

In English, please



RIDING THE TIGER DOES TURBULENCE MAKE YOU NERVOUS?

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Turbulence, what is it?

Turbulence is a normal phenomenon that occurs in areas where air masses are **shifting** for any number of reasons, such as temperature, jet streams, mountain waves, cold or warm fronts, thunderstorms or airborne aircraft. It **spills** orange juice, moves around trolley carts, and may send unbuckled passengers up to the ceiling. Except for extreme cases, it is not a safety issue. It is a nuisance that may require actions, such as slowing down, changing altitude or path, but more for comfort than for fear of crashing. Modern aircraft are designed to withstand the **strain without** the risk of falling apart.

Clear Air Turbulence

Turbulence can be difficult to forecast or to detect visually. As its name suggests, Clear Air Turbulence - a.k.a. CAT, a severe (or big) CAT being a tiger - occurs outside of clouds and cannot be detected by conventional weather radars which are designed to analyze water droplets. The Clear Air Turbulence that is encountered at high altitude, around jet streams near the Tropopause, is not a concern to general aviation. But CAT can also be created by terrain, large buildings, or be found in the vicinity of a cumulonimbus. No pilot **in his right mind** would fly inside a cumulonimbus, where shearing vertical currents can tear a plane apart, but convective movements of air around a thunderstorm can be felt as far as 20 miles away from it. Mountain waves can be pretty violent too, and can extend quite far from the **peaks**.

Vocabulary

CHOP	le clapot
IN ONE'S RIGHT MIND	sain d'esprit
A JOLT	une secousse
A MICROBURST	une microrafale
A PEAK	un sommet
RELEVANT	pertinent
TO SHIFT	se déplacer
TO SPILL	renverser
WINDSHEAR	le cisaillement du vent
TO WITHSTAND THE STRAIN	supporter la pression

Low level turbulence

For general aviation pilots, low level turbulence is more **relevant** as they would encounter it at the altitudes they usually fly. Its origin can be thermal - air near the ground is heated unevenly depending on the surface below and therefore rises differently - or mechanical, such as wake turbulence created by aircraft or helicopters. The closer it occurs to the ground, the more damaging it may be, as there is less room for recovery. **Microbursts**, for example, are strong downdrafts met below the base of a cumulonimbus and fall into the category of low level **windshear**.

Turbulence intensity

Turbulence is graded as light, moderate, severe or extreme. Light turbulence, or light **chop**, causes a succession of slight bumps and **jolts**. On the other side of the scale, extreme turbulence is capable of causing structural damage to the aircraft.

Listening comprehension

Listen to the audio version on www.anglais-pour-voler.com and find out the missing words. One dash between brackets is a word.

CTL Jet blue 10-76, Kennedy Tower, that traffic (- - 1) is a heavy Boeing 7-67, (- - - 2), the wind is 1-9-0 at 7, runway 2-2 left, clear to land.

PIL 2-2 left clear to land, Jet Blue 10-76.

CTL Fedex 1-28 (- 3), (- - - 2), 1-8 center, (- - 4) 1-6-5, clear for take off.

PIL Clear for take off 1-8 center, heading 1-6-5, Fedex 1-28 (- 3).

PIL ... 70, (- 5) for 2-4 good evening.

CTL Blue Jet 33-70, Bradley tower, good evening, (- - - 2), heavy Airbus 3-40 short final, wind 2-0-0 at 5, runway 2-4, clear to land.

PIL Clear to land 2-4, Blue jet 33-70, thank you.

PIL Miami center, good morning, TAM 8-0-8-0 at level 4-0-0, (- 6) ELMUC.

CTL TAM 80-80, Miami center, roger, (- - 7) I've had (- 8) of (- - 9) at your 9 o'clock or so in about, maybe 4-0 miles, at flight level 3-6-0, and ... when (- 10) I need to know your LUCTI (- 11), requested altitude and Mach number.

PIL Standby.

CTL Fedex 57 are you (- 12) any kind of turbulence or do you need to (- 13) at all?

PIL Negative for Fedex 57.

CTL Fedex 57, roger, (- - 7) there was a report of (- - 9) at your 1 to 2 o'clock in about 8-0 miles at flight level 3-6-0, about 45 to 50 minutes ago.

PIL All right can we (- - 14) to 3-1-0?

CTL He (- 15) (- 16) turbulence somewhere over Rio de Janeiro.

PIL Minneapolis center, Cactus 1-79, flight level 3-2-0, (- 17) (- 18). How is the (- 19) at 36 and 34?

CTL Cactus 1-79, Minneapolis center, roger, let me give you a (- 20) of reports.

CTL Friendship flight 6-24 how is your (- 19)?

PIL It's pretty (- 21) now, we have the punching balls behind us.

CTL And United 4-65 how is your (- 19)?

PIL (- - - 22) of (- 23) (- 18), United 4-65.

CTL Cactus 1-79 flight level 3-4-0 at your 1 o'clock and 5-0 miles, (- - - 22) ... (- 24) (- 23) (- 18), and flight level 3-6-0 sounds may be just a little better, (- 25) (- 23) (- 18).

PIL OK, standby Cactus 1-79. ●

Answers

1 - touching down; 2 - caution wake turbulence; 3 - heavy; 4 - fly heading; 5 - inbound; 6 - approaching; 7 - be advised; 8 - reports; 9 - severe turbulence; 10 - able; 11 - estimate; 12 - experience; 13 - deviate; 14 - go down; 15 - encounter; 16 - extreme; 17 - continuous; 18 - chop; 19 - ride; 20 - couple; 21 - smooth; 22 - in and out; 23 - light; 24 - intermittent; 25 - occasional.