Topic 2 – Aircraft Refueling Components Overview

Objectives

This course aims to familiarize fueling personnel with key elements of aircraft fuel system, building on Level 1 training that will have already been provided by ITP.

By the end of this lesson fueling personnel will be able to:

- Identify aircraft fuel system components required to initiate and control automatic and manual refuels

Key topics

Identifying relevant aircraft parts and learning about them

- Nose landing gear
- Main landing gear
- Main landing gear door
- Fuselage
- Flight deck
- Leading edge of wing
- Leading edge slats
- Trailing edge flaps
- Trailing edge of wing
- Horizontal stabilizer
- Vertical stabilizer
- Engine nacelle

Getting fuel into the aircraft

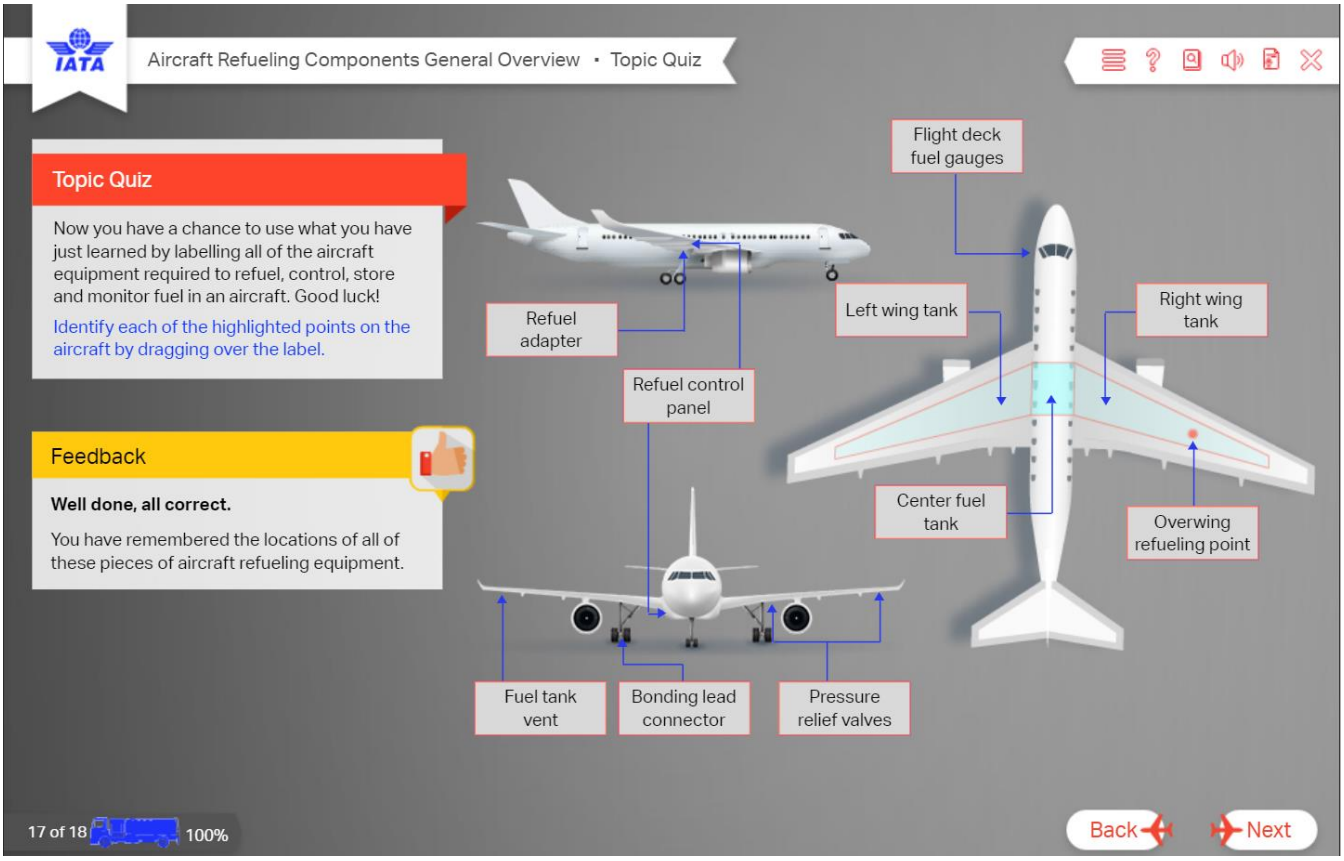
- Purpose of pressurized refueling system
- How the refueling nozzle is connected to the aircraft refueling adapter
- Importance of refuelers checking the adapter and its lugs to make sure they are clean and not damaged
- The importance of replacing the adapter cap on the adapter at the end of the refuel process
- Over-wing gravity refueling points as a back-up on some aircrafts
- Hazards of a pressurized refueling system, such as static electricity build up
- Importance of bonding to approved bonding points

