

N70 Noise Contours

Within the Archerfield Airport Preliminary Draft Master Plan 2011 (PDMP), Archerfield Airport Corporation (AAC) proposes a number of initiatives to improve the usability of the airport and assist its development as Brisbane's Metropolitan Airport. The changes are neither radical nor urgent but will assist in the development of a significant resource of South-East Queensland that is currently underutilised. The following information provides a number of diagrams along with an explanation of N70 contours to assist in their interpretation.

Quick Facts

- N70 contours are derived from ANEFs and are designed to provide the user with an easier to interpret pictorial representation.
 - N70 contours indicate the predicted average number of noise events above 70 dB(A) for a particular location.
 - Typical conversation occurs at around 60-65 dB(A).
 - The secondary grass runways are used for daytime flying, they are not used for night operations.
-

- Current Operating Procedures & Movement Statistics
- Grass Runway Realignment
- ANEF & Flight Paths
- **N70 Noise Contours**
- Land Use & Surrounding Roads

- Current Operating Procedures & Movement Statistics
- Grass Runway Realignment
- ANEF & Flight Paths
- **N70 Noise Contours**
- Land Use & Surrounding Roads

ANEF contours give an indication of the amount of total aircraft noise energy received by locations on the ground near an airport on an annual average day. They are primarily designed as a land use planning tool and can be difficult to interpret by those with little expertise. N70 contours have been developed to provide the user with an easier to understand pictorial representation indicating the predicted noise level and the number of times that this level is expected over a given period and location.

N70 contours are based on the number of events louder than 70 dB(A) and are designed with software using data extracted from the ANEF. Typical conversations occur around the 60-65 dB(A) range. The Australian Standard AS2021 specifies 60 dB(A) as the indoor design sound level for normal domestic dwellings. An external noise event will be attenuated by approximately 10 dB(A) by the fabric of a house with open windows.

Therefore, 70 dB(A) has been chosen as an appropriate industry standard for assessing noise events that are likely to cause interruptions with conversation or with listening to the radio or the television. This interference is less likely to be noticeable where background noises are present, as is the case with the use of air-conditioning or nearby traffic, and during winter when windows are typically closed.

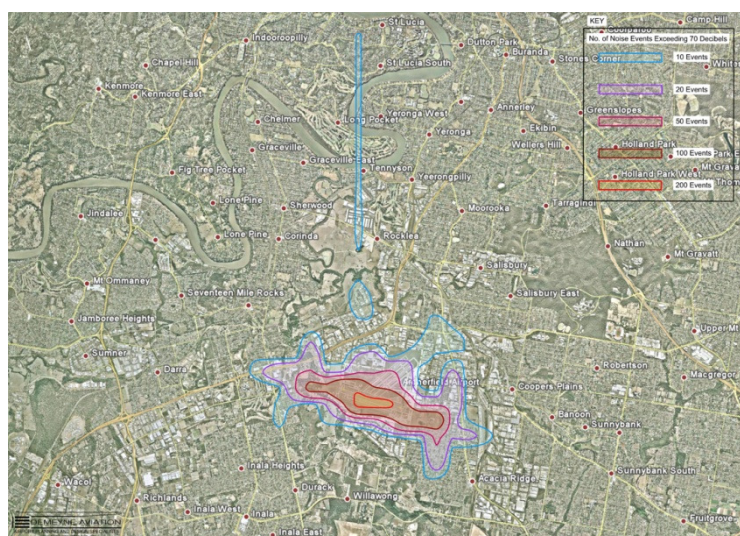


Figure 4.1 – Predicted N70 contours for 2015

Figure 4.1 depicts the predicted N70 contours for an average day over a 24hr period for the year 2015. This is based on movements of around 175,000/annum and assumes an annual growth rate of approximately 3% compared with the 150,000 odd movements/annum currently experienced. The number of events per day will vary according to a number of factors including

wind direction, time of day, ability for a pilot to fly along the theoretically ideal tracks that have been used to calculate the contours as well as other environmental factors.

For example, when the wind is blowing from the north at greater than 12 knots, Air Traffic Control will redirect light aircraft to use the North-South facing runways (grass secondary runways). During this period, there may be a greater than average number of N70 events in areas below flight paths associated with these runways (see Fact Sheet – 'ANEF & Flight Paths' for further details). However, at night these runways will be closed and so a lower number of N70 events will occur. As mentioned previously, these contours are an average and will alter from day to day with the weather conditions current at the time.

