Managing Aircraft Noise

Parafield Airport has had a rich history of aviation. The airport site was selected in the early 1920s with first operations commencing in 1927. The airport has progressively developed to meet the growing aviation and pilot training needs of airlines throughout Australasia.

Parafield Airport operates 24 hour per day, 7 days per week, and is regarded as South Australia's premier general aviation airport and a world standard international pilot training airport.

During 2022, Parafield Airport managed approximately 4,200 aircraft movements every week, with the majority being pilot training flights. While most flights occur between 9.00am and 5.00pm, there are flights that operate during all times of the day. Flying at night is an important part of pilot training requirements.

Noise is an unavoidable by-product of aircraft operations. Parafield Airport Limited (PAL), as the airport operator, recognises the need to assist in managing aircraft noise for the surrounding communities by working closely with the aircraft operators (the generators of the noise) and Airservices Australia (the airspace manager).

Understanding Airport Noise

PAL works with all levels of government, aircraft operators and the community to ensure measures are in place to manage aircraft noise. The most effective means for reducing the impact of aircraft noise is through the effective long-term planning of land use for areas adjacent to the airport site.

Other programs in place to manage aircraft noise around Parafield Airport include:

- Encouraging aircraft operators to adopt the 'Fly Friendly' program, which seeks to manage aircraft noise exposure and its impact on the surrounding community
- Noise abatement and operational procedures for preferred runways and training circuit operations
- Working closely with the Commonwealth, South Australian and local governments
- Consulting and engaging with the local community
- Investing in airport infrastructure to support new-generation quieter aircraft, including electric-powered aircraft types.

Fly Friendly program

Parafield Airport introduced its 'Fly Friendly' program in 2012 to manage aircraft noise exposure and its impact on the surrounding community. Aircraft operators are encouraged to adopt the Fly Friendly program when conducting training activities. The Fly Friendly program is regularly reviewed. When safe to do so and/or under direction of Airservices Australia's Air Traffic Control, the main objectives of the Fly Friendly program are for pilots to:

- Climb to operating height as soon as possible
- Maintain operating height
- Reduce engine power as soon as possible
- Follow the promulgated flight paths
- Avoid residential areas if and where practicable
- Do not fly wide circuits - keep as narrow as possible
- Utilise low-powered descent approaches from training area to reduce noise.

Circuit training, which is repetitive touch-down and take-off operations for pilot training purposes, is restricted to 7.00am to 11.00pm Monday to Friday, 7.00am to 9.00pm on Saturday, and 8.30am to 9.00pm on Sunday. Circuit training is not permitted on Christmas Day or New Year's Day, or before 9.00am on Anzac Day.

Parafield Airport

Investing in Airport Infrastructure

The Parafield Airport Master Plan 2024 considers technologies and other innovations that will improve and optimise operations.

Technological advancements in aircraft technology have reduced aircraft fuel consumption, air pollution, and noise emissions significantly over the past 30 years and is expected to continue into the future. Technology is also expected to evolve to change how pilot training is conducted.

Changes in the next 20 years could include the use of sustainable biofuel, electric-powered aircraft, the introduction of air taxis and growth in aircraft drones.

Consultation with Local Communities

PAL continues to engage with local communities surrounding the airport through a range of committees and forums. Issues such as the management of the Fly Friendly program are regularly considered. Master planning, including the formulation of the Australian Noise Exposure Forecast and aircraft flight path improvements, are regularly discussed, including presentations from aircraft operators and Airservices Australia. Information about aircraft noise is published on the Parafield Airport website.

Airservices Australia has developed online systems to provide information to the community about nearby aircraft operations. WebTrak, available at airservicesaustralia.com/webtrak, provides information about individual flights for the past three months and allows users to submit aircraft noise enquiries and complaints. Aircraft operations for Parafield Airport can be viewed through the Adelaide area portal (noting that some operations for Parafield may not be displayed on WebTrak due to the technology on board the particular aircraft or the nature of the flight). Aircraft in Your Neighbourhood, available at aircraftnoise.airservicesaustralia.com provides information about runway use and flight paths for Parafield Airport specific to a person's selected location, including frequency of flights by hour of day and aircraft altitude.

Electric Aircraft

Aircraft operators at Parafield Airport have expressed a strong intention to take up electric or hybrid aircraft types when they become available. As well as lower operational costs and reduced carbon-related emissions, electric and hybrid aircraft types also tend to be quieter. It is estimated that the proportion of movements by electric/hybrid aircraft types at Parafield Airport could reach nearly 70 per cent by 2043. While there are still many challenges to overcome for electric aircraft to become a viable option for the general aviation industry, PAL is working with local operators to plan for the future use of electric aircraft at Parafield Airport.

Australian Noise Exposure Forecast

The Australian Noise Exposure Forecast (ANEF) is the aircraft noise forecasting system that has been adopted in Australia for land use planning. The Airports Act 1996 requires each master plan to provide a new ANEF that is endorsed for technical accuracy by Airservices Australia.

The South Australian government considers the siting of new buildings and creation of new allotments within areas subject to particular ANEF values through a specific Aircraft Noise Exposure Overlay that is part of the State's comprehensive Planning and Design Code.

A new ANEF that considers the operations of Parafield Airport to 2043 has been prepared for the Master Plan 2024. Following engagement with South Australian and local governments, the Parafield Airport ANEF was endorsed for technical accuracy by Airservices Australia.

