# A320F Flight Control

**INTRODUCTION**

All flight control surfaces are made of composite materials except for the slats which are made of aluminum alloy. All flight control surfaces are electrically controlled and hydraulically operated. As a back-up, the stabilizer and rudder are mechanically controlled and hydraulically operated. Pilots use side sticks to fly the aircraft in pitch and roll.

**FLIGHT CONTROL SURFACES**

The control is achieved through the following conventional surfaces.

**PITCH**

Pitch control is achieved by two elevators and the Trimmable Horizontal Stabilizer (THS).

Elevators are used for short-term activity.

The THS is used for long-term activity.

**ROLL**

Roll control is achieved by one aileron and spoilers 2 to 5 on each wing, numbered from wing root to wing tip.

**YAW**

Yaw control is fulfilled by the rudder. The rudder is used during cross wind take-off and landing, and in case of engine failure (thrust asymmetry). The yaw damper function controls the rudder for Dutch roll damping and turn coordination.

**SPEED BRAKES**

The speed brake function is used in flight to increase the aircraft drag. Spoilers 2 to 4 are used Roll orders and speed brake orders are added with priority given to the roll function.

**GROUND SPOILERS**

The ground spoiler function is used to destroy the lift during landing and in case of aborted take-off. All spoiler panels are used.

**HIGH LIFT**

The high lift function is achieved by slats and flaps. There are two flaps, inboard and outboard, and five slats on each wing, numbered from wing root to wing tip. The A321 is equipped with double slotted flaps.

**AILERON DROOP**

The aileron droop function increases the lift on the part of the wing which is not equipped which flaps.

The ailerons are deflected downwards when the flaps are extended.