- Current Operating Procedures & Movement Statistics
- Grass Runway Realignment
- ANEF & Flight Paths
- **N70 Noise Contours**
- Land Use & Surrounding Roads

Figures 4.2 and 4.3 depict N70s developed from the 'Practical Capacity' ANEF. They are based on fixed-wing aircraft movements of around 425,000 per annum. This figure, as mentioned in the 'ANEF & Flight Paths' Fact Sheet, is the maximum theoretical capacity of the airport taking into consideration taxiway, runway and airspace limitations. This figure has been adopted as a worst possible case scenario to enable stakeholders to gauge likely impacts on new/existing developments in the unlikely event that this situation arises in the future.

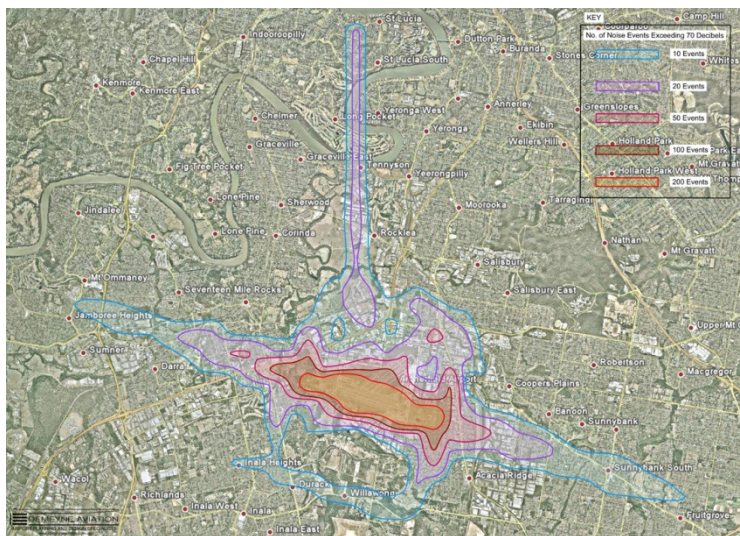


Figure 4.2 – 'Practical Capacity' N70 contours for existing runways

Figure 4.2 is the 'Practical Capacity' N70 which includes the existing secondary, grass runway alignment of 04/22. For reasons discussed in the 'Grass Runway Realignment' Fact Sheet, a realignment of this runway by approximately 30° counter clockwise, to a bearing of 01/19, will improve the safety and overall usability aspects of the airport. Figure 4.3 represents the 'Practical Capacity' N70 and includes this change in runway direction.

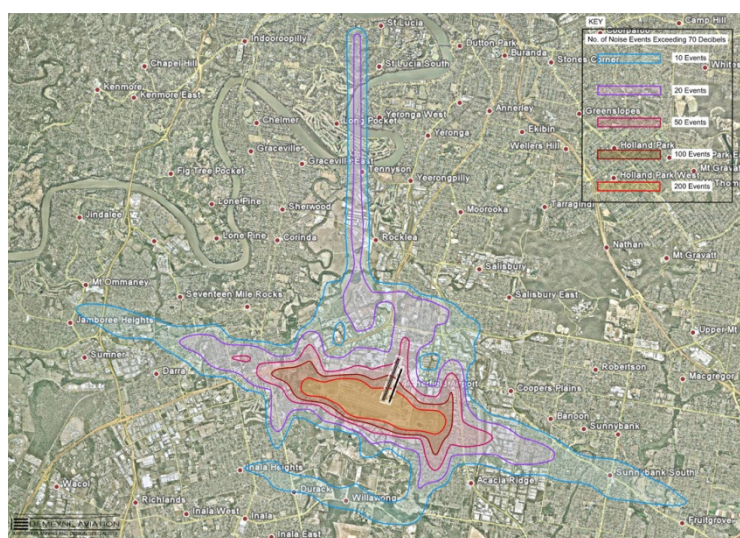


Figure 4.3 – 'Practical Capacity' N70 contours for proposed runways

The differences in the two N70 diagrams associated with this realignment can be primarily seen at the north-east and south-east corners of the airport. As previously indicated, these areas would expect to see a significantly reduced impact from aircraft noise at night when the North-South secondary, grass runways are closed.

The 'spike' to the north of the airport is associated with helicopter movements from organisations like the essential Emergency Management Queensland Helicopter Rescue service.