English for Mechanics

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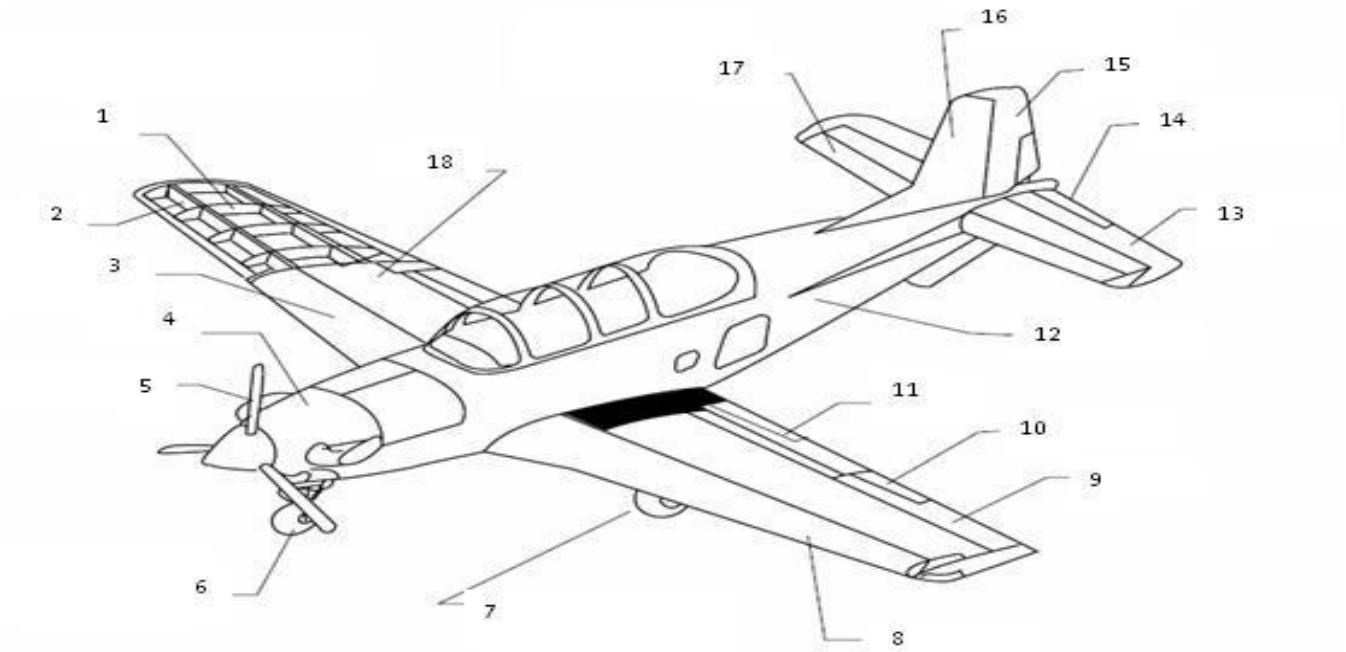
Vocabulary



Rip	
Spar	
Right wing	
Cowl	
Propeller	
Nose gear	
Main landing gear	
Left wing	
Aileron	
Trim tabs	
Flaps	
Fuselage	
Elevator	
Trim tabs	
Rudder	
Vertical fin	
Horizontal stabilizer	
Skin	

Chose the correct answer :

