EXPLAINATION OF MAIN PARTS OF AN AIRCRAFT

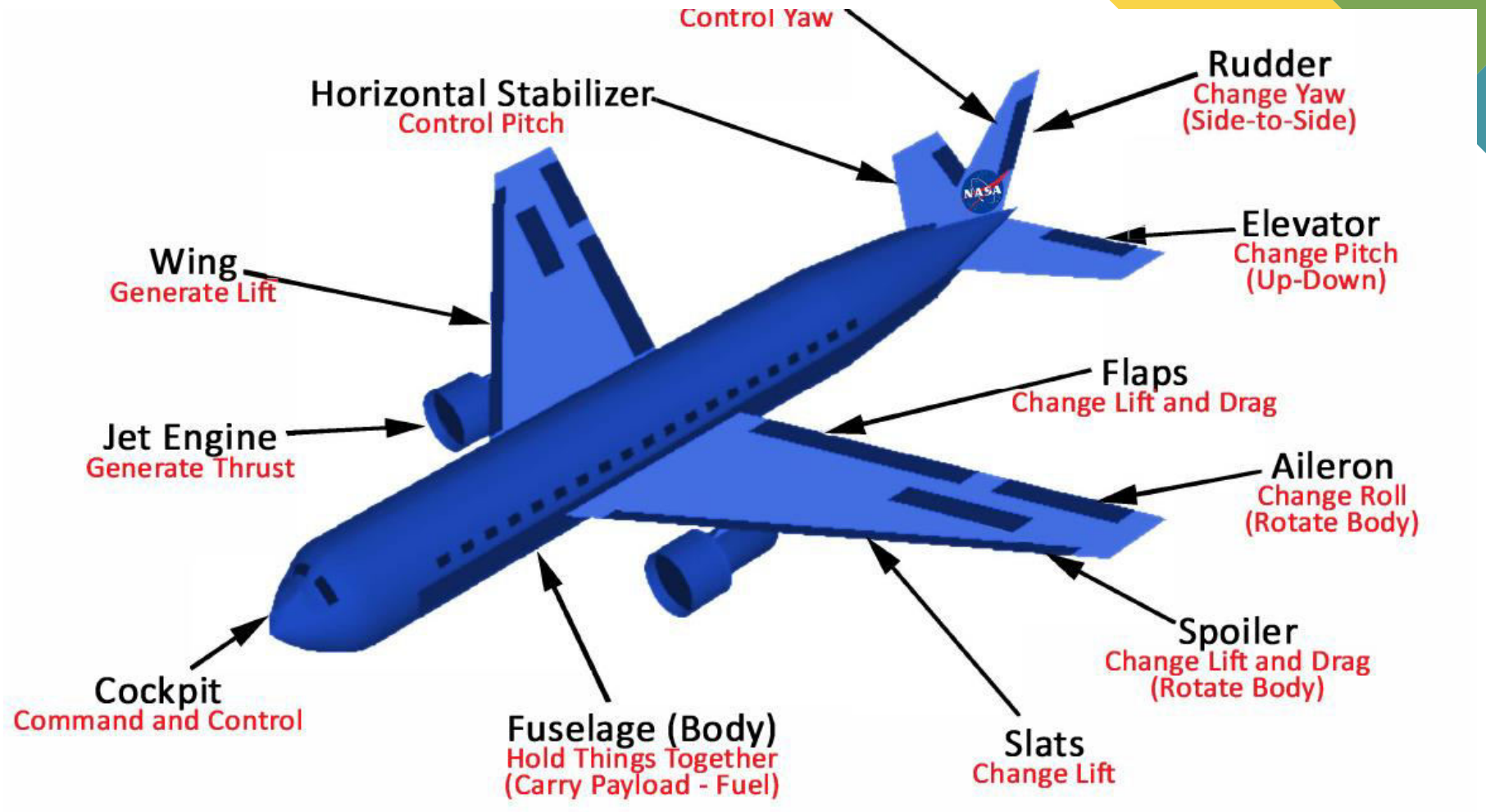
LESSON PLAN

- a) Watch the video
- b) Look at the powerpoint presentation
- c) Read the PDF document (a)
- d) Study the labeled Boeing diagram (b)
- e) Fill in the parts of the plane (c)

