

## Chapter 7 PNEUMATIC SYSTEM

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**General**

1. Compressed air is bled from the engine compressors to supply the following:-

- (1) Fuel tanks pressurization
- (2) Wing tanks pressurization (Mod 60 or 185)
- (3) Fuel system recuperators
- (4) Fuel/no-air valves
- (5) General services hydraulic system reservoir pressurization
- ◀ (6) Fuel jettison system purging (Mod 880 and 1091) ▶

**Fuel tanks pressurization**

2. The fuel tanks are pressurized to ensure an adequate supply of fuel to the engines and to prevent the fuel boiling at high altitudes. The tanks remain pressurized while either engine is running, air pressure from the engine being reduced to 6 lb/in<sup>2</sup>. Detailed information on this system is in Sect 3, Chap. 13 and in Cover 3, Sect. 4, Chap. 2.

**Wing tanks pressurization**

3. To extend the normal flight range of the aircraft, two slipper-type fuel tanks can be fitted to the underside of the inner planes on aircraft with Mod 60 or 185

incorporated. Fuel from these tanks is transferred into the fuselage tanks by air pressure tapped from the engine air bleed system, the air supply to the tanks being controlled by a single on-off switch on the observer's port console. The supply is duplicated to ensure pressurization (18 to 20 lb/in<sup>2</sup>) when only one engine is running. More detailed information on this subject is in Sect. 3, Chap. 13 and Cover 3, Sect. 4, Chap. 2.

**Supply to recuperators**

4. Two recuperators are fitted to the aircraft to automatically maintain the fuel supply during inverted flight or negative g conditions. The compressed air supply is tapped from the fuel tanks pressurization supply before the pressure reducing valves. As this air is at the high engine delivery pressure it is reduced to 17 lb/in<sup>2</sup> before reaching the recuperators. Detailed information is in Sect. 3, Chap. 13 and in Cover 3, Sect. 4, Chap. 2.

**Supply to fuel/no-air valves**

5. Two fuel/no-air valves are located in the base of each master tank, their operation being controlled by float switches fitted in the tanks. When the level of fuel in the tank is insufficient to support the float, a contact is made and a solenoid energized to allow air pressure to close

◀ the valve. On post-Mod 930 aircraft, an alternative means of controlling the valves is provided by four override switches on the pilot's starboard console. Further details are in Sect. 3, Chap. 13 and in Cover 3, Sect. 4, Chap. 2.

**Hydraulic system reservoir pressurization**

6. The general services hydraulic system reservoir is pressurized by air tapped from the supply to the fuel tanks pressurization system. Two separate tappings are provided, one from each engine, ensuring a supply when only one engine is running. Before entering the reservoir the air passes through a reducing valve which reduces it to an operating pressure of 15 to 20 lb/in<sup>2</sup>. Detailed information is in Sect. 3, Chap. 6 and Chap. 13.

**◀ Fuel jettison system purging ▶**

7. On post-Mod 1091 aircraft, air is tapped from the fuel tanks pressurization supply pipe in the bomb bay and fed into the fuel jettison system piping downstream of the starboard aft jettison valve. This air, which is continually exhausting to atmosphere at the fuel jettison outlet, serves to purge the jettison pipelines of fuel after completion of a jettison operation. Further details are in Chap. 13 in this Cover and in Cover 3, Sect. 4, Chap. 2. ▶

**RESTRICTED**