**AIRCRAFT FUEL SYSTEM INTRODUCTION**

The A318, A319, and A320 share a common fuel system design. The fuel tanks are integrated into the center fuselage area and the wings. The center tank is part of the center wing box. The wing tanks are divided into inner and outer cells. To reduce the structural load on the wings, the fuel in the outer cells is not used until the fuel load in the inner cells decreases to a low level. Two fuel pumps are installed in the center tank, two fuel pumps are installed in each wing tank inner cell and one fuel pump is installed for the APU. Fuel is supplied to the engines from the center tank first. After the center tank is empty, fuel is supplied from the wing inner cells. There is no direct supply from the outer cells to the engines. Two intercell transfer valves in each wing let the fuel transfer from the outer cells to the inner cells when the low level is reached. Two engine Low Pressure (LP) valves are installed to supply or cut off fuel to the engines. The LP valve is closed when the related engine is shut down or when the engine fire pushbutton is released. A cross feed valve is installed to connect or isolate the left- and right-hand sides. It enables engine to be fed from any available fuel pump. On the ground, the cross-feed valve enables fuel to be transferred from tank to tank. The valve is closed for normal operation. The fuel system also feeds the APU directly from the left-hand side. The APU LP valve is installed to supply or cut off fuel to the APU. It closes when the APU is shut down or when the APU FIRE pushbutton is released out.

**A321**: The A321 fuel tanks are integrated into the center fuselage area and the wings. Like the A318/A319/A320, the center tank is part of the center wing box but unlike the A318/A319/A320, the wing tanks are not divided. The tanks are simply called left- and right-wing tanks. Two fuel pumps are installed in each wing tank. One fuel pump is installed for the APU. Fuel is supplied to the engines from the wing tanks only. As the fuel level in the wing decreases, the center tank fuel is transferred to the wing tanks until the center tank is empty. Fuel transfer from the center tank to the wing tanks is controlled by transfer valves. The transfer valves supply pressure for two jet pumps. These pumps are located in the center tank and transfer the fuel from the center to the wings. Two engine LP valves are installed to supply or cut off fuel to the engines. The LP valve is closed when the related engine is shut down or when the engine fire pushbutton is released. A cross feed valve is installed to connect or isolate the left- and right-hand sides. It enables engine to be fed from any available fuel pump. On the ground, the cross feed valve enables fuel to be transferred from tank to tank. The valve is closed for normal operation. The fuel system also feeds the APU directly from the left-hand side. The APU LP valve is installed to supply or cut off fuel to the APU. It closes when the APU is shut down or when the APU FIRE pushbutton is released out.