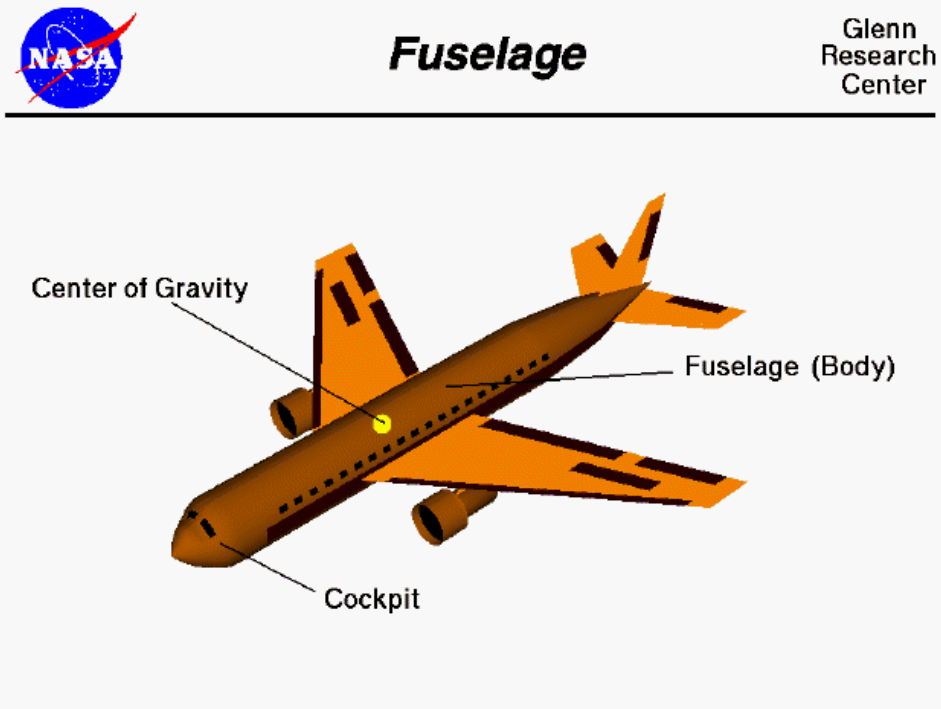
VIDEO EXPLAINING PARTS OF AN AIRCRAFT

- Click to Open:-
- https://www.youtube.com/watch?v=uyUGxyn8xAU

MAIN PARTS OF AN AIRCRAFT



FUSELAGE



The **fuselage**, or body of the airplane, is a long hollow tube which holds all the pieces of an airplane together.

The fuselage is hollow to reduce weight.

On an airliner, the pilots sit in a **cockpit** at the front of the fuselage.

Passengers and cargo are carried in the rear of the fuselage

The center of gravity of the aircraft varies dependent on the weight and distribution of the passengers and cargo.

AIRCRAFT PRESSURIZATION

A fuselage is a bit like a cigar tube with a hole in the back: **the pressurization systems constantly pump compressed air from the compressors that are present in the engines.**

To control the internal pressure and allow the internal air to escape, two or more outflow valves are located near the tail of the aircraft.

AIRCRAFT COCKPIT

The cockpit includes **a seating area for the flight crew, flight instruments, avionics, audio/radio communications, and flight controls.**

Electronic flight instruments include a multi-function display (MFD).

