



**Perth Airport**  
**2015 Changes to Flights Paths**  
Post Implementation Review Terms of Reference

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# Change Summary

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## **1. Introduction**

In March 2015, Airservices announced three proposals to change air traffic management for Perth Airport. Two of these proposals were implemented in 2015 once environmental assessment and community consultation processes had been completed.

Airservices committed to conduct a review of each change not before 12 months after implementation to ensure that seasonal variation was taken into account

## **2. Change to Runway Preference**

### **2.1 Overview**

Preferred runways are selected by Air Traffic Control as part of the Noise Abatement Procedures at Perth Airport. The nomination of runways is influenced by wind direction, noise abatement procedures and operational requirements. At Perth, operational requirements often preclude use of the existing preferred runways due to the restricted airspace around Perth, particularly to the north, and the locations of terminals on the airport and difficult access to some runways.

Prior to 28 May 2015, Runway 21 (over Guildford) and Runway 24 (over Greenmount) were equally preferred for arrivals, with Runway 21 (over Queens Park) the highest preference runway for departures. This system had been in place since the Noise Abatement Procedures were formalised in 1998.

Following a review of the airport's Noise Abatement Procedures in 2014, Airservices changed the preferred runway configuration as an intended means of providing the best overall noise outcomes for the Perth community.

The change which took effect on 28 May 2015 provides equal preference in the Noise Abatement Procedures for Air Traffic Control to nominate Runways 21 (over Guildford), 24 (over Greenmount) and 03 (over Queens Park) for landing, and equal preference to nominate Runway 21 (over Queens Park), Runway 03 (over Guildford) and Runway 06 (over Greenmount) for take-off.

The change in runway preference aimed to address two issues as follows.

### **2.2 Reflecting Operational Requirement**

Preference for departing aircraft to use Runway 21 (over Queens Park) reflected the history and proximity of housing development surrounding the airport. It also recognised the reality of the prevailing wind direction (southerly component) which facilitates departures from this runway. However, over time the reason Runway 21 was preferred for departures increasingly included the operational requirements of Air Traffic Control during peak traffic periods. The airport's taxiway system as well as the location of aircraft hangars and the domestic and international terminals hinder the smooth flow of aircraft while they are on the ground. This became more of an issue since 2007 as flight schedules increased and runway capacity became constrained accordingly.

The 2014 Noise Abatement Procedures Review identified the preferred runways system as a potential area for improvement. The selection of runways is related to the operational requirements of Air Traffic Control, including the number of aircraft to be managed and weather conditions e.g. wind direction, rain and visibility. This reality did not necessarily align with the former wording of the preferred runways system in the Noise Abatement Procedures. The procedures were, therefore, amended to reflect the

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current operational environment, noting that due to its proximity to nearby residences use of the southern end of the cross runway (arrivals and departures over Redcliffe) is to remain the least preferred option.

## 2.3 Potential Noise Improvement

The 2014 Noise Abatement Procedures Review further noted that Airservices should always consider air traffic management at Perth holistically with a view to implementing the best noise outcome overall; balancing the operational need to meet industry requirements with noise improvements already made and those potentially available.

As a consequence, analysis using data for the 2012 calendar year was undertaken to determine whether a change to the Noise Abatement Procedures could potentially deliver a noise improvement for those communities located nearest to the airport.

The analysis showed the Queens Park and Greenmount runway ends received no benefit from the (then) preferred runway system but would benefit from a change which achieved more arrivals over Queens Park and more departures over Greenmount.

The analysis further showed that Guildford did benefit from the (then) preferred runway system, noting that departing aircraft were approximately 3dBA to 4dBA louder than arrivals for three aircraft types comprising one-third of departures over the area. As a variation of at least 3dBA is normally required for a difference in noise level to be perceptible to the human ear, the difference in noise between arrivals and departures at Guildford is at the lower end of what may be noticeable by the community.

