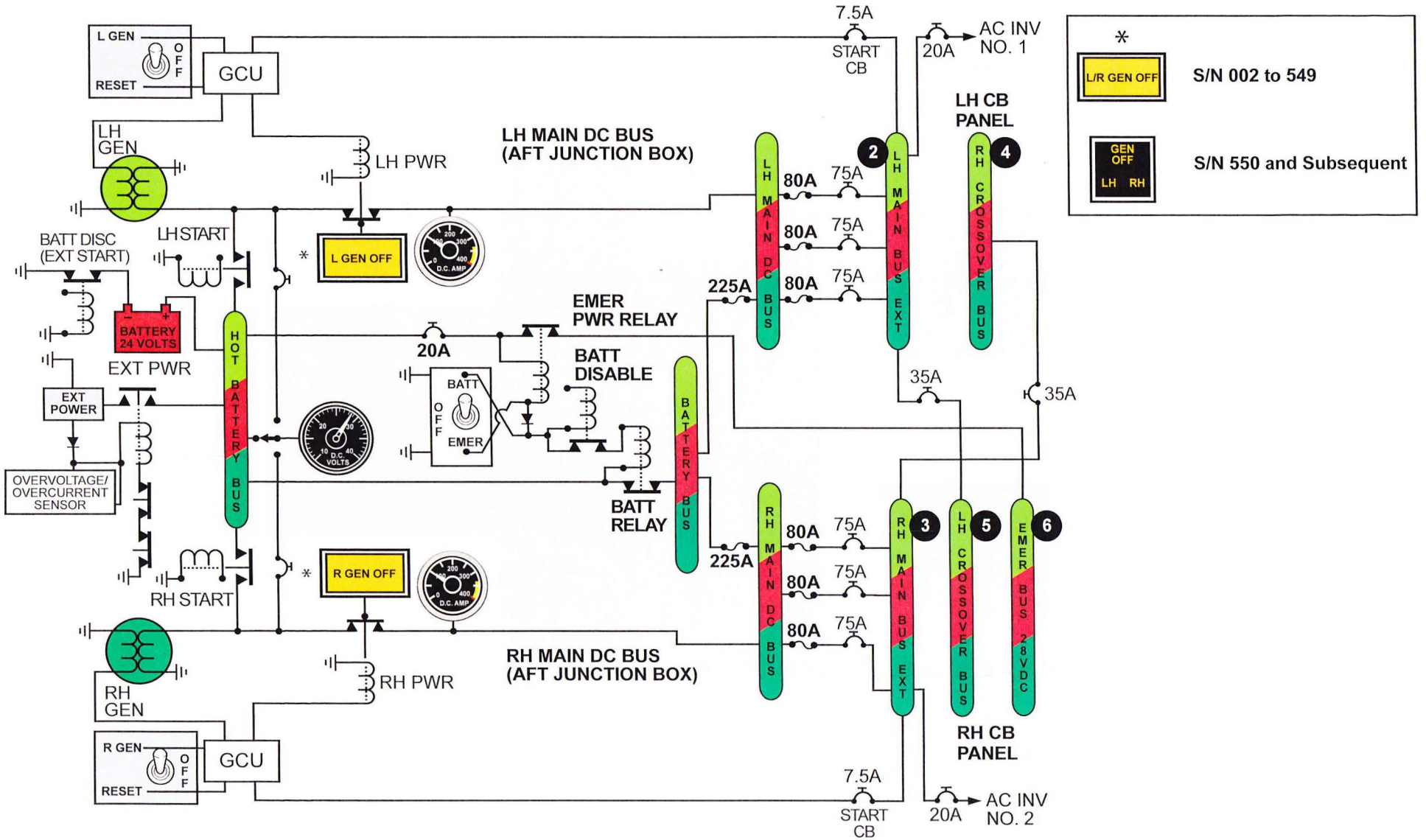


Figure 1: *DC Electrical System Units 002-626*

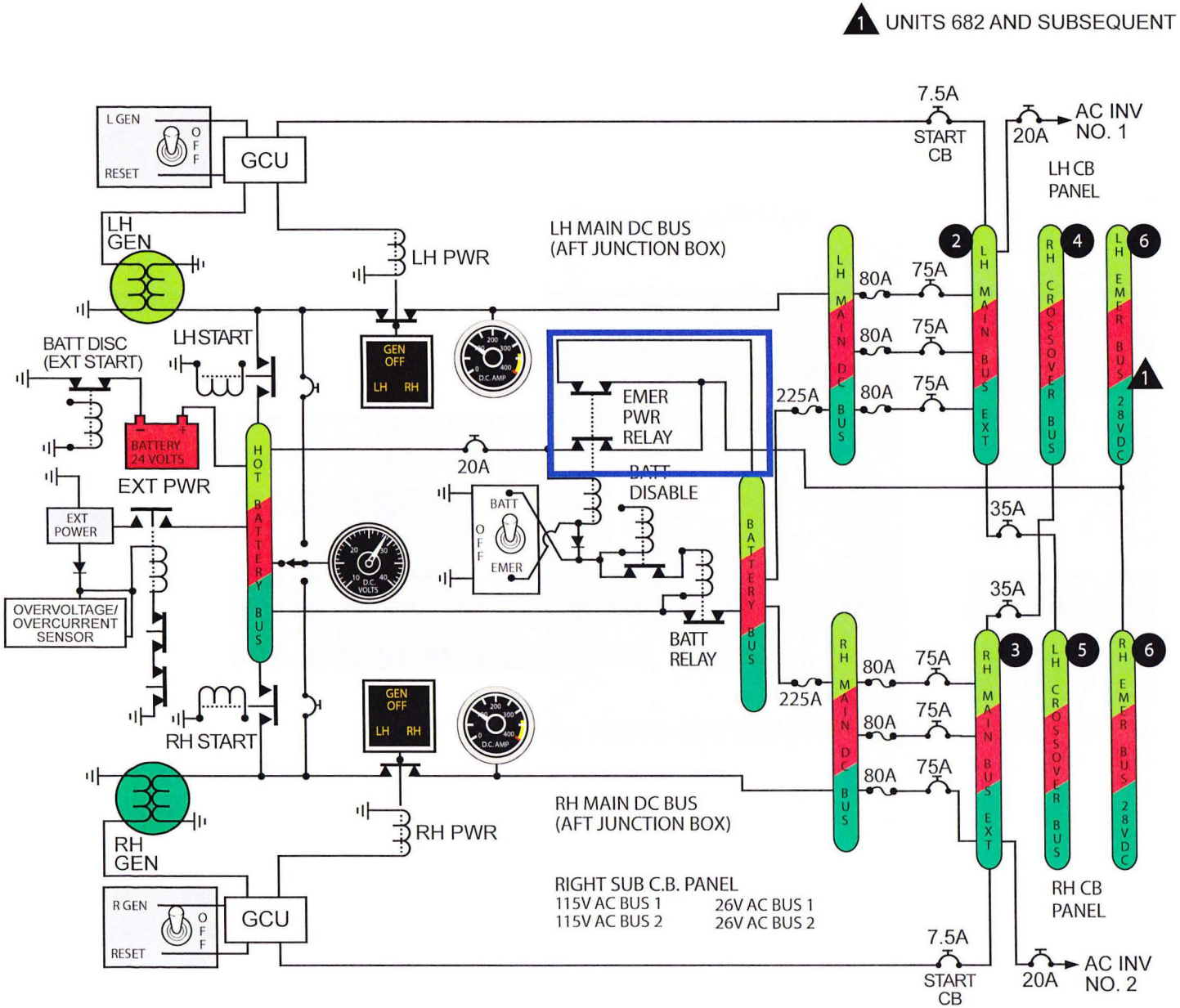


Figure 2: ***DC Electrical System Units 627 and Subsequent***

DC Electrical Power Sources

- 2 each 400 Amp Generators regulated to 28.5V
- 1 each 24 Volt Battery
- 1 each Receptacle for application of external power

DC Electrical Buses

- 8 each DC Buses
- 1 each DC Emergency bus (Units 627+ utilize 2 each Emergency Buses; one each on the left and right CB panels)

AC Electrical Power Sources

- 2 each AC inverters, each providing 26V & 115V @ 400Hz. (Units 002 – 549 operate on a single inverter. Subsequent units operate on both inverters simultaneously.)

AC Electrical Buses

- 2 each 26V Buses (L/R)
- 1 each 115V Buses (L/R) (Units 627+ AC bus breakers on copilot CB Sub-Panel.)