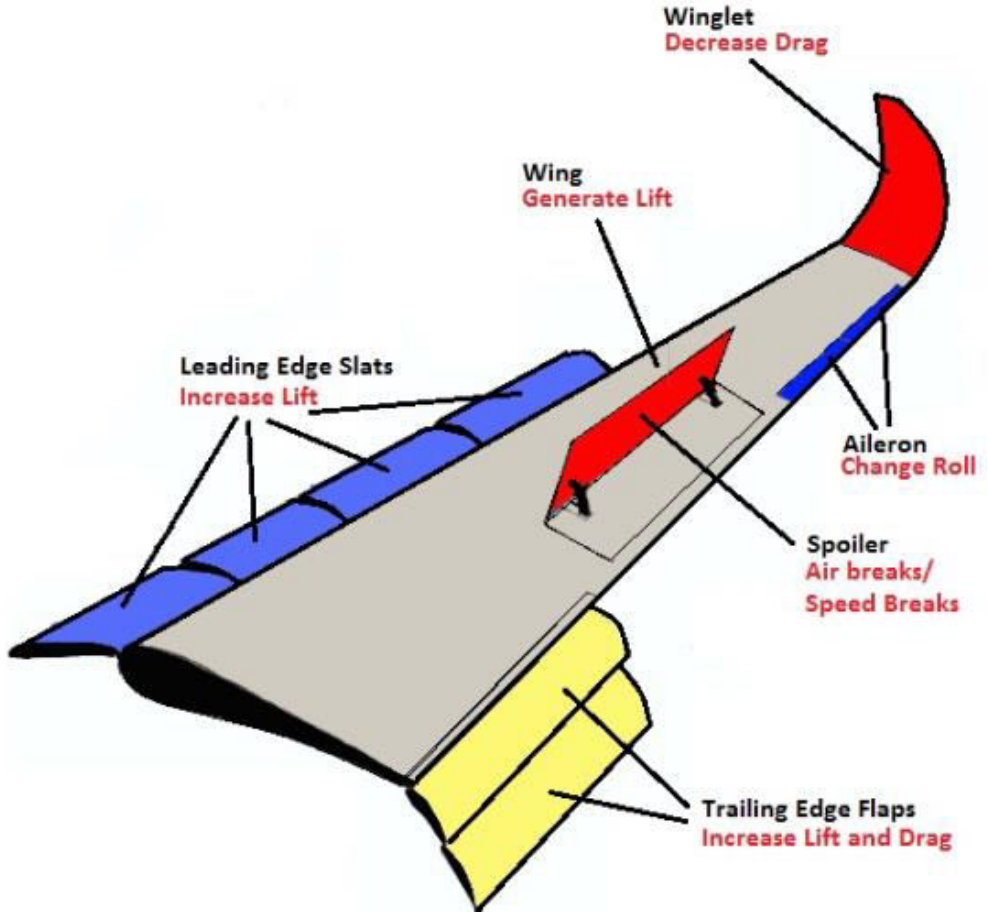
Pilots use MFD to control heading, speed, altitude, altimeter, etc.

AIRCRAFT WING EXPLAINATION

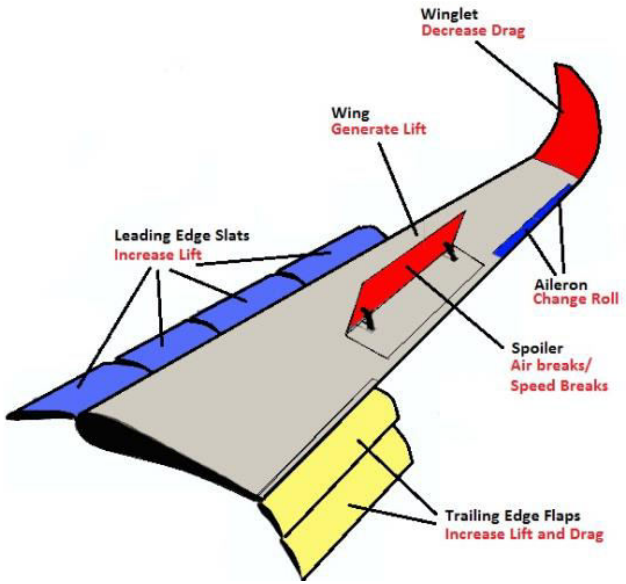
Airplane wings work by generating lift, a force that allows the plane to rise and stay in the air.

