



WESTERN SYDNEY Fact Sheet



Understanding aircraft noise

Aircraft noise

The level of noise heard from an aircraft during take-off, landing and during flight can vary. Aircraft noise is affected by a number of different factors, including:

- **Weather** – the noise experienced varies significantly depending on the wind speed and direction, the season and cloud cover.
 - The temperature and humidity affects an aircraft's ability to gain height.
 - Wind direction affects the direction a plane will fly in as aircraft land and take off into the wind.
 - Cloud cover and temperature inversions will refract sound waves, making aircraft noise seem louder
- **Height** of an aircraft – the higher an aircraft is the less noise is generally heard.
- **Changes** in engine thrust – the thrust used affects the amount of wind resistance and noise experienced.
- **Type** of aircraft – different planes have different noise profiles dependent on size and engine types.
- **Topography** – the elevation and shape of landforms affects the noise experienced. Higher elevations are closer to the aircraft overhead than at sea level. Noise from aircraft also bounces off valleys and mountains affecting the noise experienced.



People react differently to noise and this can be influenced by many different factors, including surroundings and other activities happening in the background.

Aircraft noise and Western Sydney Airport

The operation of the Western Sydney International (Nancy-Bird Walton) Airport will result in changes to the pattern and exposure of aircraft movements above Western Sydney through the introduction of new aircraft operations.

Communities in Sydney and surrounds will be affected by noise from aircraft during take-off, landing and when in flight. The greatest impacts are predicted to be experienced in locations closer to the airport, under or near the aircraft departure and arrival routes.

The geographic extent and level of aircraft noise exposure that will result from the operation of the airport is complex and depends on final flight paths, operating procedures, the time of day, the season, weather conditions and other factors.



Noise amelioration

A government policy on noise amelioration will be considered closer to commencement of operation of the airport. The policy will take noise insulation and property acquisition into account.

Measures to mitigate the effects of aircraft noise

Planning measures

An effective way of protecting communities from aircraft noise is the application of land-use planning controls, which place restrictions on building in areas where aircraft noise will be highest.

Flight path design

The design of flight paths for Western Sydney International will be guided by airspace design principles, including to:

- ensure arrivals do not converge through a single merge point over any single residential area
- avoid direct overflight of noise sensitive facilities/areas and visually sensitive areas where possible
- provide the community with height above ground altitude information for the most common and noisiest aircraft types, particularly for areas of elevated topography
- ensure residential areas that are overflown do not receive overflights from both arriving and departing aircraft where possible
- prioritise Continuous Climb Operations (CCO) and Continuous Descent Operations (CDO), which reduce noise and fuel use
- consider possible flight paths that assist in managing aircraft overflight noise at night or during low demand periods
- accommodate a procedure involving arrivals and departures to the southwest of the airport to manage aircraft noise at night
- avoid changes to existing noise-sharing arrangements at Sydney (Kingsford Smith) Airport.

Health risk assessment for the airport

The *Environmental Impact Statement 2016* (EIS) for Western Sydney International included a health assessment that measured the potential health risks, including the health factors associated with noise impacts.

The assessment found that the increased risk of these impacts, if any, would be limited to areas around the airport site and would be largely within accepted international and national standards. In developing final flight paths, opportunities to minimise noise impacts on communities are a key consideration.