NOTE: ***The Emergency Bus, Units 0001 through 626, is powered from the Hot Battery Bus. For aircraft Units 627+, the Emergency Bus is powered by either the Hot Battery Bus OR the Battery Bus. Also, note differences in CB panel layouts.***

External Power Source Requirements

- 28 Volts
- 1000 Amps capability

Battery Limitations

- Three engine starts per one-hour period. (Three generator assisted cross-starts equals 1 battery start.)
- Service the battery per the maintenance manual when the battery temperature exceeds 145°F.
- If the BATT O' TEMP annunciator illuminates on the ground, complete proper maintenance before takeoff.

Starter Limitations

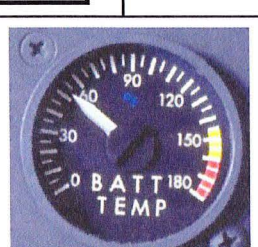
- Three starts per 30 minute period with a 30 second cool down period between starts.

Generator Limitations

- Amps limited to 325 per generator when on the ground.
- For unit numbers -001 thru -295:
  - Amps limited to 400 per generator when in flight below FL250.
  - Amps limited to 250 per generator when in flight above FL250.
- For unit numbers -296 and on or with SB-550-54-04:
  - Amps limited to 400 per generator when in flight below FL350.
  - Amps limited to 325 per generator when in flight above FL350.
- Amps limited to 50% above allowable for 5 minutes during emergency situations. (Time limitation is over the life cycle of the generator; not per occurrence.)

NOTE: See SB550-54-04, (Starter Generator Air Scoop Installation), for a possible variance to the above.

Annunciators

Units 550+	Units 001-549	
		**GEN OFF** – The affected generator is off. ***NOTE: A dual generator failure annunciation will be accompanied by illumination of the flashing MASTER WARNING lights.***
 		**AC FAIL** – Illuminates upon high or low voltage or loss of power to the 115 Volt AC Bus. (Voltage is below 90 VAC or above 130 VAC.) **INVERTER FAIL** (Units 550 & Subsequent), illuminates when an AC inverter has failed. (Accompanied by illumination of the **AC FAIL** and flashing **MASTER WARNING** lights)
		**BATT O' TEMP/HEAT** – Illuminates steady between a battery temperature of 145° and 160°F. It flashes when the battery temperature exceeds 160°F. (Accompanied by illumination of the flashing **MASTER WARNING** lights)
 **All Units**		The battery temperature sensor for the BATT TEMP gauge is *separate* from the sensor of the **BATT O' TEMP/HEAT** annunciator light. The temperature sensor for this gauge does not activate the **Master Warning** lights. ***NOTE: The BATT TEMP gauge may have an INOP placard if a NiCad battery is not used.***

Hydraulic System

System Summary

The Citation II utilizes an open center (i.e., on demand) hydraulic system. Hydraulic fluid continuously circulates through the system at approximately 60 PSI because of the resistance in the lines. When pressure is required, a bypass valve closes and the pressure builds up to 1,500 PSI. When the pressure is no longer needed, the bypass valve opens and returns the system to its low pressure flow. A relief valve regulates the pressure between 1,350 and 1,500 PSI when the system is activated.

The hydraulic system in the Citation II activates the movement of the landing gear, thrust reversers and the speed brakes. Only the SII and the Citation V and subsequent models of Ultra and Encore have hydraulically activated flaps.

Limitations

The only AFM limitation for this system is the requirement to use Skydrol 500A, B, B-4, C, LD-4, or Hyjet W, III, IV, IVA or IVA Plus as fluid.

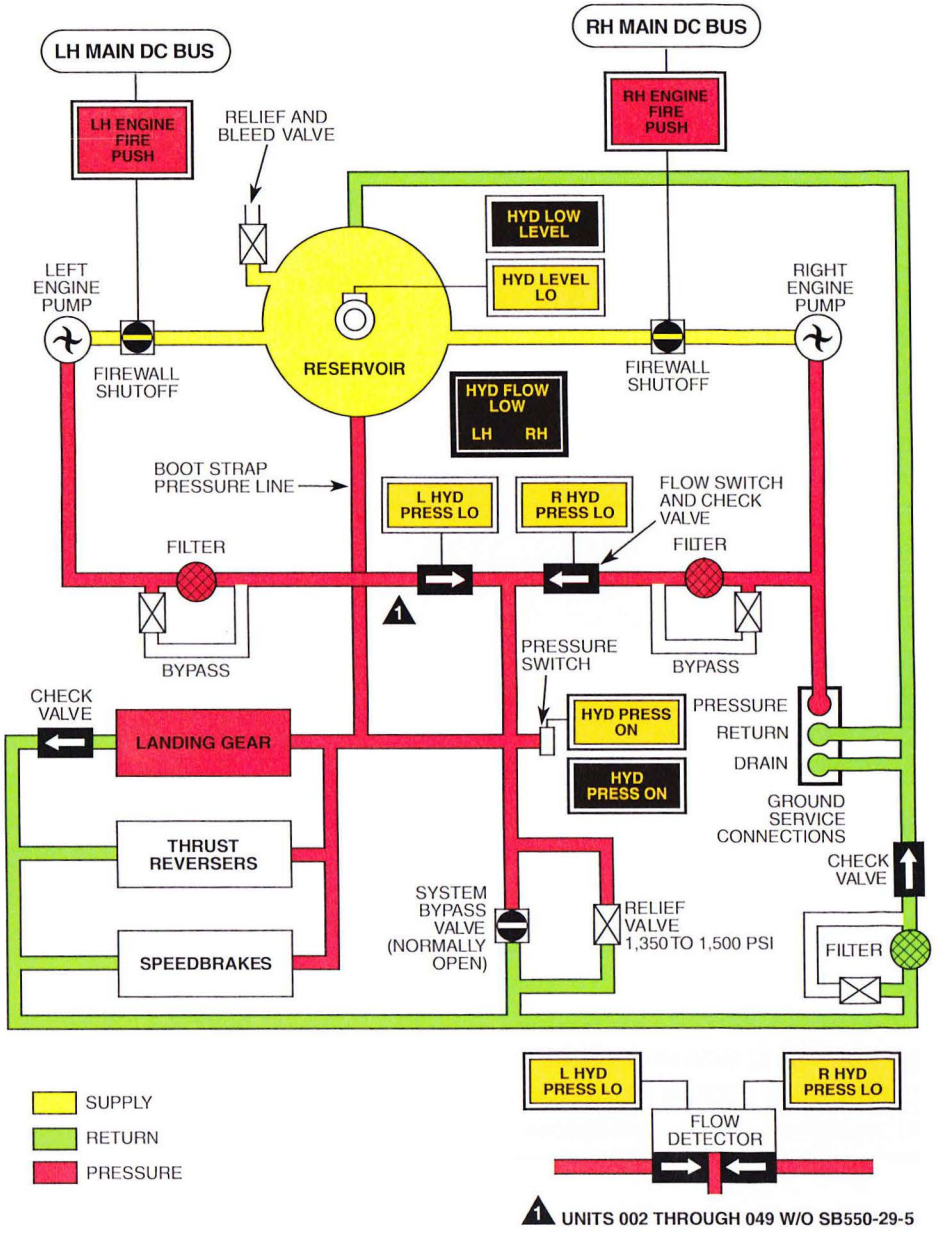


Figure 3: ***Hydraulic System***

Annunciators

Units 550+	Units 001-549	
		**HYD PRESS ON** – Indicates the system is pressurized. This annunciator is illuminated whenever the hydraulic system is activating the landing gear, speed brakes or thrust reversers. The light will illuminate when pressure is above 185 PSI. System pressure should be 1500 PSI.
		**HYD FLOW LOW or HYD PRESS** – In later models, the HYD FLOW LO annunciator indicates that the pump output has dropped to less than 0.45 gal/min (GPM). In earlier models, the HYD PRESS LO annunciator indicates below normal individual hydraulic pump pressure has dropped by 25 PSI or more.
		**HYD LOW LEVEL or HYD LEVEL LO** – Indicates the hydraulic reservoir fluid level is below operating level (< 0.2 gal).

Landing Gear and Brakes

System Summary

The Citation II landing gear system is a standard tricycle design that is electrically controlled and hydraulically actuated. Each gear assembly has a single tire. The nose gear has a chined tire that deflects water and slush on the runway from the aircraft's engines and airframe.

A backup manual gear extension system provides an alternate gear extension method if the primary system fails.

The Citation II brake system has pedal-operated multiple disc brakes on the main gear wheels incorporating the use of anti-skid. The system is controlled mechanically and actuated hydraulically. A back-up pneumatic system supplies pressure for braking if the primary system fails.

