

## **SYDNEY AIRPORT COMMUNITY FORUM**

### **Submission on the draft EIS for Western Sydney Airport**

The draft Environmental Impact Statement (EIS) for Western Sydney Airport (WSA) was released on 19 October 2015 and is open for public comment until 18 December 2015.

This submission is presented on behalf of all members of the Sydney Airport Community Forum (SACF). SACF consists of 11 Federal Members of Parliament, two NSW State members, six local councils, two community members and three industry representatives.

The role of SACF is to:

- provide advice to the Minister for Infrastructure and Regional Development, Sydney Airport Corporation and aviation authorities on the abatement of aircraft noise and related environmental issues at Sydney Airport; and
- act as the main body for consultation on the Long Term Operating Plan (LTOP) for the Sydney Airport.

The construction of a second major airport in Sydney is overdue, and the proposed WSA is fully supported by SACF members. A second airport in the Sydney basin is essential to manage the growth in aviation demand in Sydney and the future environmental impacts of this demand. By any measure the environmental impact of the WSA, and in particular aircraft noise on its surrounding communities will be significantly less than at Sydney's Kingsford Smith Airport (KSA). WSA will provide major economic and social benefits not just to Western Sydney, but Sydney as a whole.

In making this submission SACF is keen to avoid a repeat of earlier mistakes associated with the EIS for the third runway at Sydney Airport. SACF was established in response to the widespread public opposition which arose from the introduction of the third runway at KSA. The EIS for the third runway understated the noise impact on surrounding communities. This resulted in KSA developing the Long Term Operating Plan (LTOP) requiring air traffic control to maximize flights over water and non-residential land. Where overflight of residential areas cannot be avoided LTOP aims to safely and fairly share the noise between communities by promoting the use of "noise sharing" operating modes. LTOP requires ongoing monitoring by SACF and the LTOP Implementation and Monitoring Committee.

A Senate Select Committee on Aircraft Noise in Sydney published its report *Falling on Deaf Ears*, which analysed the failings of the third runway EIS. The findings of this report should be taken into consideration when preparing a comprehensive EIS for WSA.

### **Depiction and representation of aircraft noise**

A key finding of the *Falling on Deaf Ears* Report was that, while some of the public opposition was related to the sudden increase in aircraft noise, the community was mostly concerned as a result of feeling they had been misled.

The third runway EIS presented information which was technically complex and easily misunderstood. It included maps with noise contours which depicted noise affected areas, and many people assumed that aircraft noise would not be heard outside these zones. The draft EIS for Western Sydney Airport has aspects in its presentation of aircraft noise impacts that could be incorrectly interpreted in a similar manner.

Residents living near airports or under busy flight paths can be exposed to the impacts of aircraft noise and this can affect people in different ways. Aircraft noise is influenced by a number of different factors, for example how far away an aircraft is and changes in engine thrust.

A moving aircraft causes air around it to be compressed, causing noise waves. Aircraft noise increases when the landing gear and flaps have been deployed, making the aircraft less aerodynamic. The large fans at the front of an engine and from the jet exhaust, as well as propellers, also cause noise waves. As air gets compressed, it reverberates against the aircraft's surfaces and makes noise. This noise can be loudest when the aircraft is taking-off as most aircraft noise is generated by the large fans at the front of each engine and the jet exhaust.

The further away an aircraft is from the ground, the quieter it will be to residents below. The EIS as it is currently drafted does not adequately explore the effects of aircraft noise at higher altitudes and that, while the sound levels may be lower, people may still be affected by aircraft noise in different ways. This was recognised in the *Falling on Deaf Ears* Report (paragraph 8.110) which found that *"it is essential that information concerning noise impact at levels below 20 ANEF be provided to affected communities."* There needs to be explicit recognition in the EIS that the effects of aircraft noise extend beyond the depicted noise contours and residents may still be affected by aircraft at higher altitudes. For example, a concentration of low noise incidents can lead to similar levels of annoyance as a small number of high noise incidents. This is one reason why the driving force of LTOP was the principle of noise sharing across the surrounding region.