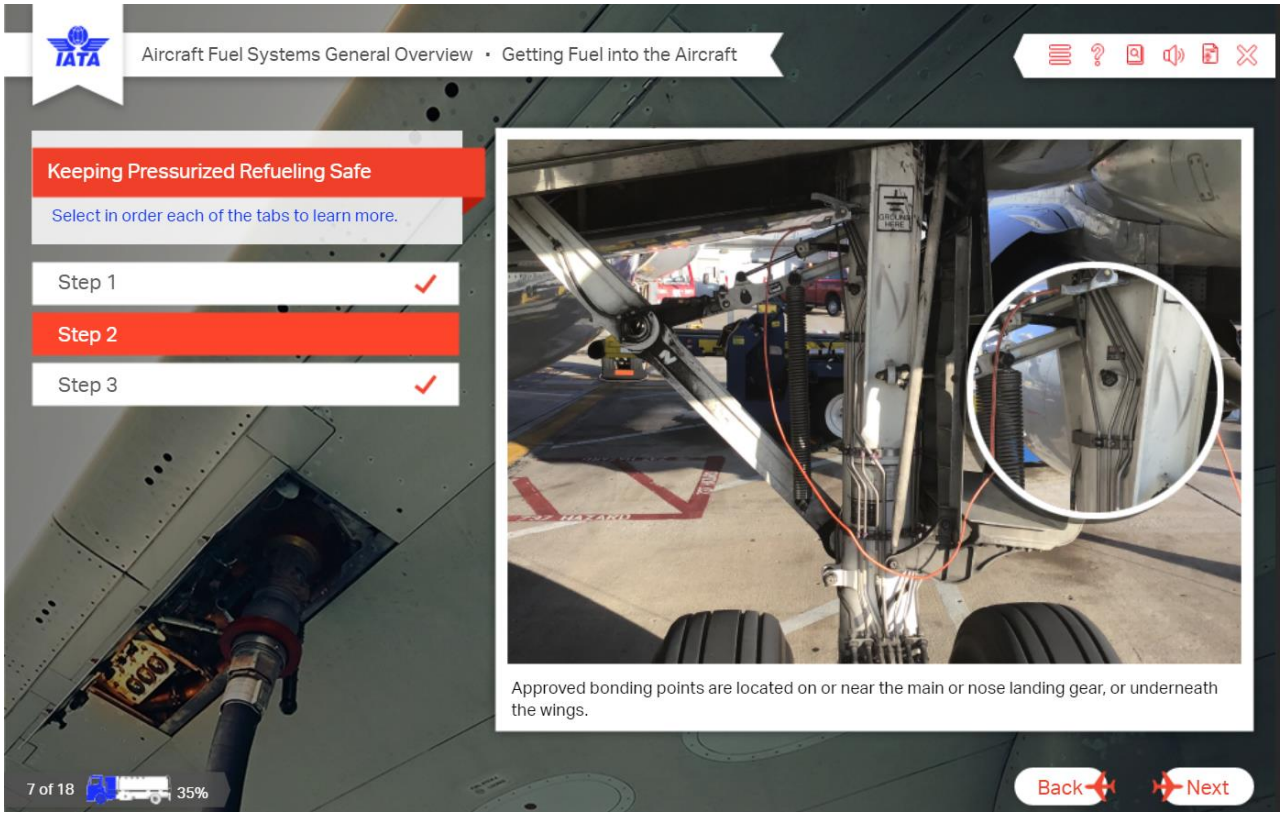
Storing fuel in the aircraft

- Purpose of vent systems in aircraft fuel tanks
- Location of aircraft fuel system vents
- Refueling safety zone locations around fuel system vents
- Activation of pressure relief valves or bursting disc
  - Progress Quiz

Controlling the flow of fuel

- The order in which aircraft fuel tanks are filled during a refuel
- How the flow of fuel is controlled and distributed into the aircraft fuel tanks to make sure no imbalance occurs
- Overview of the refuel control panel that allows for control and monitoring of the refuel process on the aircraft.
  - Topic Quiz