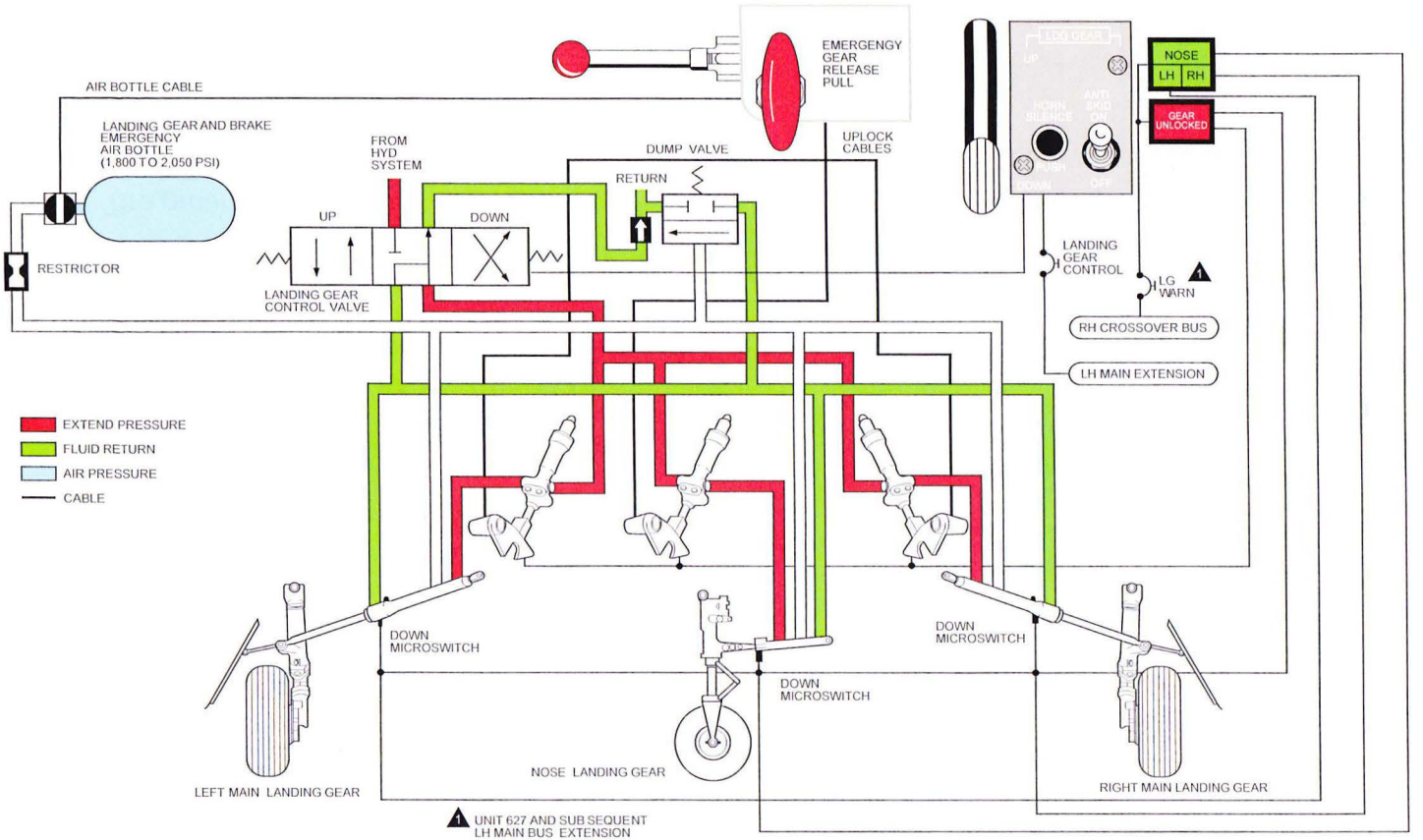


Figure 4: ***Landing Gear and Brakes System***

Limitations

Speed Limitations: (Units 002 through 626)

Tire ground speed . . . . . 165 KIAS

V_{LO}/V_{LE} . . . . . 176 KIAS

With SB550-32-14

V_{LE} . . . . . V_{MO}

V_{LO} – (Extending) . . . . . 250 KIAS

V_{LO} – (Retracting) . . . . . 200 KIAS

With Gravel Runway Kit Installed

V_{LO}/V_{LE} . . . . . 200 KIAS

Speed Limitations: (Units 627 and Subsequent)

Tire ground speed . . . . . 165 KIAS

V_{LE} . . . . . V_{MO}

V_{LO} (Extending) . . . . . 250 KIAS

V_{LO} (Retracting) . . . . . 200 KIAS

With Gravel Runway Kit Installed

V_{LO}/V_{LE} . . . . . 200 KIAS

Nose Wheel Steering – (Left or Right of Center)

Rudder deflection (only) . . . . . 20°

Differential braking and thrust. . . . . 95°

Towing . . . . . 95° (CONTROL LOCK OFF)

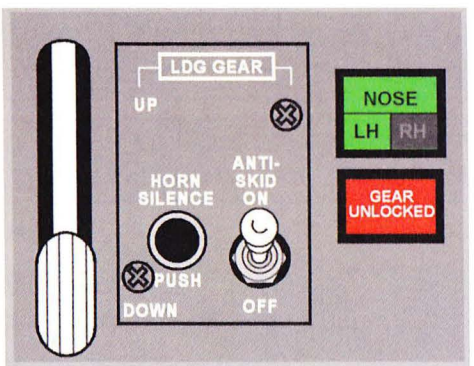
Towing . . . . . 60° (CONTROL LOCK ON) NOT RECOMMENDED

NOTE: ***Takeoffs and landings are limited to paved runways unless equipped with optional Gravel Runway Modification; either factory installed or through appropriate Cessna Service Bulletin.***

NOTE: ***Maximum water or slush on the runway is 0.4 inches. Maximum listed snow on the runway, (per section VII, AFM), is 2.0 inches. The required tire pressure may vary due to weight modifications or Single Pilot operations.***

Annunciators

Units 550+	Units 0001 - 549	
PWR BRK LOW PRESS	PWR BRAKE PRESS LO	**POWER BRAKE LOW PRESSURE or POWER BRAKE PRESS LO** – The hydraulic brake system is at or below 750 PSI. The light is inactive with the landing gear retracted. **ANTI-SKID INOP** – Indicates the loss of antiskid capability or the system is turned off. The light is inactive with the landing gear retracted.
ANTISKID INOP DOOR NOT LOCKED	ANTI-SKID INOP	***NOTE:*** ▪ The **ANTI-SKID INOP** annunciator will always illuminate when the **PWR BRAKE PRESS LO** or **POWER BRAKE LOW PRESS** annunciator illuminates. ▪ Units 002 through 436, turn the Anti-skid switch off during taxi. ▪ Units 002 through 460, (without Goodrich Brakes), manual braking is available if power brakes fail. Prepare to use pneumatic brakes. Anti-skid is inoperative. ▪ All units with Goodrich Brakes or Units 461+, manual braking is not available if power brakes fail. Pneumatic brakes must be used. Anti-skid is inoperative.
All Units		**NOSE, LH, RH** – Each light indicates that landing gear is down and locked. **GEAR UNLOCKED** – One or more of the landing gear does not match the selected position of the gear selector handle. **Landing Gear Horn** – An audible warning horn sounds if either throttle is retarded below approximately 70% N_2 and the gear is not down and locked, (as well as airspeed below 150 KIAS on units 002 through 626 with SB550-32-15, units 627+ and SII. The horn resets if the throttle is advanced above approximately 70% N_2. The horn also sounds when the flaps are at 15°, with further retardation of either throttle and the gear is not down and locked. The horn also sounds if the flaps extend beyond the 15° position when the gear is not down and locked. In this situation, the horn cannot be silenced until the flaps are retracted back to 15° or all three gear assemblies are down and locked.



Autopilot/Flight Director

System Summary

The SPZ-500 Autopilot/Flight Director is a complete automatic flight control system that includes: flight director, automatic pilot, pilot's attitude director indicator (ADI) or (EADI), pilot's horizontal situational indicator (HSI) or (EHSI), air data computer (ADC), autopilot controller, vertical navigation system with altitude alerter, touch control steering, rate gyro and autopilot servos.

The Mode Control Panel consists of eleven push-on, push-off back lighted switches that select various flight director/autopilot modes of operation.

The Status of the selected mode is then displayed by amber lights when armed (ARM) or green lights when on (ON) or engaged (CAP).