The draft WSA EIS depicts flight paths as narrow lines on a map. A more realistic depiction of aircraft movements over a period of time at a major airport would show a multitude of aircraft tracks across a broad area. SACF understands that the modelling in the EIS included the use of modern air navigation techniques. However, not all aircraft will be able to use clearly defined smart tracks or continuous descent approaches for landing at the WSA. This will result in dispersion of aircraft movements and potentially a wider area of noise affected residents than is currently presented in the 'number above' noise contours in the draft EIS.

Figure 31-1, Section 31.2.2.1 in the EIS Part 31 Noise appears inaccurate as aircraft noise associated with more modern aircraft is not declining in a constant linear fashion as depicted, otherwise aircraft would be near silent in twenty years. At its best noise is a negative exponential function, with limited potential future improvement as aircraft/airframe manufacturers reach the outer limits of what is possible to reduce aircraft noise at source. It has been shown that the noise improvement of modern aircraft is a matter of a few decibels, a difference that is barely perceptible to the average human ear.

Improvements in individual aircraft types are also mostly offset by the fact that expected passenger growth can only be met by increasing the size of aircraft. Larger aircraft tend to be noisier than their smaller counterparts. Figure 31-1 should be replaced with a scientifically validated graphic or otherwise removed. There is no such thing as a quiet aircraft.

The full noise impacts of flight paths for the WSA have not been considered above 5,000 feet, which is the merge point for flights landing into WSA. As noted earlier, aircraft noise outside the noise contours will affect different people in different ways and this needs to be fully acknowledged in the EIS.

### **Indicative Flight Paths**

The indicative flight paths contained in the EIS only serve as a proof of concept that WSA and Sydney Kingsford-Smith Airport (KSA) can operate together. The EIS notes that an aeronautical study/airspace design process will be undertaken at some point in time closer to the operation of WSA.

SACF believes that, as a basis for environmental assessment and communication and consultation with the community, detailed proposed flight paths and accurate predictions of associated noise impacts should have been released as part of the EIS.

All major airports produce Master Plans every five years, as required under the *Airports Act 1996*, which predict aircraft movements, fleet mix, passenger numbers and aircraft noise for the following 20 years into the future. SACF believes it would be possible to do the same for WSA, which would assist in informing residents of potential impacts and allow consideration of possible airspace conflicts.

Page 19 of Volume 1 states there may need to be *“changes to Sydney airport flight paths to maintain independent operations at the proposed airport and Sydney airport to achieve the expanded demand for capacity”*. This is an issue of significant concern. The LTOP for KSA has been put in place as a direct consequence (as highlighted earlier) of the aircraft noise burden placed on residents by its operations, including those often a significant distance away from the airport. The failure of the WSA EIS to explain what changes might be contemplated to KSA flight paths is a major omission; and a further consequence of the inadequacy of the proposed flight path design for WSA. It is essential that the WSA airspace design does not detrimentally interfere with LTOP flight paths’ including the distribution of noise along those flight paths, and protection of established noise sharing arrangements for KSA.

SACF believes that further work is required to provide more information and certainty around likely flight paths, including further community consultation. The EIS (Volume 1, page 18) states that *“the proposed flight paths are indicative and a preliminary assessment only”*, limited to conceptual level airspace management design. By far the most significant environmental impact of an airport is the aircraft noise created by the aircraft flying on the flight paths to and from the airport. SACF holds concerns regarding the integrity of a full environmental impact assessment if the analysis of the proposed flight paths has only

progressed to the broad conceptual stage. A detailed analysis of flight paths is essential for the EIS to meet its fundamental legislative requirements. This must be improved so the community can have confidence in the flight paths and the effects of these flight paths can be measured with accuracy.

