

ATTACHMENT Q

Excerpts from the A300-600 American Airlines Operating Manual

Volume 2

(3 pages)

Yaw Control System

Rudder Control

Directional control is provided by a single rudder, powered by all three hydraulic systems. Other than rudder pedal input, additional inputs to the rudder are from an electric rudder trim and two yaw dampers. Yaw damping and rudder travel limiter systems improve directional stability. In normal operation, rudder travel limiter system 1 is active and system 2 is in standby. Artificial feel is provided by spring force. On the ground, the rudder pedals are linked to the nose wheel steering.

The autopilot yaw actuator is connected to the rudder mechanical control system. When one or both autopilots are engaged and slats are extended, the autopilot actuator drives the rudder. The autopilot rudder deflection is transmitted back to the rudder pedals.

During cruise, it is recommended to trim to achieve a zero Control Wheel deflection. The resulting rudder trim deflection should not exceed 1.5 unit NOSE L or NOSE R.

Two independent rudder travel limiting systems, controlled by the rudder travel feel and limitation computers, progressively decrease the maximum rudder travel from $\pm 30^\circ$ below 165 knots (low speed range) to $\pm 3.5^\circ$ above 310 knots (high speed range).

If both systems fail, regardless of airspeed, the mechanism automatically returns to the low speed range ($\pm 30^\circ$ rudder travel available). If the system does not return to the low speed range, an ECAM warning is displayed when flaps are at 20° or greater.

Yaw Damper

There are two yaw damper systems. In normal operation, system 1 is operative and system 2 is in standby. Each system is engaged by its respective Yaw Damper System Switch on the overhead panel.

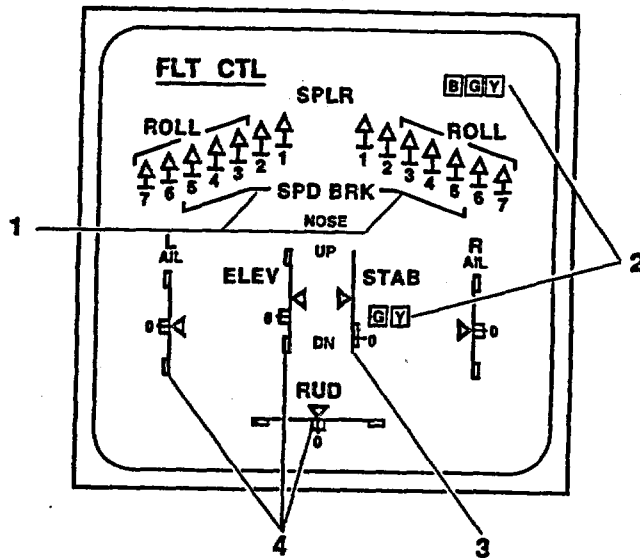
Yaw damper command is transmitted to the rudder, but there is no deflection feedback sent to the rudder pedals.

The yaw damper provides the following functions:

- Dutch roll damping
- Turn coordination which becomes active if sufficient Control Wheel deflection is applied except if:
 - autopilot is engaged in CMD, or
 - flaps are extended to 40° (allows for slip in crosswind landing), or
 - a stall warning is detected.
- Yaw compensation is available in case of engine failure during takeoff and go-around, provided either AP / FD Speed Reference System (SRS) or Go-Around mode is engaged.

If both Electrical Flight Control Units (EFCU) fail, both yaw dampers remain engaged, but turn coordination is inhibited.

FLT CTL Page



1. Roll Spoiler, Speed Brake and Ground Spoiler Position Indications

-	Green	Surface is retracted.
-	Amber	Surface is retracted but a failure exists.
△	Green	Surface is extended by more than 2°.
△	Flashing Green	Surface is extended on ground and speed is greater than 70 knots.
△	Amber	Surface is extended, but a failure is detected by the EFCU.

NOTES

- Speed brakes are shown retracted when they are slightly extended.
- Spoiler position indication is also provided on the ECAM WHEEL Page.

2. B G Y Symbols

Indicates available hydraulic systems for flight controls and stabilizer trim (THS). In case of servo control low pressure, the corresponding symbols change to amber.

3. Stabilizer Position Indication

Stabilizer (THS) position is indicated by white scales and indexes covering the full travel range.

4. Aileron, Elevator and Rudder Position Indications

A white scale covering the full travel range is provided for each flight control surface. An index indicating the actual position of the surface moves along the scale.

Boxes, located at each end of the travel range and in the neutral position, represent the rigging tolerance for the respective positions.

Aileron Droop Indication

The aileron zero position is shifted downwards when slats are extended (to indicate the aileron droop position).