The Autopilot Control Panel, mounted on the pedestal, provides the means of engaging the autopilot and yaw damper, as well as manually controlling the autopilot through the turn knob and pitch wheel.

Figure 12: *Units 002 - 626*

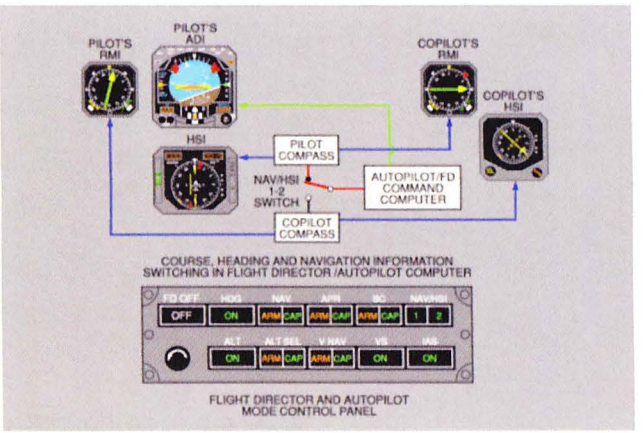


Figure 13: *Typical*

Figure 14: *Units 627 & Subsequent*

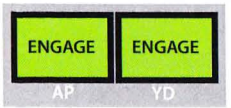
Limitations

Auto Pilot Limitations

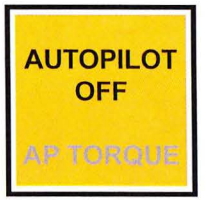
- One pilot must remain in his seat with the seat belt fastened during all autopilot operations.
- The autopilot torque monitor and roll monitor, (if installed), should be functionally tested per the Normal Procedures in the AFM prior to in flight use.
- Autopilot operation is prohibited above 14,500 ft, MSL, if the torque monitor, (AP TORQUE annunciator test), does not test per the Normal Procedures in the AFM.

Annunciators

All Units

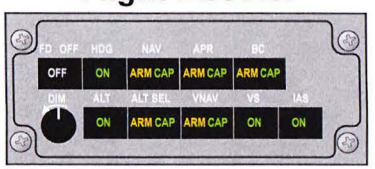


Units 550 +



Units 001 - 549

Flight Director



Mode

ADI Units 002 - 626

Mode

EADI Units 627+

ENGAGE AP – Depressing engages the autopilot and the yaw damper.

ENGAGE YD – Depressing engages the yaw damper.

AUTOPILOT OFF – Indicates the autopilot has been disconnected by normal or abnormal means.

> ***NOTE:*** ***Autopilot operation is prohibited above 14,500 feet if the torque monitor (AP TORQUE annunciator light) does not test, (before each flight), per the Normal Procedures.***

Mode Annunciation

FD OFF – Removes command bars from view on the ADI/EADI while maintaining flight director operation.

HDG – Heading select mode engaged.

VOR – A NAV mode (VOR) is armed or has been captured and is being tracked.

LOC – Localizer has been armed or captured.

APR – VOR approach selected or course capture has occurred.

GS – Glideslope armed or captured.

ASEL – Altitude preselect armed or captured.

ALT – Altitude hold mode engaged.

BC – Back course armed or captured.

VS – Vertical speed hold has been selected and captured.

IAS – Indicated airspeed hold has been selected and captured.

VNAV – VNAV mode is armed or captured.

LNAV – Long range NAV (FMS) mode has been selected.

GA – Go-around mode has been selected.

Powerplant

Pratt & Whitney JT15D-4 Turbofan Engine

System Summary

Two Pratt & Whitney of Canada, JT15D-4 engines power the Citation II. The JT15D-4 is a lightweight, twin-spool, high-bypass ration, (2.5:1), front turbofan engine that produces 2,500 pounds of static thrust.

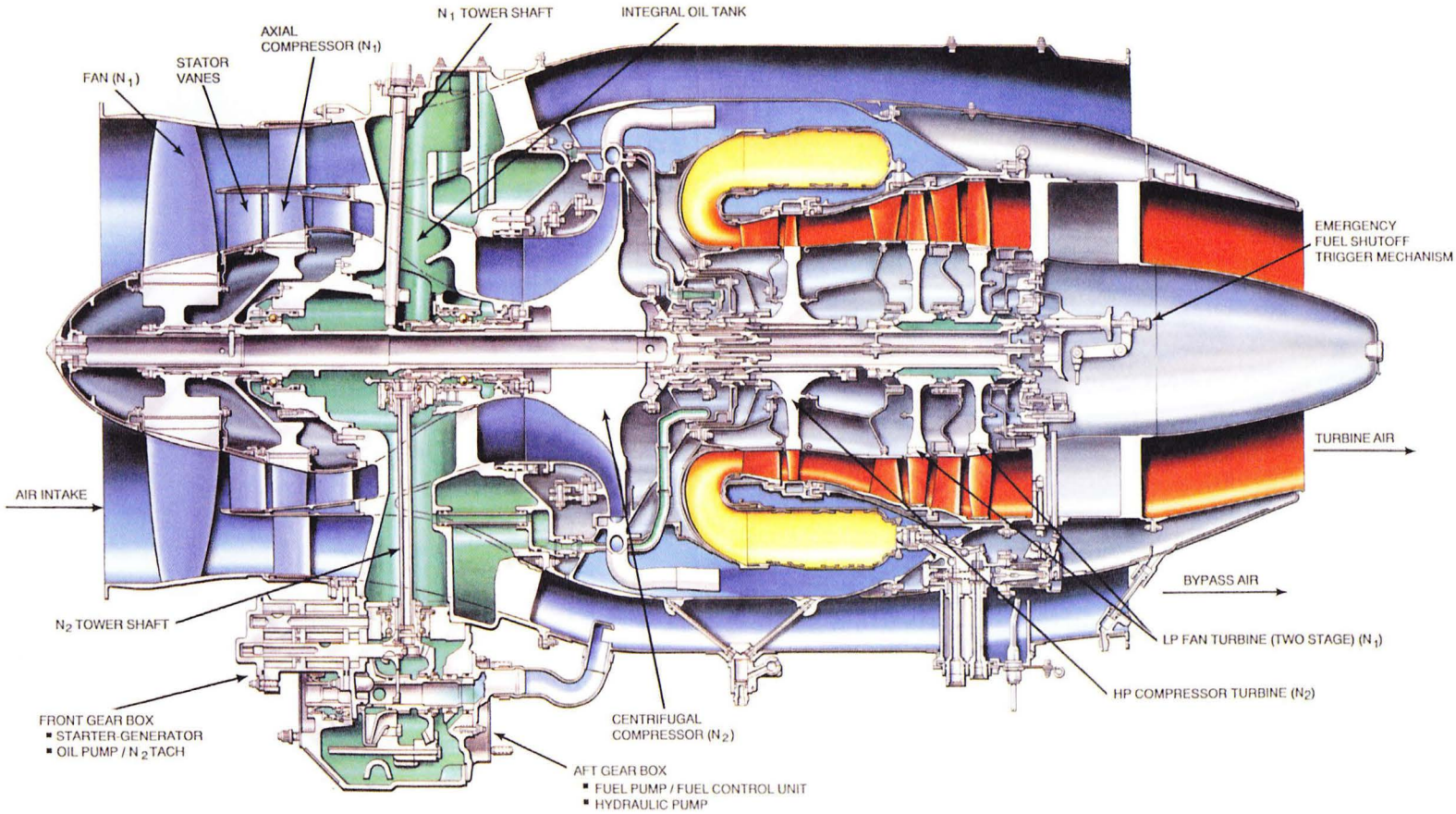


Figure 5: ***Pratt & Whitney JT15D4 - Turbofan Engine***

Limitations

Engine Operating Limits

	Time Limit (minutes)	ITT (°C)	N_2% RPM	N_1% RPM	Oil Pressure (PSIG)	Oil Temperature (°C)
Takeoff	5	700	96	104	70 - 85	10 - 121
Max Continuous	Continuous	680	96	104	70 - 85	0 - 121
Max Cruise	Continuous	670	96	104	70 - 85	0 - 121
Idle	Continuous	580	49	--	35 minimum	-40 - 121
Start	--	700 for 2 seconds	--	--	--	-40 minimum
Acceleration	--	680	96	104	--	0 - 121

Table 1: ***Engine Operating Limitations***

STATE	No Action Required	Logbook Entry Required		Refer to Engine Maintenance Manual	
	Turbine Speed % RPM	Fan Speed % RPM	Turbine Speed % RPM	Turbine Speed % RPM	Fan Speed % RPM
Transient	92 - 96	104 - 110	96 - 98	Exceeds 98	Exceeds 110
Steady	--	104 - 106	--	Exceeds 98	Exceeds 106

