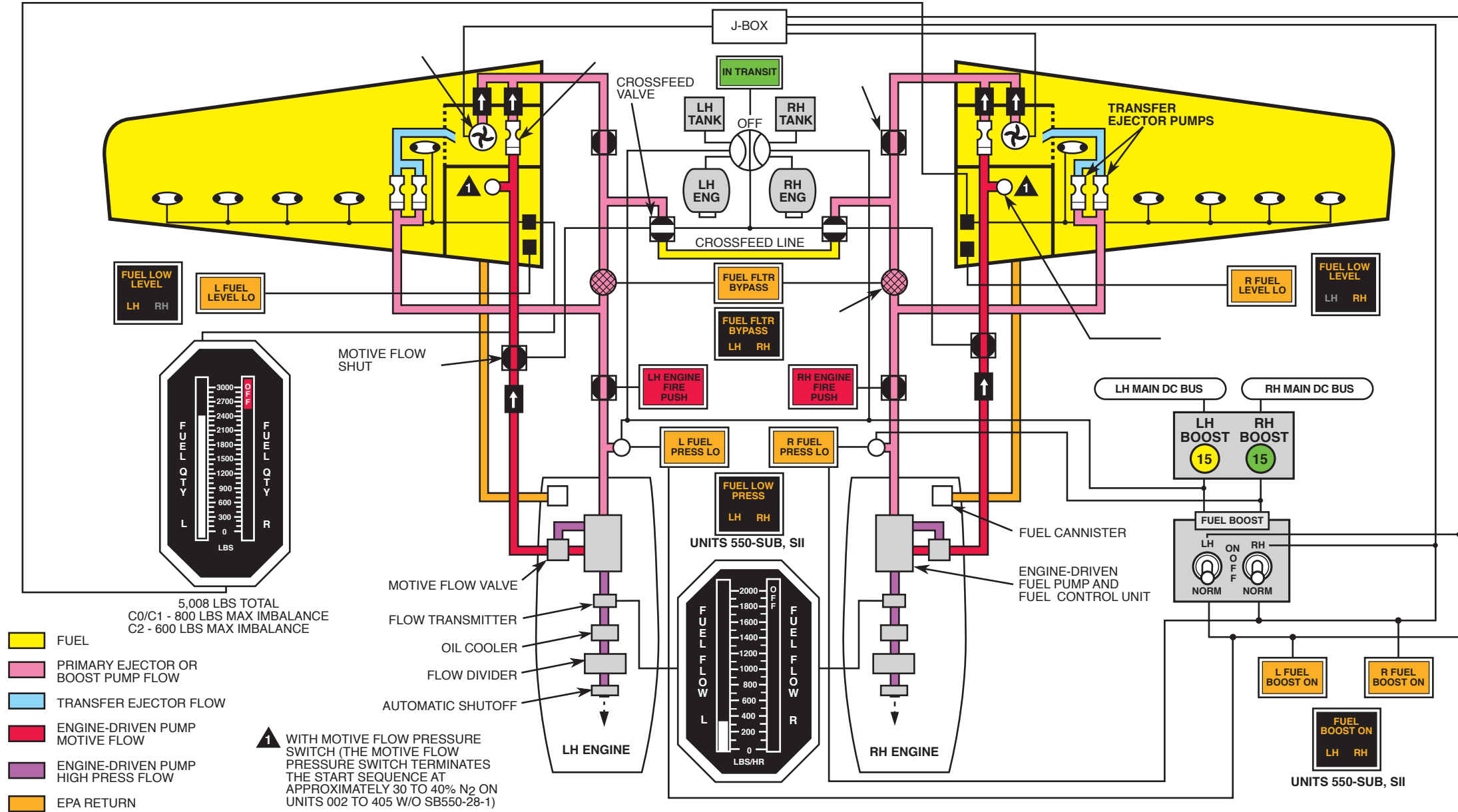


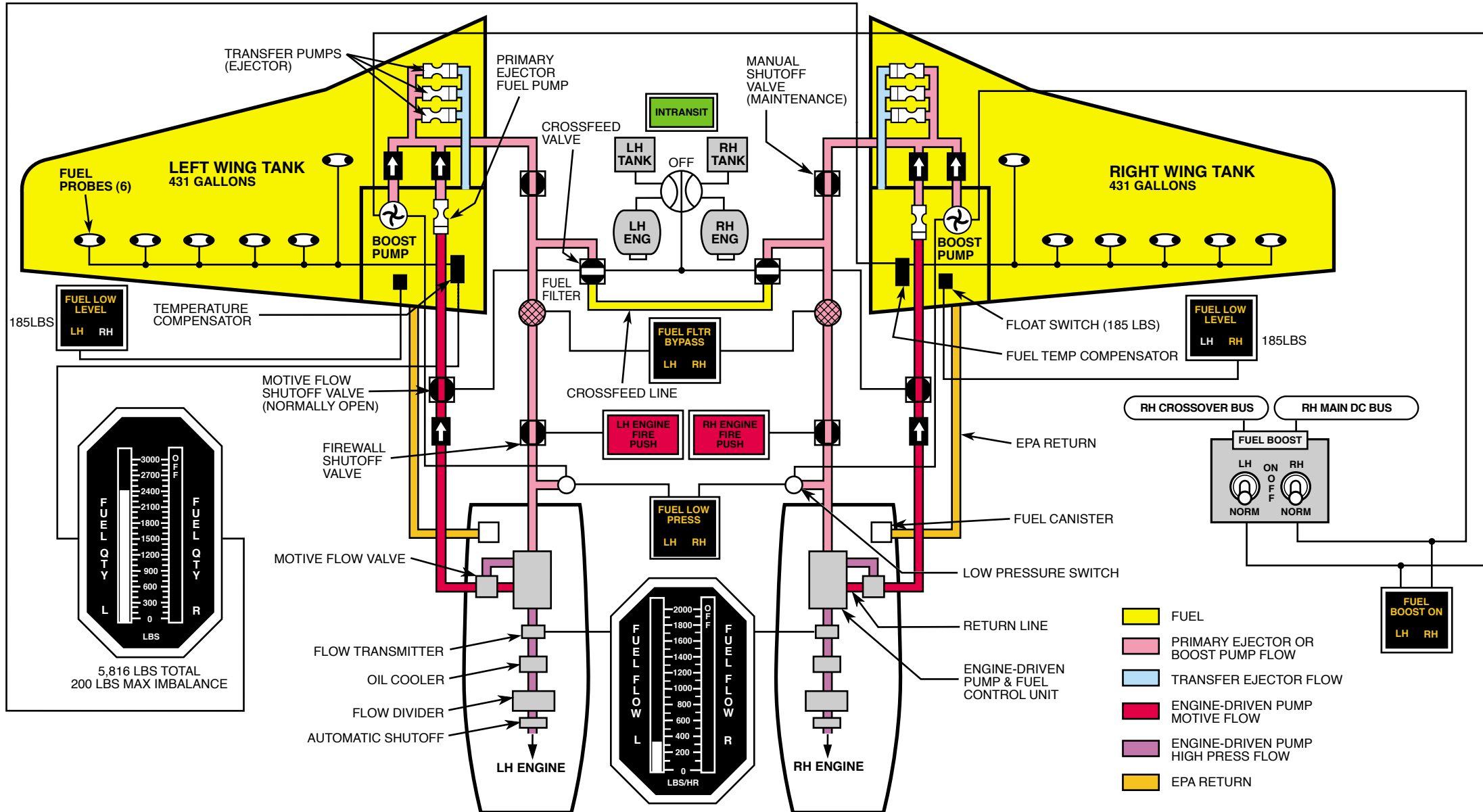
Fuel System

Citation; CI; CII; CII-627



Fuel System

Citation SII



Fuel Storage

Each wing tank extends from the wing root to the wing tip. The tanks include all internal wing area forward of the rear spar except for the inboard leading edge and the area above the wheel well. Gaps in the forward wing spar and ribs allow fuel to flow inboard. One-way flapper valves restrict fuel flow to prevent sudden weight and balance shifts during maneuvering. An overwing filler cap near each wing tip allows gravity fueling of the tanks. Total wing tank usable capacity varies with aircraft model (see **Table 4F-1**).

Each tank's venting system consists of an underwing air scoop, float valve, check valves, and a vent line that extends from the wing tip to the inboard tank area. During maneuvering the float valve closes to prevent fuel loss and the check valves open to vent the tank. **Units 001 to 213 with SB 21-9, units 425 and subsequent, Citation II, and Citation SII aircraft:** each wing tank has a vent surge tank that captures fuel vented during fuel expansion. After the fuel tank level drops, fuel siphons from the surge tank back into the wing tank.

