Environmental Assessment

Runway 14 –Runway 14 southern departures trial
Gold Coast Airport

Change Summary

Version	Date	Change Description	Amended by
1	21/11/14	New document	Community Relations
2	17/12/15	For consistency in documents title changed from Runway 14 – APAGI SID re-alignment Gold Coast Airport to Runway 14 – southern departures trial Gold Coast Airport	Community Relations

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Introduction

Aircraft depart Gold Coast Airport in accordance with Standard Instrument Departure (SID) procedures. These procedures are written instructions for the pilot to track according to a series of waypoints (three-dimensional points in the sky) - aircraft speed and climb gradient requirements are usually included.

Some aircraft departing from Runway 14 (to the south) fly over residential areas near the airport, including Banora Point and Chinderah. The proposed change aims to reduce the noise impacts for residents by directing jet departures using the APAGI SID from Runway 14 to the south-west to maximise tracking over the Banora Point Golf Course.

The current and proposed flight paths are shown in Figure 1 below.

Figure 1 – current flight path (blue) and proposed trial flight path (orange).

Assessment

Assumptions

The assessment was based on the following assumptions:

- Aircraft movement data for calendar year 2013
- Proportion of aircraft departures from Runway 14 via the APAGI SID
- Jet aircraft movements only considered

Nominated Aircraft

As shown in Tables 1 and 2 below, there were 13,283 jet departures from Runway 14 in 2013. Of these, 10,228 (77%) followed the APAGI SID heading to destinations to the south and west of the airport (from Sydney across to Perth). The Airbus A320 was the most commonly used jet aircraft type departing from this runway.

Table 1 - Gold Coast Airport Runway 14 departures in 2013

	APAGI	Other SIDs	Total
Total jet departures 203	10,228	3,055	13,283
Percentage	77%	23%	100%
Average/Month	852	255	1,107
Average/Week	197	59	255
Average/Day	28	8	36

Table 2 - Runway 14 most common aircraft type

Aircraft Type	Aircraft Type
Airbus A320	5,948
Boeing B738	4,002
Airbus A321	749
Airbus A332	358
Airbus A333	185

On average, there 36 jet departures a day from Runway 14 per day, 28 used the APAGI SID. The number of flights on the APAGI SID ranged from nil to 60.

How is noise measured?

Noise is measured using A-weighted decibels (dBA) which is a representation of the loudness of sounds in the air as perceived by the human ear.

To measure the maximum sound level of a single noise event, (LAmax) is calculated. This indicates the highest noise level a person on the ground would hear from a single aircraft overflight (arrival or departure).

The noise metrics used in this assessment provide information on the noise of individual over flights and the number of noise events to be considered for all areas situated under a flight path and

the procedure associated with the proposed flight path realignment. It is known that the potential impact of noise upon communities will vary dependent upon land use, with urban areas frequently reporting a higher acceptance of increased noise levels than rural areas-reflecting higher ambient noise levels associated with transport, traffic and other activities.

Airservices has noted that the following threshold values have been observed as reliable indicators of increased community awareness of aircraft noise changes in urban areas, and these have been applied in order to determine 'potential significance' as defined in Section 160 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). These threshold levels have been established by Airservices following consultation with community groups regarding the level at which aircraft noise and/or movement changes are generally noticed by members of the public, and may also be an indicator of community annoyance factors in response to aircraft noise changes.

The change in LAmax noise levels with reference to how people may perceive the sound is outlined below; noting that each individual may experience sound, and perceive changes in noise levels, differently.

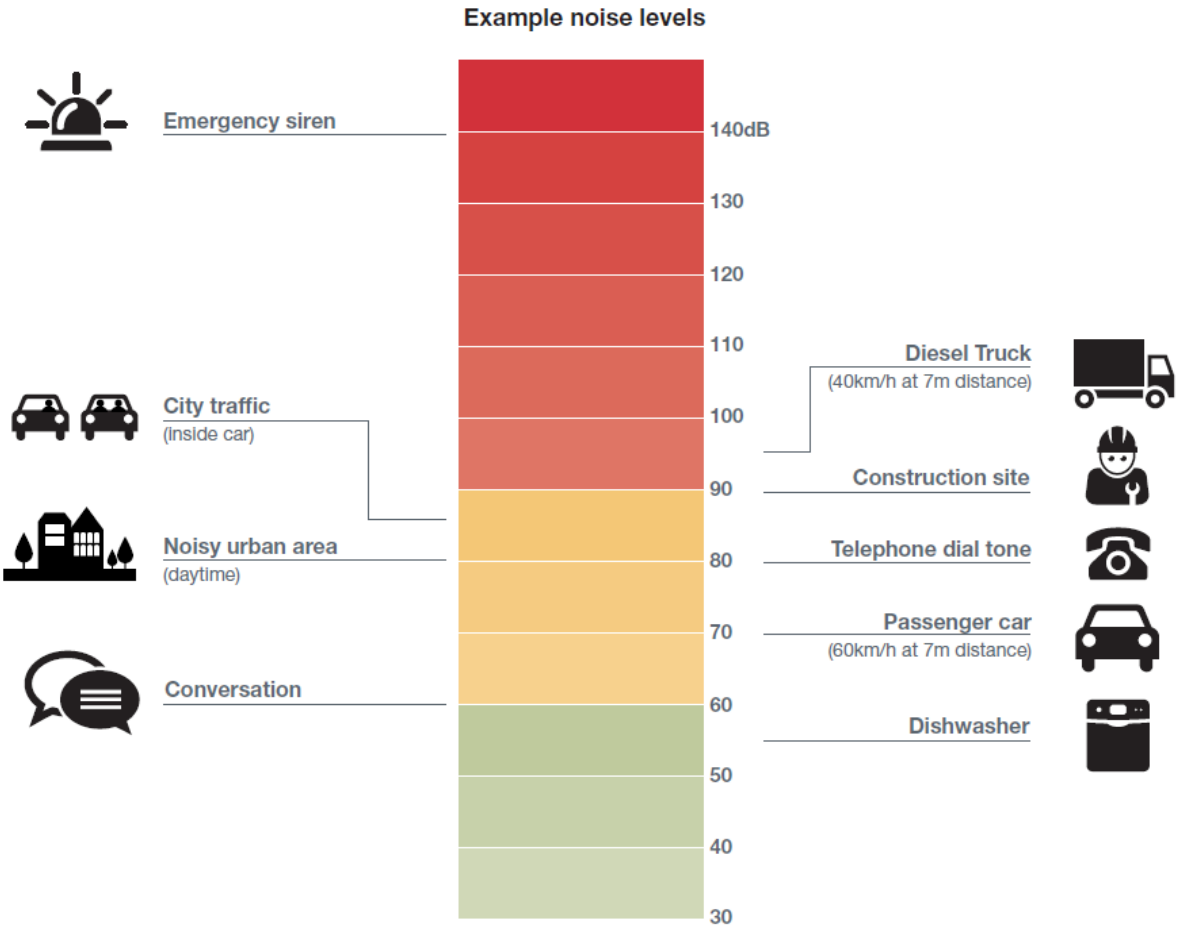
- LAmax noise level changes of up to 3 dBA are not likely to be perceptible
- LAmax noise level changes of between 3 dBA and 5 dB) may be perceptible
- LAmax noise level increases of between 5 dBA and 10 dBA are likely to be perceptible
- LAmax noise levels of greater than 10 dBA may be perceived as twice as loud

