

FREQUENTLY ASKED QUESTIONS - NOISE

What are Noise Contours?

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What is a DNL?

Which is Quieter – An Arrival or Departure?

Who Tells Airplanes Where To Go?

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WHAT ARE NOISE CONTOURS?

Noise contours are a series of lines superimposed on a map of the airport. These lines represent various DNL levels (typically 65, 70, and 75 dBA). DNL noise contours are used for several purposes.

- Noise contours highlight existing or potential areas of significant aircraft noise exposure (as defined by the FAA).
- Noise contours are used to assess the relative aircraft noise exposure levels of different runway and/or flight corridor alternatives.
- Noise contours provide guidance to political jurisdictions in the development of land use control measures. These measures include zoning ordinances, subdivision regulations, building codes, and airport overlay zones.

It is the areas within the 65, 70, and 75 DNL noise contours that the FAA considers to be the most impacted by aircraft generated noise. Beyond the 65 DNL noise contour, noise is most noticeable in areas below established flight corridors.

HOW ARE NOISE LEVELS DETERMINED?

To more consistently and easily describe and compare noise environment comprised of numerous single events that vary in duration and magnitude over long periods of time, the U.S. Environmental Protection Agency developed a single number descriptor. This descriptor is the DNL. It is a noise metric which describes an average day/night sound level. The DNL metric is used by the FAA to quantify aircraft noise exposure in the vicinity of an airport. Noise contours of specific DNL levels are developed using the FAA's Integrated Noise Model (INM). Airport specific data used in the INM model to develop the contour will result in the depiction of noise exposure in the vicinity of an airport. Airport specific data used in the INM include: Average Daily Operations, Aircraft Fleet Mix, Runway Use, Flight Corridors and Usage, Departure Destinations and Day/Night Use.

WHAT IS A DNL?

DNL (Day-Night Sound Level) is based on sound levels measured in relative intensity of sound, or decibels (dB), on the "A" weighted scale (dBA). This scale most closely approximates the response characteristics of the human ear to sound. The higher the number on the scale, the louder is the sound. DNL represents noise exposure events over a 24-hour period. To account for human sensitivity to noise between the hours of 10 p.m. and 7 a.m., noise events occurring during these hours receive a "penalty" when the DNL is calculated. Each nighttime event is measured as if ten daytime events occurred.

WHICH IS QUIETER – AN ARRIVAL OR DEPARTURE?

Arriving aircraft at low altitudes are generally quieter than departures of the same aircraft type because this mode of flight requires much less engine power. However, close to the airport, the relative quietness of an arrival may be offset by the fact that they are typically lower in altitude than departures over the same location.

WHO TELLS AIRPLANES WHERE TO GO?

The Federal Aviation Administration (FAA) is the sole organization in the US responsible for the movement of aircraft both on the ground and in the air. The FAA is responsible for designing air travel routes and procedures and determining hazards to flight such as tall buildings or towers.

All air traffic controllers work for the FAA as part the National Airspace System. Air Traffic Control (ATC) determines which runway is in use at any time of the day or night. An ATC controller's primary job is to ensure the safety of all aircraft.

During calm weather, preference is given to runways that will have a minimal noise impact on the surrounding community. However, it can be difficult to switch all traffic using the airport to another runway quickly because aircraft are aligned and sequenced to the runway over one hundred miles away. This can cause a non-preferred runway to be used longer than weather conditions may indicate.

WHY CERTAIN AIRPLANES ARE LOWER THAN OTHERS?

Aircraft altitude is generally determined by distance from the landing or takeoff runway. The closer the aircraft is to the runway, the lower the altitude. Arrivals tend to descend at a fixed angle of 3 degrees, while the angle of ascent for departures is a function of aircraft type, weight, air temperature, and wind speed.