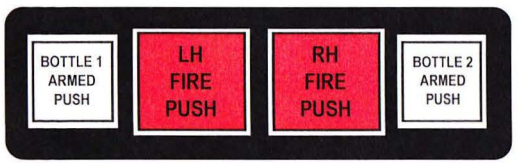
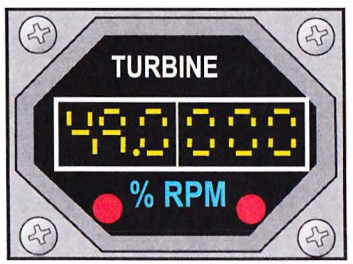
Table 2: ***Pilot Actions for Exceeded Engine Limitations***

The following oils are approved for use:

MOBIL JET OIL II	MOBIL JET OIL 254
EXXON TURBO OIL 2380	CASTROL 5000
ROYCO TURBINE OIL 500	ROYCO TURBINE OIL 560
AERO SHELL TURBINE OIL 500	AERO SHELL TURBINE OIL 560

Continuous engine ground static operation up to and including five minutes at takeoff thrust is limited to ambient temperatures not to exceed ISA+39°C.

Annunciators

Units 550+	Units 0001 - 549	
		**OIL PRESS WARN** – Indicates respective engine oil pressure is below 35 PSI. **OIL PRESS LO** – Indicates respective engine oil pressure is below 35 PSI. (Accompanied by illumination of the flashing **MASTER WARNING** lights)
		**PRECOOL FAIL** – The air from the precooler is above 282°C, +/ -6°C (540°F, +/- 43°). ***NOTE: Found only on units 001-481, 483 & 484.***
		**F/W SHUTOFF** – Indicates the fuel and hydraulic firewall shutoff valves closed after fire switch actuation. Valves can be opened by resetting the fire switch.
		**ENGINE FIRE PUSH** – Indicates the respective engine fire detection system has detected a temperature of approximately 500 to 530°F. Depressing the fire switch closes the firewall shutoff valves and cuts off fuel and hydraulics. It also isolates the thrust reverser, trips the generator field and arms the fire extinguisher bottle to allow for both bottles to be discharged to the affected engine. **BOTTLE ARMED PUSH** – Indicates the bottle is armed to be discharged. Pushing the switch light discharges the bottle to the affected engine.
		**TURBINE % RPM** – The turbine speed indicator is a dual-reading digital display that indicates turbine speed as a percentage of maximum RPM. Each three-digit digital display shows N_2 RPM. At the maximum turbine speed of 96% RPM, the digits and a red-light flash as a warning.

Thrust Reversers

System Summary

The external target-type thrust reversers use two vertical doors (buckets) to direct exhaust gases forward for extra deceleration force during the landing ground roll. The hydraulically actuated and electrically controlled reversers mount to the aft engine fan nozzle and stow into the external aircraft contours to form the aft portion of the engine nacelle.

The pilot activates the thrust reverser system by operating thrust reverser levers that mount piggy-back on engine throttle levers. The reversers can be deployed only when primary throttle levers are in IDLE position and the aircraft is on the ground. Landing gear squat switches activate at touch-down to complete the electrical circuit necessary for reverser deployment.

Figure 6: ***Thrust Reversers***

Limitations

Operating Limitations

- Reverse thrust power must be reduced to the idle reverse detent position at 60 KIAS on landing roll.
- Maximum reverse thrust is limited to 94% N_1 for ambient temperatures above -18°C and 92% N_1 for ambient temperatures below -18°C.
- Maximum allowable thrust reverser deployed time is 15 minutes in any 1-hour period (to prevent hydraulic fluid heating).
- Thrust reversing on sod/dirt or gravel runways is not allowed.
- Simultaneous usage of both the drag chute and the thrust reversers is prohibited.

NOTE: The above constitutes a full listing of the Operating Limitations for thrust reversers per the AFM.

Annunciators

ARM – The respective Thrust Reverser system is pressurized to 200 PSI +.

UNLOCK – Indicates the reverser is not fully stowed.

DEPLOY – Indicates the reverser is fully deployed.

(When both squat switches indicate an inflight mode the **MASTER WARNING** annunciators are activated when an ARM light illuminates.

Fuel System

System Summary

The fuel tank in each wing, each capable of containing a maximum of 371 gallons, includes all the wing area forward of the rear spar except the inboard leading edge and the area above the main landing gear well.

Liquid-tight ribs at each end of the wing form the boundaries of the tank. Holes in the ribs and spars permit fuel movement within the tanks. Baffle plates in the outboard ribs prevent rapid outboard shift of fuel.

A sump area in the root of each wing contains a boost pump, a primary ejection pump, and quick drains for water and sediment removal. The sump ensures boost pump and ejector pump operation for a minimum of five seconds during negative G maneuvers (not exceeding -0.5 Gs). Two flapper check valves are on top of the fuel sump cover that forms a reservoir of fuel around the pumps. The fuel sumps are kept full by gravity feed fuel through the flapper valves and two transfer pumps that pick-up fuel from the low tank areas.

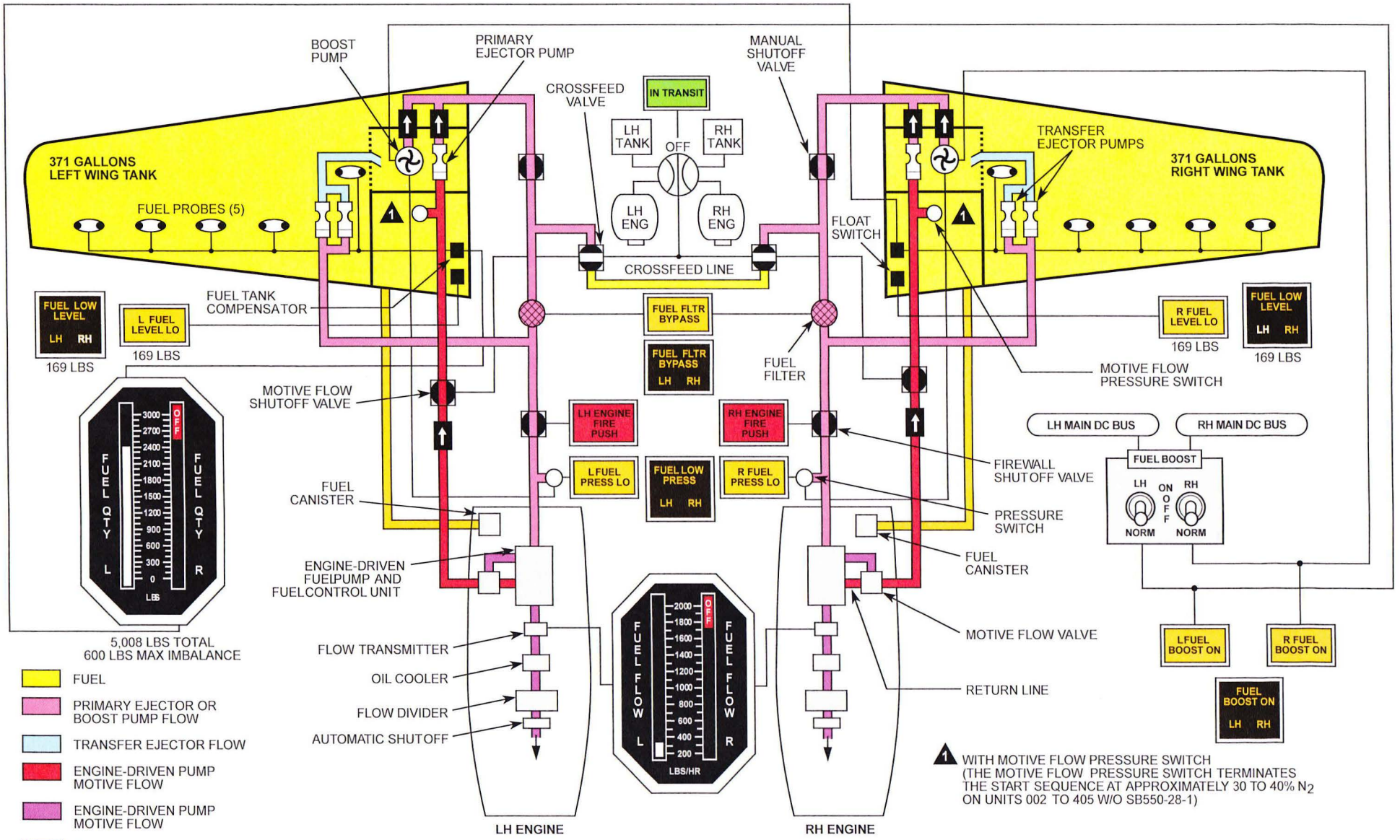


Figure 7: ***Fuel System***

Limitations

Limit	Jet A, A-1, -2 JP-5, JP-8	Jet B, JP-4	Avgas
Minimum Fuel Temperature, Takeoff	-40°C	-54°C	-54°C
Minimum Fuel Temperature, Start	-40°C	-54°C	-54°C
Maximum Fuel Temperature	+50°C	+50°C	+32°C
Maximum Altitude	43,000 feet	43,000 feet	18,000 feet
Maximum Asymmetric Fuel	600 pounds	600 pounds	600 pounds
Fuel Control Density	0.81	0.79	0.73