Noting that two areas adjacent to the airport could benefit from a change to the runway preference system and that there was no noticeable noise difference between arrivals and departures at Guildford for two-thirds of the aircraft operating over the area, in 2014 Airservices determined that further consideration of a proposed change was warranted.

While all flight paths to and from Perth Airport have become much busier in recent years predominantly due to the ‘fly-in fly-out’ servicing of the resources sector, the departure corridor to the southwest of the airport along the Swan River has been particularly impacted since 2007 with a tripling of departure flights to mid-2014 (this area does not receive arrival flights). Airservices noted this changing noise impact and that this residential corridor would also benefit from a change to the preferred runway system that achieved fewer departures to the south.

In light of the above, on balance, there appeared to be a reasonable likelihood that residential areas close to the north eastern end of the cross runway (near Greenmount), the southern end of the main runway (near Queens Park) and to the southwest of the airport (along the Swan River) could benefit from the change to the preferred runway system that was implemented in May 2015. While it was anticipated some Guildford residents might notice an increased noise impact from being overflowed by a slightly higher proportion of departures than previously, Airservices noted the net increase of flights over the area was likely to be in the order of one additional flight per day.

## 2.4 Anticipated Effects of the Change

Airservices preliminary analysis of the proposed change to runway preference as outlined above was based on the 2014 Noise Abatement Procedure Review which used 2012 data, being the most recent complete data source at that time. Airservices subsequent environmental assessment of the proposal as presented to the Perth community in March 2015 used 2014 data, and as a result some of the information discussed above changed with an anticipated neutral impact for Greenmount and a slightly increased impact for Guildford. Airservices considered the change in

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impact/benefit was not material and remained likely to achieve an overall noise improvement.

According to the 2015 environmental assessment, the preferred runways change was estimated to reduce the number of nights Runway 21 is used for departures (over Queens Park and to the southwest of the airport) by an average of 25%. For arrivals, equal preference would be given to Runway 21 (over Guildford), Runway 24 (over Greenmount) and Runway 03 (over Queens Park). For departures, equal preference would be given to Runway 21 (over Queens Park), Runway 03 (over Guildford) and Runway 06 (over Greenmount). Arrivals to Runway 06 and departures from Runway 24 (over Redcliffe) would be maintained as being least-preferred.

If this level of reduction in the number of nights were to be achieved, this would result in a total of 124 nights a year with no departures from Runway 21 (over Queens Park and , to the southwest of the airport along the Swan River) on a busy night.

## **2.5 2015 Environmental Assessment Findings**

*(numbers are average estimates only)*

In summary:

- There would be no change to runway use on weekdays from 5 am to 9 pm.
- On average, there may be 40 fewer nights a year aircraft would depart from Runway 21 (over Queens Park and to the southwest of the airport) at night.
- Runway 03 arrivals and Runway 21 departures (Queens Park runway end):
  - During the day on the weekend – there may be 12 more arrivals and 15 fewer departures each day
  - There may be three more arrivals and three fewer departures when this runway is used at night
  - Queens Park is expected to experience no perceptible difference in noise level between arrivals and departures, however there is likely to be a noticeable reduction in noise level in Cannington.
- Runway 03 departures and Runway 21 arrivals (Guildford runway end):
  - During the day on the weekend – there may be 11 more departures and nine fewer arrivals a day
  - There may be two more departures and three fewer arrivals when this runway is used at night
  - There would be a net increase of one additional aircraft a day over the area
  - Departures recorded at the Guildford noise monitor are louder than arrivals by, on average, between 4.4 and 5.4 decibels (dBA).
- Runway 06 departures and Runway 24 arrivals (Greenmount runway end):
  - During the day on the weekend – there may be five more departures and three fewer arrivals a day
  - There may be one more departures and one fewer arrival when this runway is used at night
  - No perceptible difference in noise level between arrivals and departures is expected.