When considering the forecast noise characteristics (2043 ANEF) against the current noise characteristics (2022 ANEI), the noise footprint expands slightly in all directions. Although the changes over the 20-year period are relatively minor given the duration of time for growth, the forecast change in noise footprint can, without broader context, create the risk of community anxiety.

In addition, when comparing the 2043 ANEF against the current approved 2037 ANEF, there are changes in the shape of the forecast ANEF contours. The 2043 ANEF has a slight reduction in overall footprint and reduction in the extent of areas affected by forecast noise exposure to the north and south of the airport, while there are additional areas located within the ANEF 20 contour to the east and west.

The reason for these changes is attributed to:

- The use of a new noise modelling software in the form of the Aviation Environmental Design Tool (AEDT) as required by Airservices Australia (AsA) as opposed to the now superseded Integrated Noise Model (INM) which was used to prepare the 2037 ANEF.
- Improvements in the baseline data surrounding current operations and therefore corresponding improvements to the forecast assumptions.
- The runway use allocation across all four runway systems which are reflective of what is occurring today.
- The aircraft types and number of movements of each aircraft type in line with updated forecasts.
- The future helipad location which during the 20 period is planned to relocate to the centre of the airport from its current location in the north-west portion.

It is important to note that:

- There is a slight reduction in the forecast number of aircraft operating at Parafield Airport over the forecasted 20 year period, and a reduction in the number of jet aircraft movements, when comparing the draft 2043 ANEF with the previously approved 2037 ANEF.

Parafield Airport Precincts

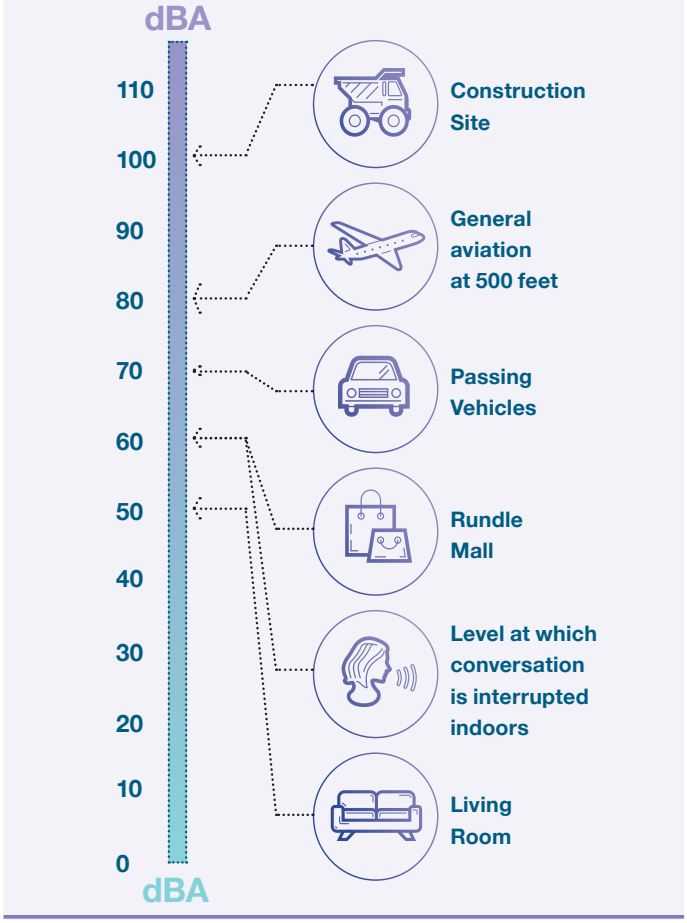
- There is no change to the capacity of airfield infrastructure.
- Parafield Airport has not proposed to undertake any substantial airfield works that would result in the accommodation of larger aircraft.
- Electric aircraft are not included in the ANEF as they do not currently operate at PAL and there is no certified training aircraft currently in commercial operations in Australia.

Describing aircraft noise

Aircraft noise is generated both by the aircraft's engines and by air passing over its airframe. Different models and sizes of aircraft produce different types and loudness of noise. These characteristics depend on the type of engine (propeller or jet), aerodynamic noise (affected by how modern the aerodynamic design is) and how the aircraft is flying (its speed and weight characteristics; how it takes off and lands).

Number-Above modelling is a frequency based metric that provides maps of areas that are likely to experience a predicted number of average daily noise events above a specified decibel level. The typical noise levels considered are 60 and 70 decibels. Number-Above contours have been prepared to show the areas expected to experience 100 or 200 average daily events above 60 decibels (N60=100 and N60=200) and 100 average daily events above 70 decibels (N70=100) for the forecast total number of aircraft movements that could occur at Parafield Airport in 2043.

Example Noise Levels (in decibels)



An outdoor noise level of 60 dBA is approximately 50 dBA indoors, with windows open to a normal extent, which is the approximate noise level that could cause sleep disturbance. An outdoor noise level of 70 dBA corresponds to a 60 dBA noise level indoors, which can disturb conversation or other indoor activities such as watching TV.

Parafield Airport Number-Above Contours 2043 Layout

LEGEND

- Airport Boundary
- Arterial Roads
- Drainage/Water Body
- Parks, Forests and Reserves
- Runways
- Local Roads
- N60=100
- N60=200
- N70=100