Table 3: *Fuel Limitations*

The following fuels are approved for use in accordance with the above chart:

- COMMERCIAL KEROSENE JET A
- JET A-1
- JET A-2
- JET B
- JP-4
- JP-5
- JP-8 per CPW 204 specification
- AVIATION GASOLINE, MIL-G-5572, all grades:
  - Maximum permitted is 50 hours or 3500 gallons between overhauls providing:
    1. Pilot confirms fuel temperature within limits.
    2. Maximum ambient air temperature (takeoff) +32°C.
    3. Boost pumps – ON.

       NOTE: To crossfeed, turn boost pump OFF on side opposite selected tank.

    4. Altitude below 18,000 feet.
    5. Hours used entered in Engine Logbook. For record keeping purposes, assume one hour of engine operation equals 70 gallons of gasoline.

- Maximum Asymmetrical fuel differential between wing tanks in any condition is 600 pounds.
- Anti-icing additive must be added to all approved fuels not presently containing the additive.
- Unusable Fuel – Fuel remaining in the tanks when the fuel quantity indicator reads zero is not usable in flight.
- Minimum required fuel for all operations is 500 pounds per side. Fuel cross feed is prohibited in descents. This limitation is in effect until SB550-28-14 has been complied with.

Annunciators

Units 550+	Units 0001 - 549	
	L FUEL BOOST ON	FUEL BOOST ON – Normal indication during engine start, crossfeed or with FUEL BOOST switch ON. It should illuminate in conjunction with FUEL PRESS LO indicating light if FUEL BOOST switch is in NORM position. ***NOTE: Illumination indicates fuel boost pump is receiving electrical power.***
	FUEL FILT BYPASS	FUEL FLTR BYPASS – Left, Right or both filters approaching, or being bypassed due to fuel filter restriction.
	L FUEL LEVEL LO	FUEL LOW LEVEL **or** FUEL LEVEL LO – Fuel quantity in the respective tank has reached approximately 169 pounds.
	L FUEL PRESS LO	FUEL LOW PRESS **or** FUEL PRESS LO – Indicates low fuel supply pressure to the engine-driven fuel pump. The primary pump failure will automatically initiate the boost pump operation if the FUEL BOOST switch is in the NORM position.
	L F/W SHUTOFF	F/W SHUT OFF – Fuel and hydraulic firewall shutoff valves closed after fire switch actuation. Valves can be opened by resetting fire switch.

Flight Controls

System Summary

The primary flight controls consist of the ailerons, elevators, and rudder. The mechanically driven flight controls operate through input received from the cockpit via direct cable.

The secondary flight controls consist of the flaps and the speed brakes. The flaps are electrically controlled and actuated. Speed brakes on the Citation II are electrically controlled and hydraulically actuated.

Trim tabs on the left aileron, right elevator, and rudder provide for roll, yaw, and pitch trim respectively.

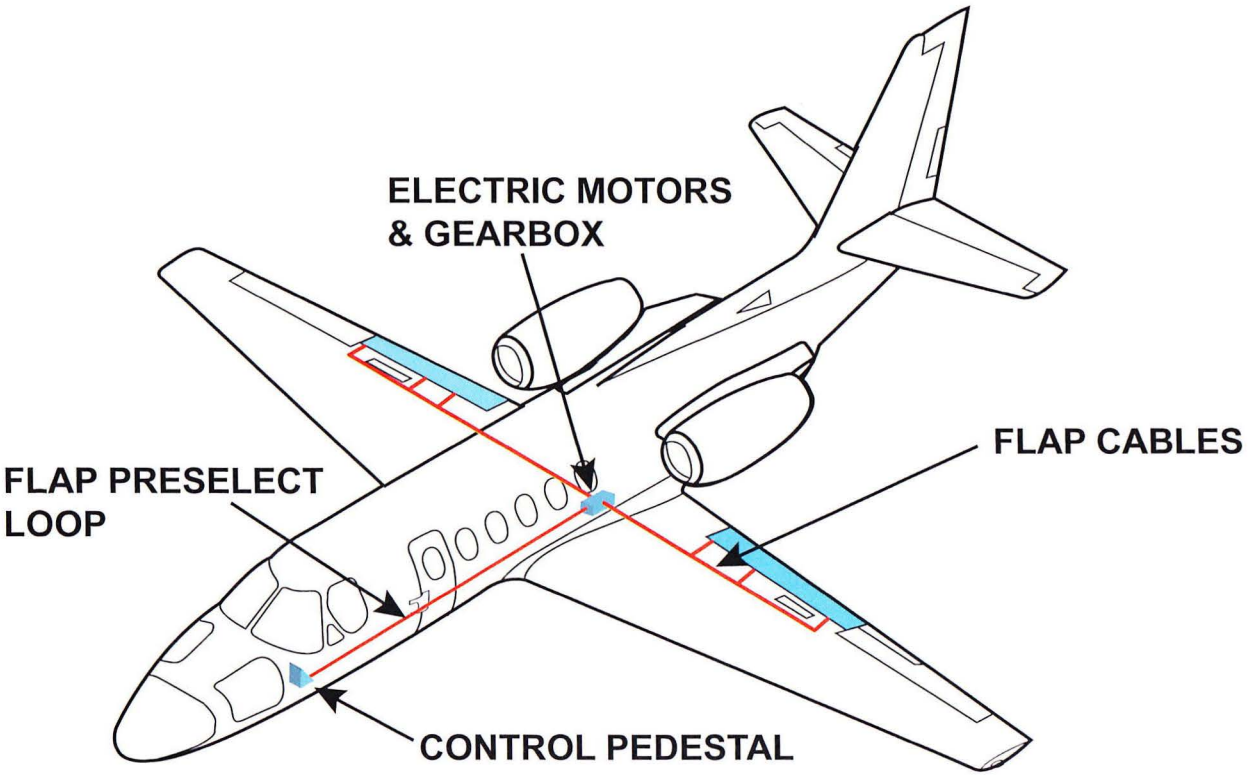


Figure 8: *Flight Controls*

Limitations

Speed Limitations

Maximum Flap Extended Speed – V_{FE}

Full Flaps – LAND Position (40°) . . . . . 176 KIAS

Partial Flaps – T.O. & APPR Position (15°) . . . . . 202 KIAS

Full application of rudder and aileron controls as well as maneuvers that involve angles-of-attack near the stall should be confined to speeds below maximum maneuvering speed.

Load Factor

In Flight

Flaps UP Position (0°) . . . . . -1.52 TO +3.8 GS AT 13,300 POUNDS

Flaps T.O. & APPR to LAND Position (15° to 40°). . . . . 0.0 TO +2.0 GS AT 13,300 POUNDS

These accelerations limit the angle-of bank in turns and limit the severity of pull-up maneuvers.

Landing

Flaps – T.O. & APPR to LAND Position (15° To 40°). . . . . +3.75G'S AT 12,700 POUNDS

WARNING

Avoid rapid and large alternating control inputs, especially in combination with large changes in pitch, roll, or yaw (e.g., large sideslip angles), as they may result in structural failures at any speed, including below V_A.

Pneumatics, Pressurization and Oxygen

System Summary

The bleed air system extracts engine bleed air and transfers it to various systems (e.g., air conditioning, ice and rain protection and pressurization).

The air conditioning system routes engine bleed air through an air cycle machine (ACM) for temperature adjustment, then distributes this conditioned air throughout the aircraft for cabin pressurization. Temperature controls and various valves regulate the air's temperature and distribution.

Conditioned bleed air enters the cabin through outlets in the floor and ceiling. Two pressurization system outflow valves regulate the flow of air out of the pressure vessel to maintain a comfortable cabin pressure.