Aircraft Fuel Systems General Overview • Getting Fuel into the Aircraft
Keeping Pressurized Refueling Safe
Select in order each of the tabs to learn more.
Step 1
Step 2
Step 3
Approved bonding points are located on or near the main or nose landing gear, or underneath the wings.
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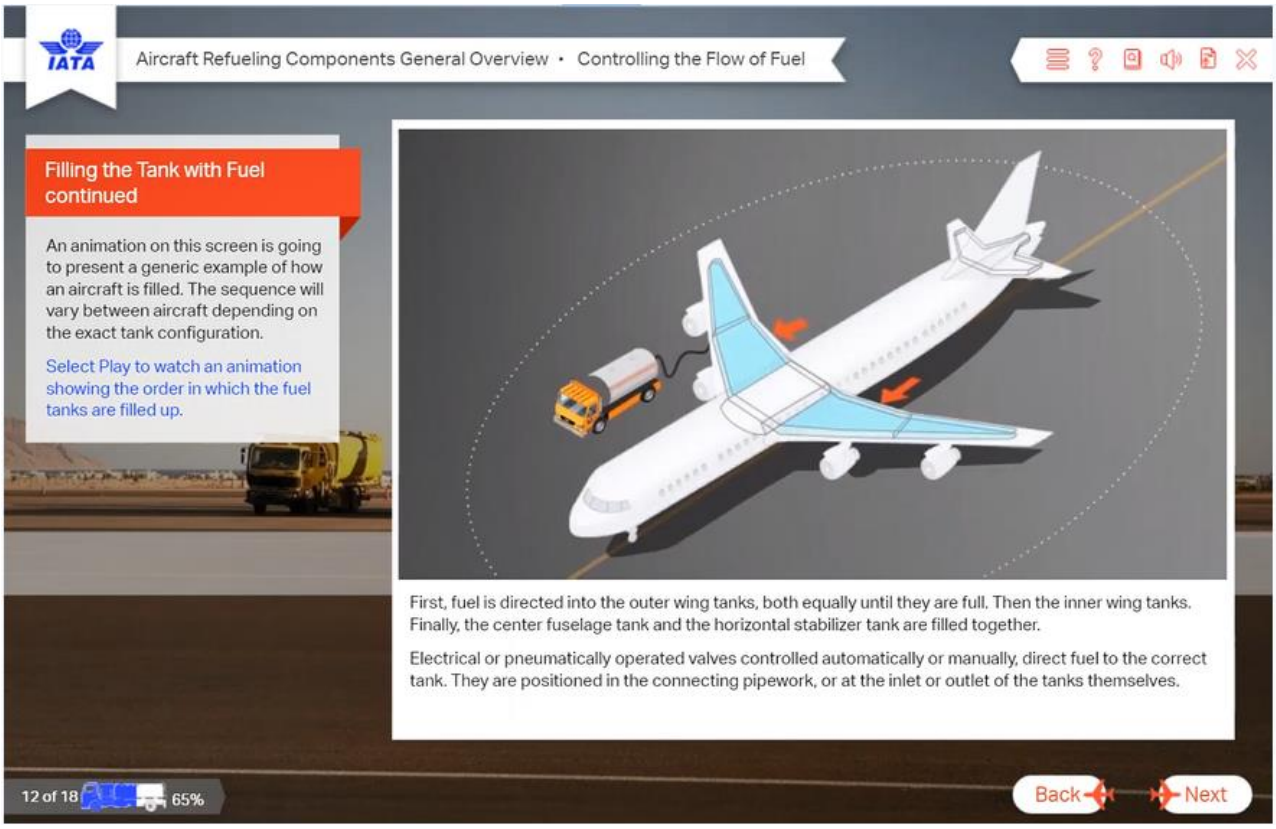
Aircraft Refueling Components General Overview • Controlling the Flow of Fuel
Filling the Tank with Fuel continued
An animation on this screen is going to present a generic example of how an aircraft is filled. The sequence will vary between aircraft depending on the exact tank configuration.
Select Play to watch an animation showing the order in which the fuel tanks are filled up.
First, fuel is directed into the outer wing tanks, both equally until they are full. Then the inner wing tanks. Finally, the center fuselage tank and the horizontal stabilizer tank are filled together.
Electrical or pneumatically operated valves controlled automatically or manually, direct fuel to the correct tank. They are positioned in the connecting pipework, or at the inlet or outlet of the tanks themselves.
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