SACF believes that the necessary information exists for the design of detailed flight paths for Stage 1 and Stage 2 which are more than simply conceptual - runway orientation, aircraft types and fleet mix, navigational and air traffic technologies. Indeed Airservices Australia are currently designing flight paths all around the country with the intention of active operation well beyond the period of operation of Stage 1 development and therefore such work at WSA should be further progressed.

### **Interactions with Sydney Airport Airspace**

The EIS notes that the indicative flight paths for WSA may have an impact on the way Sydney Airport operates, and there may need to be changes to Sydney Airport flight paths to maintain independent operations at both airports to achieve the expected demand capacity. There is a need in the EIS for guiding principles which underpin the concept, purpose and operation of WSA. One guiding principle should be, for example, that the flight paths associated with WSA must not interfere with, or impede, the operation of KSA, noise sharing arrangements and LTOP operations.

Management of airspace conflicts through changes to arrival and departure paths for KSA could limit the ability of KSA to manage noise in accordance with LTOP. SACF is very concerned at any adverse impacts which would limit the ability to use all LTOP operating modes.

The EIS needs to include flight paths that bear sufficient resemblance to predicted future operations that their impact on Sydney Airport and the ability to maintain LTOP can be fully assessed. Indeed, in considering the environmental impacts of the WSA, any potential for changes to flight paths to and from KSA will have a resultant effect on aircraft noise impacts and must therefore be addressed in the WSA EIS. Until detailed analysis which examines airspace design is undertaken, SACF is unable to fully understand the impacts on KSA operations. To ensure the continued operation of both airports and preservation of LTOP for KSA, the WSA airspace design should be a fully integrated basin airspace design, not an airspace design which assesses both airports in isolation of each other. The airspace basin design should address both Stage 1 and Stage 2 of WSA development. Indeed it is recommended that a Working Group be established similar to the LTOP Working Group to guide the development of integrated flight paths for the Sydney basin. This Working Group would have a series of transparent design principles and business rules that would recognize aircraft noise impacts as a major determinant to flight path design.

In addition, there is no consideration of whether the 05/23 runway alignment minimises or resolves potential airspace conflicts. Both 05 and 23 modes of operations involve some conceptual flight tracks to the east which cross existing KSA parallel flight paths from the North (see Volume 1, pages 235-236, Figures 7-8 and 7-9). What is the impact of this, and

how would it be managed? Is there an alternate runway alignment that would be better at avoiding potential airspace conflicts?

Finally in terms of airspace design an explanation is required as to how the airport operates in strong cross winds in the absence of a cross runway. How often would these winds be expected to occur and what is the consequence on KSA if WSA was unable to accept landings due to cross winds exceeding the permitted downwind component for landing aircraft?

### **The use of modelling inputs to generate ANEF (INM v/s AEDT)**

SACF has concerns that the WSA EIS is not depicting noise contours using the latest software. The WSA EIS uses aircraft noise results from the Integrated Noise Model (INM), which is dated and has some known deficiencies. The Federal Aviation Administration in the United States has mandated the use of Aviation Environmental Design Tool (AEDT) for calculating aircraft noise and producing noise contour models. AEDT is acknowledged as being significantly more sophisticated with up-to-date and extensively validated noise profiles. Australian Standard 2021 (AS2021) which provides the standard for the production of the Australian Noise Exposure Forecast (ANEF) and Australian Noise Exposure Concept (ANEC) requires the use of the “*best available modelling process*”. The EIS should detail why the INM was used instead of the AEDT for the noise contours depicted in the EIS as SACF believes the AEDT would better reflect best practice.

### **Alternative Representations of Aircraft Noise**

Experience from both the Third Runway consultations for KSA and more broadly from aircraft noise complaints has shown that noise contours can only provide a partial indicator of the annoyance that aircraft noise creates. This holds true for both ANEF contours and N-contours. As a result it is potentially misleading to rely solely on such contours to explain the noise impacts of the WSA. It is important that the draft EIS acknowledges that annoyance from aircraft noise can come from a range of factors other than how loud or frequent the noise is. Accordingly, information should be provided to identify that some residents in areas that will experience lower levels of noise than reflected in the various contour diagrams may still be affected by aircraft noise.