Oxygen is always available to the crew and to the passengers either manually through cockpit control or automatically if cabin altitude exceeds 13,500 +/- 600 feet.

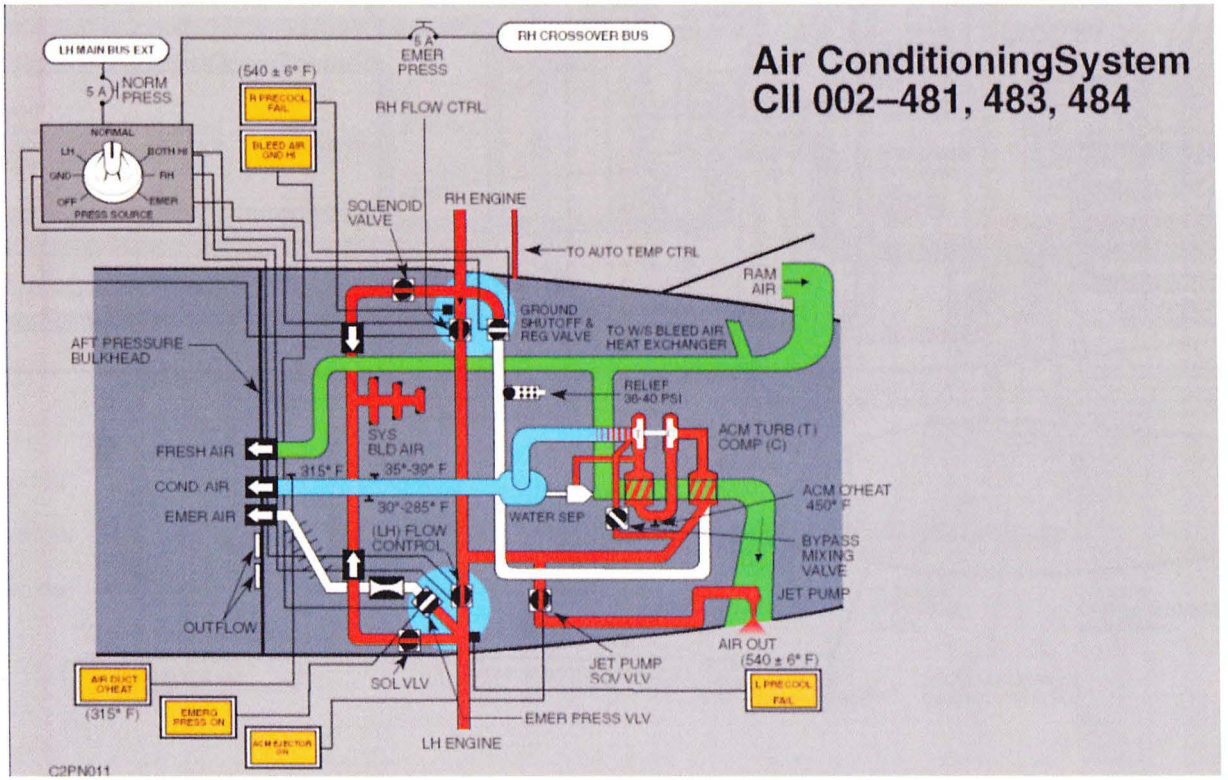


Figure 9: ***Air Conditioning System CII S/N 002 - 481, 483 and 484***

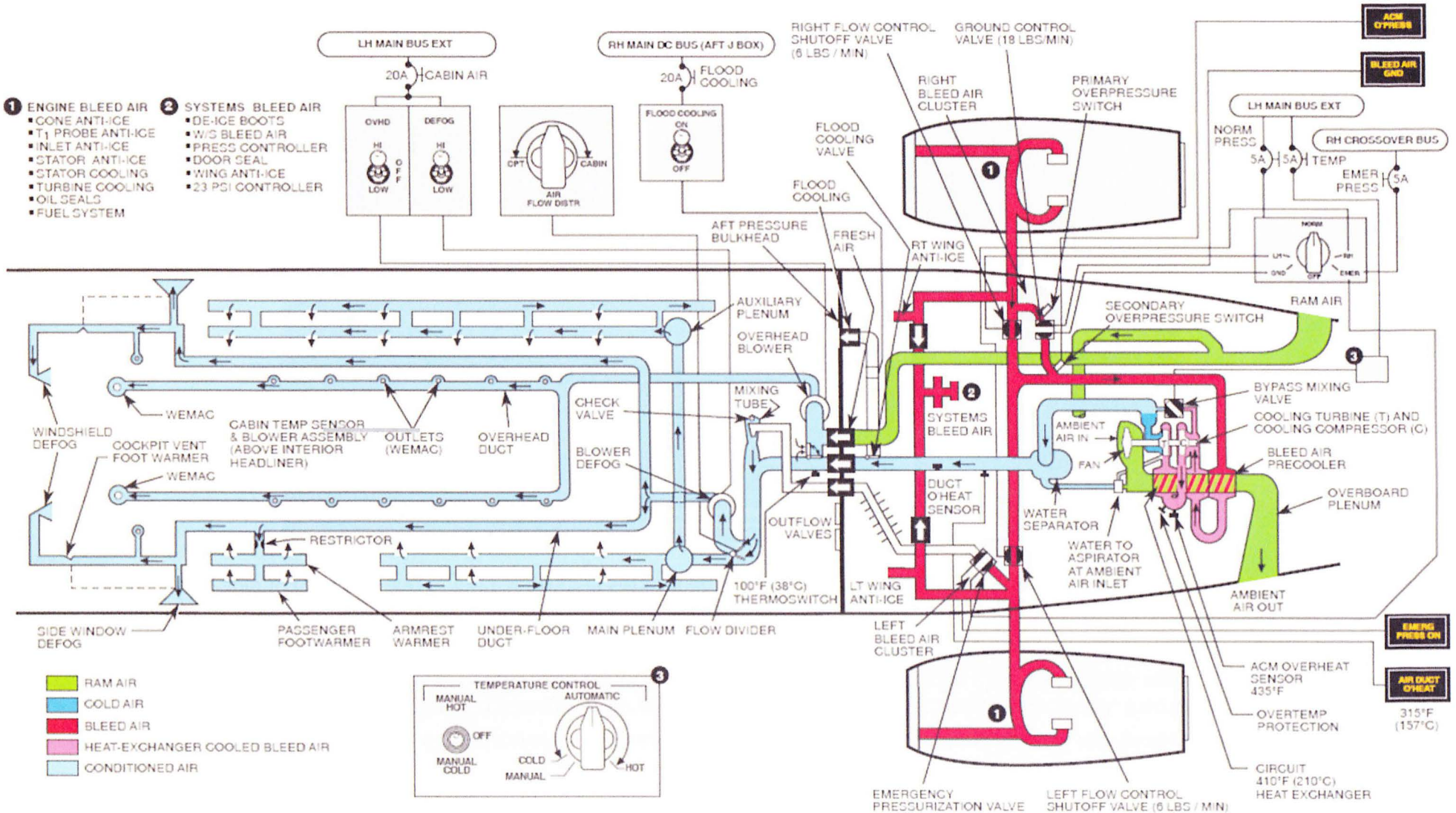


Figure 10: ***Air Conditioning System CII S/N 482 and 485 forward***

Limitations

Cabin Pressurization Limitations

Normal Cabin Pressurization Limitations . . . . . 0.0 TO 8.8 PSI, +/- 0.1 PSI DIFFERENTIAL

Cabin (OVHD) Fan

The cabin (OVHD) fan must be operated in either the HI or LOW position when the aft baggage compartment dividers are closed. If the cabin fan is OFF or inoperable, the following placard must be displayed on the fixed portion of the aft divider.

NOTE: Privacy curtain and door must be open unless toilet is occupied.

Supplemental Oxygen System

Continuous use of the supplemental oxygen system with cabin altitude above 25,000 feet with passengers or with cabin altitude above 37,000 feet, crew only, is prohibited.

Oxygen Mask

The pressure demand sweep-on oxygen mask must be properly stowed to qualify as a quick-donning oxygen mask.

Annunciators

Units 550+	Units 0001 - 549	
		BLD AIR GND – Pressurization source selector in GND position, A/C 482, 485 and subsequent. BLEED AIR GRND/HI – Pressurization source selector in GND (or BOTH HI position A/C – 0001 to 0481, 0483 and 0484.)
		ACM EJECTOR ON – On during ground operation with both throttles below 85% N_2 or with pressure applied to wheel brakes. (A/C 001 to 0436)
		CAB ALT 10000 FT – Cabin exceeds an altitude of 10,000 feet.
		EMER PRESS ON – Pressurization source selector in EMER position and/or Air conditioning (ACM) overheat.