Aircraft	Usable U.S. Gallons		Total Pounds ¹
	Each Tank	Total	
Citation 001 to 040 w/o SB 21-9	268	536	3618
Citation 041 to 213 2/o SB 21-9	272	544	3672
Citation/Citation I 214 and sub.	282	564	3806
Citation II	371	742	5008
Citation SII	431	862	5818

¹ 6.75 lbs/gallon

Table 4F-1; Fuel Storage

An internal sump area in each wing tank's inboard section contains an electric boost pump, primary ejector pump, and quick drains used for water and sediment removal. The **Citation and Citation I** have five drains; the **Citation II units 2 to 59 and SII** have six drains, and the **Citation II units 60 and subsequent** have four drains. Each wing tank also has two or three (**SII**) transfer pumps that move fuel from the main tank area into the sump area.

Fuel Indicating

Capacitance type fuel probes in the wing tanks drive the vertical tape FUEL QTY indicator. The system operates on 28V from the DC electrical system. The **Citation and Citation I** have four fuel probes per wing; the **Citation II** has five probes per wing, and the **Citation SII** has six probes per wing.

A float switch in each wing tank illuminates its respective FUEL LEVEL LO or FUEL LOW LEVEL (**SII**) annunciator when 170 (**Citation/Citation I**), 169 (**Citation II**) or 185 (**Citation SII**) lbs remain in the associated tank.

Fuel Distribution

During engine start after the start button is pressed, the electric boost pump supplies positive fuel feed to the engine-driven pump. Fuel flows from the sump area through a check valve, manual shutoff valve, fuel filter, and firewall shutoff valve. If the fuel filter begins clogging, a differential pressure switch closes at 3.75 PSID to illuminate the FUEL FILT BYPASS annunciator. At 4.75 PSID, the fuel filter bypass valve opens to route fuel around the filter.

After the engine starts, the electric boost pump de-energizes; the primary ejector pump supplies fuel from the sump area to the engine-driven pump. With the engine-driven pump operating, the primary ejector pump receives motive flow fuel through the motive flow valve and open motive flow shutoff valve.

On **Citation/Citation I units 001 to 660 without SB 28-7 and Citation II units 2 to 405 without SB 28-1**, a motive flow pressure switch in the primary ejector pump supply line controls electric boost pump operation. On **Citation/Citation I units 001 to 660 with SB 28-7, Citation I units 661 and subsequent, Citation II units 2 to 405 with SB 28-1, Citation II units 406 and subsequent, and Citation SII aircraft**, the generator control unit (GCU) controls electric boost pump operation during engine start.

If fuel pressure in the supply line drops below approximately 5 PSI, a pressure switch illuminates the FUEL PRESS LO or LOW FUEL PRESS annunciator. The electric boost pump then energizes to supply fuel from the sump area to the engine-driven fuel pump. If the annunciator remains illuminated then the electric boost pump is inoperative. Check that the fuel boost pump CB is in and the fuel boost pump switch is on.

Placing the boost pump switch in ON, regardless of throttle lever position and fuel pressure, supplies power to the electric boost pump from the Left and Right Main DC buses. On the **SII aircraft**, the Right Main DC bus is the only power source. During boost pump operation, the respective FUEL BOOST ON annunciator illuminates.

Placing the crossfeed switch in LH TANK or RH TANK cross feeds fuel from one tank to both engines. The selected tank's electric boost pump operates, both crossfeed valves open, and fuel flows to both engines from the selected tank. After three seconds of operation, the opposite motive flow shutoff valve closes.

The green INTRANSIT light illuminates during crossfeed valve operation and when the crossfeed valves position does not agree with crossfeed switch position.

Defueling

The fuel tanks can be defueled by suction, force-draining, or transfer (crossfeed). The suction method draws fuel from the tank through the overwing filler cap. Force-draining uses the electric boost pump to draw fuel and pump it under pressure through the disconnected fuel feed line at the engine's fuel control unit. Finally, the transfer method uses the crossfeed valves to drain fuel from one tank and move it to the opposite tank.

Fuel System

Power Source	Motive flow ejector pump Motive flow fuel
Distribution	Crossfeed manifold Fuel transfer motive flow Motive flow manifold Wing tank to respective engine (L/R) via engine manifold
Control	ENGINE START (L/R) switches ENG FIRE switchlights (L/R) FUEL BOOST switches (L/R) LH TANK/RH TANK crossfeed selector STARTER DISENGAGE switches (L/R) Throttles Fuel control unit (fuel cutoff)
Monitor	Annunciators FIREWALL SHUTOFF (L/R) FUEL BOOST ON (L/R) FUEL FILTER BYPASS (L/R) FUEL LOW LEVEL (L/R) FUEL LOW PRESS (L/R) Crossfeed INTRANSIT light FUEL FLOW gage FUEL QTY gage
Protection	Circuit breakers Prist Fuel filters Fuel firewall shutoff valves Motive flow shutoff valve .07 emergency cutoff