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The proposed preferred runways change would be highly influenced by Air Traffic Control's nomination of runways based on operational requirements due to military airspace restrictions and the limitations of the airport's taxiway and runway access from the terminals. Runway 21 (north-to-south traffic flow on the main runway) is expected to be used at times when there is downwind, particularly during peak departure periods. Air Traffic Control regulations allow a dry runway to be nominated with up to 5 knots of downwind.

There would be occasions when this runway is selected initially as the in-to-wind runway but would continue to be used with downwind during busy periods until the traffic reduced and it would be safe to change the traffic flow.

### **3. Introduction of Smart Tracking**

#### **3.1 Overview**

Airservices is implementing Smart Tracking across Australian airports to enable all approved operators to utilise the benefits that the latest satellite assisted navigation technology provide.

The Smart Tracking flight path introduced in Perth is available to all suitably equipped aircraft arriving from the north and east landing onto Runway 03 (southern end of the main runway). The flight path is located to the east of residential areas in the Perth Hills and an existing arrival flight path from the north in the same general location has been moved to follow the same corridor.

#### **3.2 Anticipated Effects of the Change**

Navigation by traditional means requires the pilot to manually control the rate of descent and often results in extra throttle and levelling out of the aircraft. The Smart Tracking procedure has been designed to allow aircraft to glide to the runway with engines under minimal power with a resulting reduction in noise and a higher, more consistent descent profile.

Due to the movement to the east of the arrival flight path south of Glen Forrest, residents in the areas of Bickley and east of Kalamunda would no longer be overflown and would experience complete respite from aircraft on the existing flight path. They may continue to be impacted by infrequent aircraft not flying on the established arrival route.

The introduction of Smart Tracking reduces the number of flights using the 18km long runway-aligned Instrument Landing System flight path, particularly at night.

#### **3.3 2015 Environmental Assessment Findings**

*(numbers are average estimates only)*

In summary:

- Approximately 1,100 aircraft could use Smart Tracking at night between 10:00pm and 5:00am.
- Due to the slight movement north of the flight path between Gosnells and the airport an increase in L<sub>Amax</sub> noise levels from arriving aircraft by at least 3dBA over Kenwick and Beckenham and a similar reduction in noise over Cannington, Langford and Thornlie is anticipated. These areas already experience similar or greater noise levels from departing aircraft.

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- For the calendar year 2014 there was an average of 53 flights a day overflying the areas likely to be affected by the proposed Smart Tracking arrivals (between Langford and Kenwick). Based on projected Smart Tracking arrivals the proposed change could add 18 flights a day. However, departures from Runway 21 are anticipated to decrease by an estimated 15 movements a day due to the change to preferred runways implemented in May 2015. If so, this would result in a net increase in number of aircraft overflights of 3 flights per day on average.
  - For aircraft arriving from the north, the Smart Tracking approach is shorter in distance by about 20 nautical miles or 37 kilometres, and from the east by about 10 nautical miles or 18 kilometres than the existing approaches used at night and in poor weather via the Instrument Landing System approach. This may represent a saving in aircraft fuel consumption of between 50 – 100kg per flight with a corresponding reduction in CO2 emissions as a result of implementing Smart Tracking.

## 4. Post Implementation Review

The change to runway preference was made on 28 May 2015 and the introduction of Smart Tracking commenced on 17 September 2015.

### 4.1 Terms of Reference

The Post Implementation Review for both changes (separate reports) will have the following structure:

- Objectives of the change
- Summary of the environmental assessment
- Summary of industry and community consultation undertaken
- Operational data
- Community feedback
- Findings
- Conclusion

and will answer the following questions:

- Has this changed the proportion of arrival and departure flights for each runway end?
- If so, what have been the impacts for different areas at night including in terms of night-time respite?
- Which areas have been affected by the change, and what is the nature and degree of that change?
- Has this resulted in an overall noise improvement for the community?
- Have the environmental assessment findings been borne out in practice?

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## **4.2 Timing**

Intended publication of the review reports:

- Runway preference change - by end September 2016
- Introduction of Smart Tracking – by end December 2016