Anti-Ice and Deice Systems

System Summary

The anti-ice system consists of bleed air heated engine inlets, bullet nose, stators, windshields (left and right), electrically heated pitot tubes, static ports and angle of attack probe (if installed), and wing leading edge segments ahead of each engine. The wing outboard of the electric elements, the horizontal stabilizer and vertical stabilizer are deiced by pneumatic boots. Windshield alcohol anti-ice is also provided as a backup system for the left windshield (approximately 10 minutes use w/full reservoir).

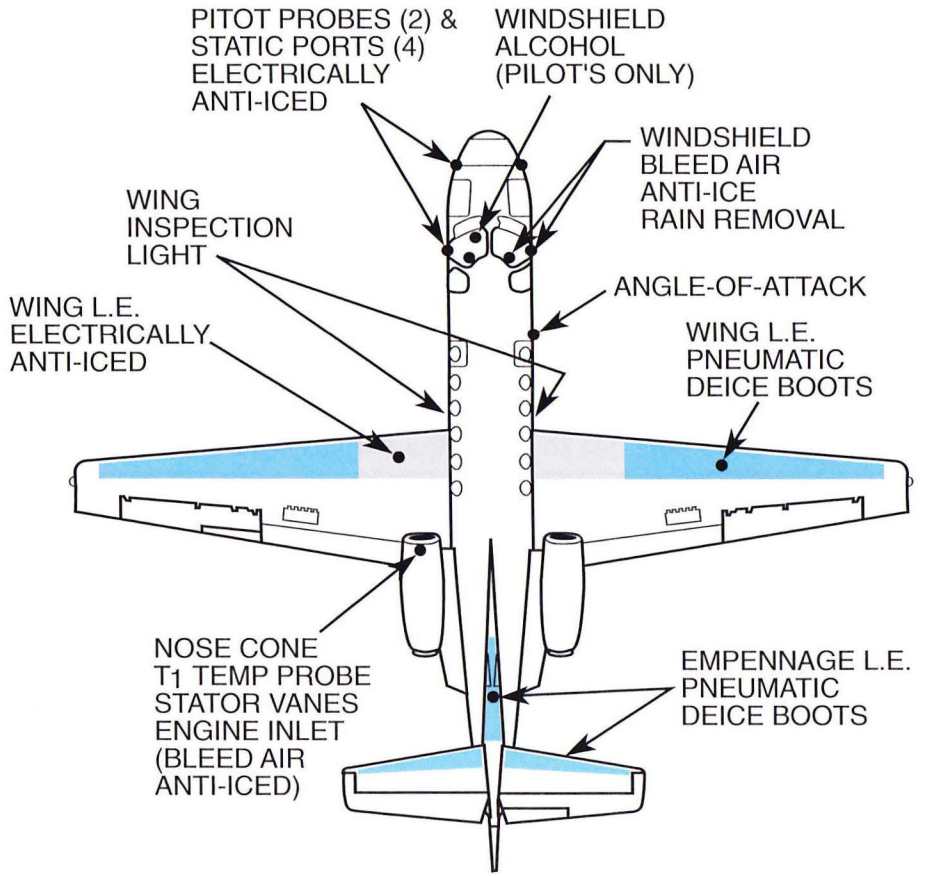


Figure 11: ***Anti-Ice and Deice Systems***

Limitations

Windshield Ice Protection Fluid

Use TT-1-735 isopropyl alcohol for windshield anti-ice.

Do not operate the de-ice boots below -40°C/ -40°F

NOTE: Takeoff is prohibited if the aircraft is contaminated by frost, ice, snow or slush as defined in the "Temporary FAA Approved Airplane Flight Manual Change", Sec. II, Page 2-11, "Frost, ice, snow and slush takeoff limitations."

WARNING
During all icing encounters maintain a minimum of 160 kias except for approach and landing.

NOTE: Do not operate the de-ice boots below -40°C / -40°F.

Annunciators

Units 550+	Units 0001 - 549	
		W/S AIR O'HEAT – With the W/S BLEED switch ON, indicates bleed air to the windshield is too hot. With switch OFF it indicates windshield bleed air shutoff has failed to the open position.
		ENG ANTI-ICE or ENG ICE FAIL – Possible causes: a. Engine inlet cowl anti-ice valve does not open or bleed air flow is insufficient to maintain a temperature above 104°C. b. Engine stator anti-ice valve does not open. c. Inboard wing leading edge temperature is below 15°C/60°F. d. Any one of the wing leading edge heating elements is inoperative. e. During a five-second delay after actuation or until inlet temperature reaches 104°C with over 60% turbine RPM. f. Temperature controller has failed.
		P/S HTR OFF – Pitot heat switch is off or switch is on and at least one heating element is inoperative.
		**SURF DEICE** – Illuminates twice during the 12-second surface deice boot cycle to indicate proper inflation pressure, first for the tail assembly, then for the wings. Tail boot inflation cannot be checked visually from the cockpit.

Cessna Citation C-II Exam

1. What is the Maximum Design Zero Fuel Weight?
   a. 12,300 lb.
   b. 11,830 lb.
   c. 10,200 lb.
   d. 9,500 lb.
2. What is the Maximum Tailwind Component for takeoff?
   a. 15 KT
   b. 20 KT
   c. 10 KT
   d. No limit
3. What is the Maximum Water/Slush on Runway?
   a. .4 inches
   b. .5 inches
   c. .3 inches
   d. .2 inches
4. What is the Maximum Takeoff Weight?
   a. 14,500 lb.
   b. 14,830 lb.
   c. 13,500 lb.
   d. 13,300 lb.
5. What is the Generator Starting Limitation?
   a. Three starts in 30 minutes
   b. Three starts per hour
   c. Three starts per 30 minutes with 30 second rest
   d. Three starts per 30 minutes with 90 second rest
6. What is the Maximum Operating Altitude?
   a. 35,000 ft.
   b. 37,000 ft.
   c. 43,000 ft.
   d. 45,000 ft.
7. What is the Maximum Speed that the Landing Gear can be Retracted?
   a. 176 KT
   b. 180 KT
   c. 192 KT
   d. 204 KT
8. What is the Maximum Gear Extension Speed?
   a. 176 KT
   b. 180 KT
   c. 192 KT
   d. 204 KT
9. What is the Minimum Operating Speed (V_{MCA})?
   a. 77 KIAS
   b. 76 KIAS
   c. 79 KIAS
   d. 81 KIAS
10. What is the Maximum Amp Limit for the Generator above FL350 (Unit #296 and on or with SB-550-54-04)?
    a. 400 Amps
    b. 425 Amps
    c. 325 Amps
    d. 225 Amps

Cessna Citation C-II Exam (continued)

11. How many Pounds of Static Thrust can the PW15D-4 Turbofan Engine produce?
    a. 2,500 lb.
    b. 2,900 lb.
    c. 3,040 lb.
    d. 3,500 lb.
12. What is the Maximum Engine ITT during Takeoff?
    a. 700°C
    b. 740°C
    c. 720°C
    d. No limit
13. At what Pressure will the Annunciator OIL PRESSURE WARNing light illuminate?
    a. 60 PSI
    b. 55 PSI
    c. 45 PSI
    d. 35 PSI
14. At what Temperature should the ENGINE FIRE PUSH illuminate?
    a. 480°F
    b. 490°F
    c. 500°F
    d. 550°F
15. When using the Thrust Reversers, by what Speed must the Power be Reduced to Idle Reverse?
    a. 60 KIAS
    b. 65 KIAS
    c. 70 KIAS
    d. 80 KIAS
16. How many Gallons of Fuel can be stored in each Wing?
    a. 371 gallons
    b. 431 gallons
    c. 441 gallons
    d. 471 gallons
17. What is the Maximum Asymmetrical Fuel Differential in pounds?
    a. 600 pounds
    b. 400 pounds
    c. 300 pounds
    d. 200 pounds
18. When the FUEL LOW LEVEL illuminates, what is the Approximate Amount of Fuel Remaining?
    a. 400 gallons
    b. 325 gallons
    c. 185 gallons
    d. 169 gallons
19. What is the Minimum Airspeed for the C-II in Icing Encounters?
    a. 180 KIAS
    b. 170 KIAS
    c. 160 KIAS
    d. 150 KIAS
20. What is the Temperature which the De-ice Boots Shall Not be Operated?
    a. -45°C/-45°F
    b. -35°C/-40°F
    c. -40°C/-40°F
    d. -40°C/-35°F