The use of ANEF contours to describe aircraft noise provides a guide to longer term attitudes to varying levels of noise, but is much less effective in forecasting reactions to changes in noise load. The noise from aircraft operating at WSA will newly affect significant numbers of residents, albeit often at relatively low levels as measured by noise contours. In this situation it is important to avoid creating expectations that the noise will be limited within those contours.

There is significant evidence that aircraft noise annoyance is affected by factors such as expectations, notions of fairness, and an understanding of whether the noise is avoidable. This should be addressed in the draft EIS in the form of explicit acknowledgement of the potential reach of concerns about the noise from the airport, and in providing realistic

indications of how widespread some level of aircraft noise will be, albeit often at low levels when measured by traditional noise contours.

### **Noise Level Scale**

The draft EIS contains a scale (Chapter 10, Volume 2, pg 21) to indicate how loud certain activities are to provide a context for discussion of the loudness of the aircraft noise. It is important to include such a scale. At the same time it is important to be careful about how it will be understood. The scale used shows that 70 dB equates to a passenger car. This can be technically accurate (although the noise of different cars can vary substantially), but it can be misleading given that an aircraft creating 70 dB will sustain that noise level for much longer than a passing car. An aircraft's noise will fall also over a much wider area, including in places where there will be much less background noise than along roads where cars usually pass.

It is also worth noting that it is not helpful to identify 82 dB as equivalent to a modern jet take-off at a distance of 152 metres. This is not an example that members of the general public would normally be able to relate to, particularly given that the general public could not normally get that close to a runway given modern airport security, and the loudness is highly variable depending where in relation to the departing aircraft the hearer is situated. In the accompanying text the reference to typical levels for listening to music at home being 85 dB further suggests that a modern jet is pretty tolerable, which is unlikely to be the majority public experience of jets that fly over at levels registering 85dB.

### **Transfer of Curfew Movements from KSA**

Under the provisions of the *Sydney Airport Curfew Act 1995* services operated by the following aircraft will be required to operate from WSA: freight aircraft (currently using BAe 146 aircraft); propeller driven aircraft less than 34,000kgs and business jets less than 34,000kgs.

### **Community Consultation**

There is the need for communication and consultation with the community to be based on detailed flight paths and accurate prediction of noise impacts, and for this to happen early in the evaluation and development process rather than waiting until the airport construction is almost complete. SACF would encourage this community consultation on an ongoing basis to ensure that the mistakes of the past on community consultation are not repeated in the lead up to WSA commencing operations.

### **Off airport development**

To allow WSA to reach its maximum capacity over the longer term, land and airspace around the airport site needs to be protected from inappropriate development. This can be achieved by ensuring state and local governments adhere to the guidelines that comprise the National Airport Safeguarding Framework (NASF).

The NASF is a national land use planning framework that aims to:

- improve community amenity by minimising aircraft noise-sensitive developments near airports; and,
- improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by the NSW and local governments on various safety-related issues.

It will be particularly important to ensure that the airspace around WSA is protected to allow for the future development of WSA's second runway.

### **Conclusion**

In conclusion, SACF notes the potential for community concern to be generated by the lack of clear and accessible information on aircraft noise, and believes that more needs to be done to ensure that the EIS provides a clear and comprehensive picture of the likely aircraft noise impacts associated with the operation of WSA, in terms that people can easily understand. Aircraft noise is clearly linked to aircraft flight paths, but the EIS only provides what it refers to as 'indicative flight paths', which limits the extent to which the noise impacts of WSA can be assessed. SACF is concerned to ensure that the interaction between WSA and Sydney Airport does not adversely affect the operation of LTOP, and believes that the EIS should include flight paths which accurately reflect projected future operations so that their impact on Sydney Airport and the ability to maintain LTOP can be fully assessed.