The wing’s shape, typically curved on top and flatter on the bottom

MAIN COMPONANTS OF AN AIRCRAFT WING



KEY PARTS OF THE WING

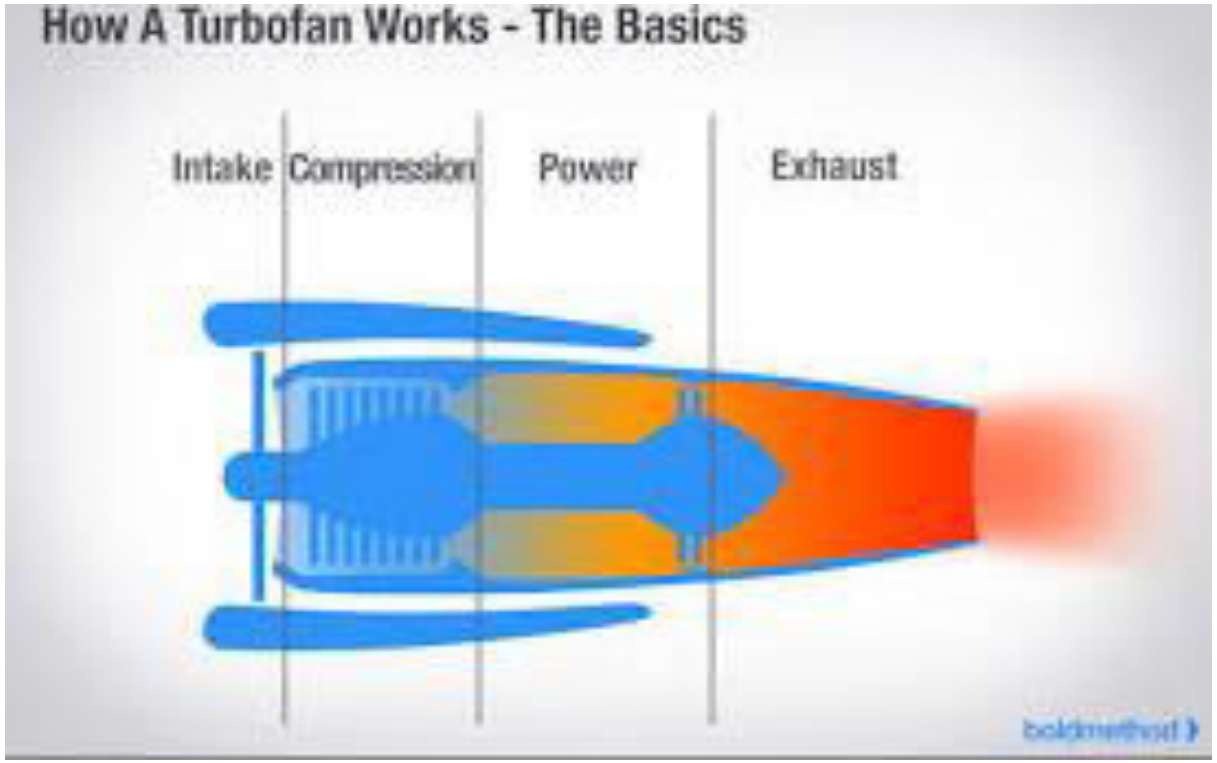


Several key parts make an airplane wing. These parts work together to ensure flight stability is maintained, lift is generated, and the flight is controlled.

Parts of an airplane wing include:

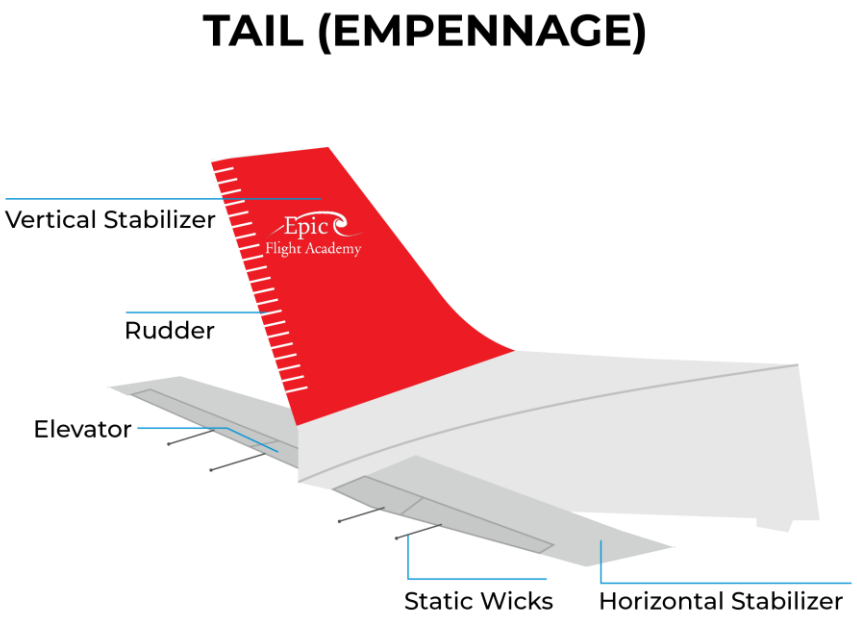
- **Ailerons** – Located at the outer edges, they control roll and help the plane turn.
- **Flaps** – Positioned near the fuselage, these extend during takeoff and landing to increase lift.
- **Winglets** – Located at the end of the wing they reduce drag.
- **Slats and Spoilers** – These adjust airflow, managing lift and drag.