1- The nose wheel is situated at

a) the middle
b) the front
c) the side
d) the back of the airplane

2- The spar is a part of the aircraft structure located in the

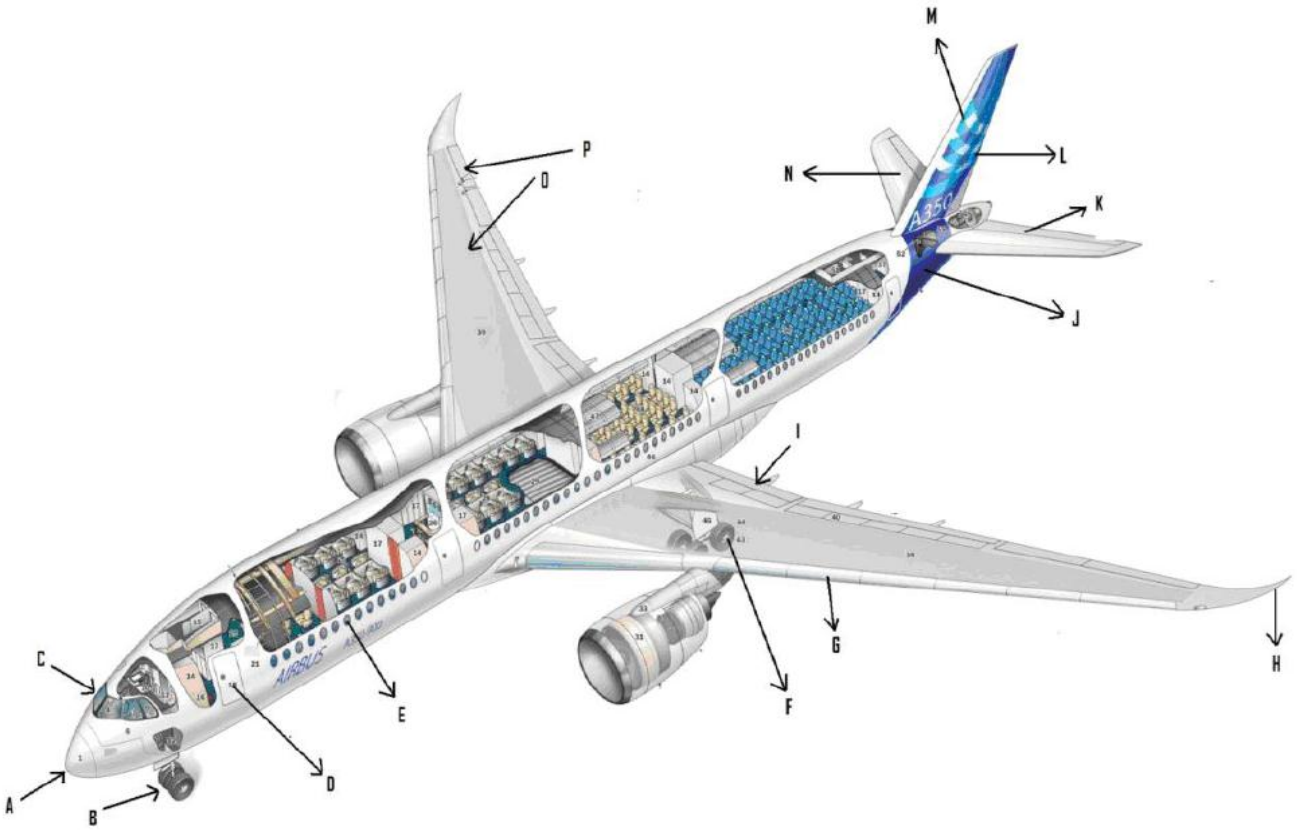
a) fuselage
b) tail
c) engine
d) wing

3- The aileron's will make the aircraft

a) pitch up
b) roll
c) descend
d) increase speed

4- The pilot sits in

a) the wing
b) the fuselage
c) the tail
d) the cock pit



A : Nose, B : Nose landing gear, C : Windshield, D : Door, E : Window, F : Main landing gear, G : Leading edge,

H : Wing tip, I : Flaps, J: Empennage, K : Elevator, L : Rudder, M : Vertical stabilizer, N : Horizontal stabilizer,

O : Wing, P : Aileron.

Rudder	**Controls the yaw movement of the aircraft**
Flaps	**Add camber to the wing surface to create more lift**
Leading edge	**The front section of a wing**
Engine	**Powers the airplane**
Ailerons	**Control the bank of an aircraft**
Horizontal stabilizer	**This structure contains the elevators**
Nose	**The front section of the aircraft. It is forward of the cockpit**
Wingtip	**The extreme outward points of the wing**

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Empennage	**The aft structure of the aircraft which contains the vertical and horizontal stabilizer**
Elevator	**Controls an aircraft's pitch**
Fuselage	**The main body of an aircraft**
Door	**Where passengers and crew enter and exit an aircraft**
Elevator	**The principal lifting surface of an airplane**
Windshield	**The area where pilots see out of the cockpit**
Vertical stabilizer	**This structure contains the rudder**

Conversation :

Person 1: What are the major parts of an airplane and what are their applications?

Person 2: The main parts are as follows, A) engine is the power plant B) wings provide lift C) fuselage is the main body and allows passengers/cargo D) tail plane provide aerodynamic stability

Person 1: Where is the fuel kept?

Person 2: Airplanes keep the majority of the fuel the wings and have an extra fuel tank in the fuselage between the wings, fuel can be transferred between the different tanks using cross-feed system.

Person 1: Why do commercial airplanes fly so high?

Person 2: Airplanes fly at high altitudes to reduce the amount of fuel used, and to fly above most of the turbulent weather.

Person 1: How does the landing gear deploy and retract?

Person 2: A hydraulic fluid system is used, but if this system fails a mechanical crank can be used to open the landing gear doors and allow the landing gear to fall under its own weight and gravity into the down and locked position.

1- Name one reason why airplanes fly at high altitudes.

a) To fly above the weather
b) To reduce amount of fuel used
c) Both of the above
d) None of the above

2- A mechanical .....can be used if the landing gear hydraulic fluid system fails

3- Name two main parts of an airplane.

a) Fuselage and wings
b) Tail plane and engine
c) Both of the above.
d) None of the above.

4- The .....system can be used to transfer fuel between different fuel tanks

5- The majority of the fuel is kept in the airplanes wings.

