

A310 FLIGHT IN SEVERE TURBULENCE

FCOM>>Procedure and Techniques >>Inclement Weather Operation

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Identification of Sever/Extreme Turbulence:

- Large, abrupt changes in altitude and/or attitude.
- Usually large variation in airspeed.
- Passengers and crew moved violently against their seat belts.
- Loose objects move around the aircraft.

Clear Air Turbulence - CAT:

- Vertical wind shear gradient (rate of change or shear rate) greater than 5 kt/1000 feet.
- Horizontal wind gradient (rate of change) greater than 40 kt/100 nm.
- Horizontal temperature gradient (OAT/SAT rate of change) greater than 4 deg C/100 nm.
- Route is close to the polar side of a jet stream exceeding 100 knots.
- Route is close to an altitude trough of low pressure.

Flight Planning:

- Assess the potential for experiencing severe turbulence through weather charts, upper wind forecast, Airmet or Sigmet messages.
- Plan to avoid areas of forecast severe turbulence.
- If avoiding is not possible then cruise altitude and mach number should be selected at or below the optimum altitude for sufficient buffet margin.

Preparation for Severe Turbulence:

- Seat belts/No Smoking Sign ON.
- Ignition on CONT Relight.
- Autopilot in Command (do not use CWS mode).
- Fly in LVL Change or ALT hold mode.
- Auto Thrust engaged.
- Set Target Speed and Target N1 (QRH 13.04).
- Consider descent at or below optimum altitude.
- Trim Tank Mode Forward (for forward CG).
- Secure loose equipment in flight deck.
- Fasten or Tighten Seatbelt/Shoulder harness.

When in Severe Turbulence:

In addition to the preparation actions do the following:

- Disconnect Auto Thrust.
- Set Target Thrust (minimize thrust changes and allow airspeed excursions within operating and buffet margin limits).
- Descend at or below Optimum Altitude (which ensures at least 1.4g buffet margin).
- Disconnect Auto Pilot if it does not perform as desired.
- Maintain Pitch Attitude / Wings Level (attitude has priority over altitude).

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