SIMPLE EXPLAINATION OF A JET ENGINE



- Jet engines, which are also called gas turbines, **work by sucking air into the front of the engine using a fan.**
- From there, the engine compresses the air, mixes fuel with it, ignites the fuel/air mixture, and shoots it out the back of the engine, creating thrust.

MAIN PARTS OF THE TAIL OF AN AIRCRAFT



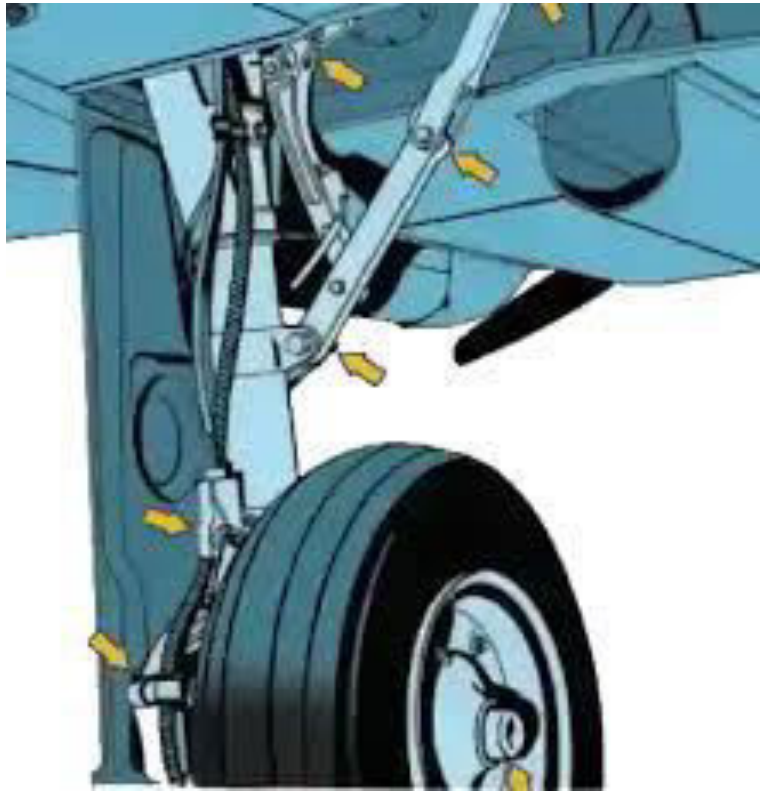
The empennage, also called the tail or tail assembly, is located at the rear of an airplane.

The tail provides stability during flight. This is very similar to how feathers on an arrow provide stability. In fact, if “empennage” sounds French, it’s because it is.

The French word *empenner*, which means “to feather an arrow,” Is the source for this word.

The tail assembly consists of the vertical stabilizer, rudder, elevator, horizontal stabilizer, and static wicks.

AIRCRAFT LANDING GEAR OR UNDERCARRIAGE



The landing gear is the undercarriage of an airplane.

Pilots use landing gear for both takeoff and landing.

The landing gear supports the plane when it is on the ground.

Landing gear allows the plane to take off, land, and taxi without damage.

Faster aircraft, such as many twin-engine or jet aircraft, have retractable landing gear.

After takeoff, pilots stow the folding landing gear to reduce drag during flight.

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