1. **False**
2. **True**

Grammar

Put the verbs from the box into the correct form in the sentences below.

Jack	Torque	being	get	perform	changing	increase	matching	completing	functioning

1. **The mechanic is about to ..... the broken aileron hinge bracket**

3. **Put the verbs from the box into the correct form in the sentences below.**
4. **The hydraulic fluid pressure is too low, it needs .....**
5. **The bend profile of the sheet metal skin needs to .....the original structure.**
6. **The mechanic is .....some more nuts and bolts.**
7. **The aircraft will need ..... up for the C check.**
8. **..... checks are carried out on aircraft.**
9. **It is important to ..... bolts to the correct value**
10. **The mechanics are ..... a routine 'A' check of the aircraft**
11. **The mechanics are ..... a routine 'A' check of the aircraft**
12. **The hydraulic system will need a ..... purge**
13. **The aircraft will have to ..... de-iced prior to takeoff**

<u>Check the Incorrect form of the verb in the below sentence.</u>

1- Aircraft that fly/flying over sea water are more likely to have corrosion problems.

a) fly
b) flying

2- The stringer has some damage/damaging and it needs to be repaired.

a) damage
b) damaging

3-The bolt is too long, it needs take/taking out and replacing.

a) take
b) taking

4- The fuel filter needs changing/change.

a) changing
b) change

5-We need to replacing/replace the turnbuckle before the aircraft flies.

a) replace
b) replacing

6- We need to drill/drilling a hole in the skin

a) drilling
b) drill

7- The rivet tail is too long, it still needs reacting/react

a) react
b) reacting

Reading

It is important that all pilots thoroughly know the various parts of an aircraft. For example, the wings generate most of the lift to hold the plane in the air. To generate lift, the airplane must be pushed through the air. The air resists the motion in the form of aerodynamic drag. Modern airliners

use winglets on the tips of the wings to reduce drag. The turbine engines, which are located beneath the wings, provide the thrust to overcome drag and push the airplane forward through the air. Smaller, low-speed airplanes use propellers for the propulsion system instead of turbine engines.

To control and maneuver the aircraft, smaller wings are located at the tail of the plane. The tail usually has a fixed horizontal piece, called the horizontal stabilizer, and a fixed vertical piece, called the vertical stabilizer. The stabilizers' job is to provide stability for the aircraft, to keep it flying straight. The vertical stabilizer keeps the nose of the plane from swinging from side to side, which is called yaw. The horizontal stabilizer prevents an up-and-down motion of the nose, which is called pitch.

At the rear of the wings and stabilizers are small moving sections that are attached to the fixed sections by hinges. In the figure, these moving sections are colored brown. Changing the rear portion of a wing will change the amount of force that the wing produces. The ability to change forces gives us a means of controlling and maneuvering the airplane. The hinged part of the vertical stabilizer is called the rudder; it is used to deflect the tail to the left and right as viewed from the front of the fuselage. The hinged part of the horizontal stabilizer is called the elevator; it is used to deflect the tail up and down. The outboard hinged part of the wing is called the aileron; it is used to roll the wings from side to side. Most airliners can also be rolled from side to side by using the spoilers. Spoilers are small plates that are used to disrupt the flow over the wing and to change the amount of force by decreasing the lift when the spoiler is deployed.

The wings have additional hinged, rear sections near the body that are called flaps. Flaps are deployed downward on takeoff and landing to increase the amount of force produced by the wing. On some aircraft, the front part of the wing will also deflect. Slats are used at takeoff and

landing to produce additional force. The spoilers are also used during landing to slow the plane down and to counteract the flaps when the aircraft is on the ground. The next time you fly on an airplane, notice how the wing shape changes during takeoff and landing.
The fuselage or body of the airplane, holds all the pieces together. The pilots sit in the cockpit at the front of the fuselage. Passengers and cargo are carried in the rear of the fuselage. Some aircraft carry fuel in the fuselage; others carry the fuel in the wings.

Answer the following questions about the article:

1. The wings generate most of the ____ to hold the plane in the air.

a. drag

b. thrust

c. lift

d. None of the above.

2. The air resists the motion in the form of _____.

a. aerodynamic thrust

b. aerodynamic drag

c. aerodynamic lift

d. None of the above

3. Modern airliners use _____ on the tips of the wings to reduce drag.

a. winglets

b. wingtips

c. flaps

d. ailerons

4. True or False: The tail usually has a fixed horizontal piece, called the horizontal stabilizer, and a fixed vertical piece, called the rudder.

b. False

a. True

5. Flaps are deployed _____on takeoff and landing to increase the amount of force produced by the wing.

a. outward

b. inward

c. upward

d. downward

6. Where are slats located?

a. The back of the wing

b. The front part of the wing

c. On the vertical stabilizer

d. On the horizontal stabilizer