For areas receiving a high level (10 or more noise events of 70 dBA or louder per day) of existing over flights:

- An increase by 25% in the number of noise events at or above 70 dBA from 7am-10pm
- An increase by 25% in the number of noise events at or above 60 dBA from 7am-10pm
- An increase by 10% in the number of noise events at or above 60 dBA from 10pm-7am
- Any increase in the number of noise events at or above 70 dBA from 10pm-7am

For areas not receiving a high level (10 or more noise events of 70 dBA or louder per day) of existing aircraft over flights:

- An increase of 10 noise events at or above 70 dBA from 7am-10pm
- An increase of 50 noise events at or above 60 dBA from 7am-10pm
- An increase of 3 noise events at or above 60 dBA from 10pm-7am



Above are some comparisons of sound levels most of us would experience on a regular basis.

Findings

Number of aircraft

There would be no change resulting from this proposal in the number of aircraft using the APAGI SID.

Noise

An analysis of departures has been undertaken; modelling was done for the A320 aircraft type as it is currently the aircraft type most frequently using this departure procedure. Seven reference locations were selected for analysis: five north of the Tweed River (all within Banora Point) and two south of the Tweed River.

The expected change in noise impact for residential areas located north of the Tweed River are minor and are not likely to be noticeable. The change in noise levels for these areas range from nil to +2 dBA as shown in Table 3 below.

For communities south of the Tweed River, it is expected there will be a reduction in aircraft noise at Chinderah. This change is estimated to be a decrease of 5 dBA which will be noticeable.

There may, however, be an increase in the noise level of some aircraft flying over the Stotts Creek area with some aircraft perceived as being twice as loud. This is a rural area which is sparsely populated and used for forestry (sawmill), horticulture and sugar cane production. It is already occasionally overflown by the same aircraft. A different level of noise impact from aircraft may or may not be noticeable and/or considered to be intrusive by the people of this area.

The proposed flight path realignment is likely to result in a reduction in total population exposed to aircraft noise from jet aircraft departing Runway 14. These reductions include a reduction of 500 persons exposed to the 70 dBA noise contour.

Table 3 – Change in noise levels

Location	Before	After	Change
Banora Point (north) (Aveo Retirement Village)	78	79	+1
Banora Point (north) (Cnr Tralee and Darlington Drive)	73	73	nil
Banora Point (south) (Cnr Kildare Drive and Dromara Cct)	71	72	+1
Banora Point (south) (Cnr Old Ferry Rd and Mariners Cct)	70	72	+2
Banora Point (south-west) Cnr Lochlomond Drive and Stonehaven Way)	67	69	+2
Chinderah (Tweed Caravan Park)	69	64	-5
Stotts Creek (Cnr Pacific Hwy and Cudgen Rd)	52	67	+15

Aircraft emissions

There are no additional aircraft emissions resulting from the proposed realignment.

Natural environment

The proposed realignment does not newly expose any areas of natural environment significance to aircraft over flight or noise.

Cultural and heritage values

The Minjungbal People are acknowledged as the traditional custodians of the land overflown by the current and proposed flight path. A cultural and heritage values analysis indicated there would be no cultural or heritage issues resulting from implementing the proposed flight path realignment.

Conclusion

The proposed re-alignment of the Gold Coast APAGI SID from Runway 14 is expected to direct flights away from residents of Chinderah and therefore provides a potential benefit to those residents.

There would be no noticeable difference in noise levels for residents of Banora Point.

More aircraft would be tracking over Stotts Creek, with some perceived as being twice as loud as those using the current flight path which is a small distance to the east of this area. This difference in noise impact is likely to be noticeable. As this is a sparsely populated rural area, more data is required (including from noise monitoring and community feedback analysis) to determine whether the noise change would be considered intrusive and therefore potentially significant under the terms of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).