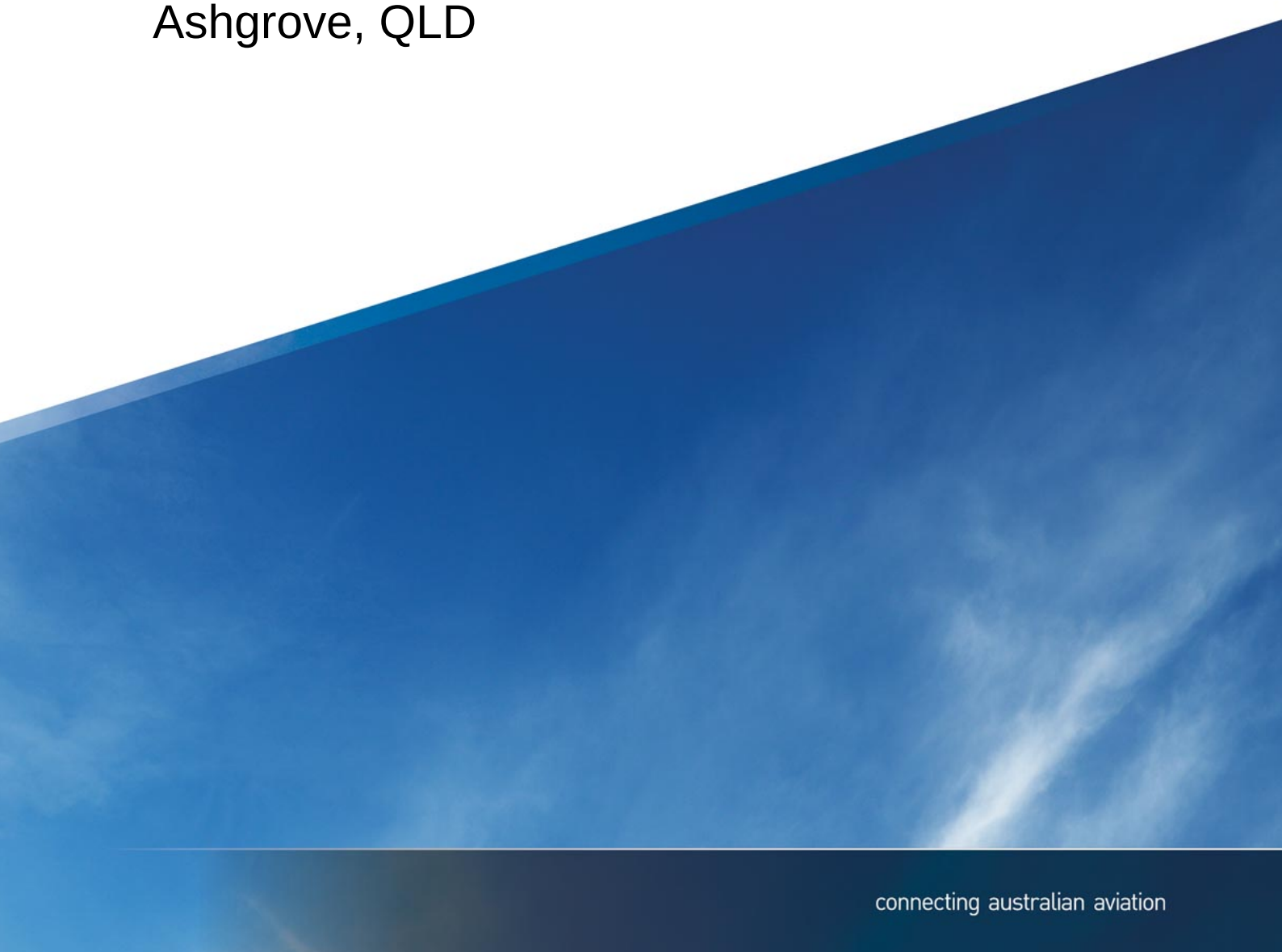
Short Term Monitoring Program

Ashgrove, QLD



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Version Control

Version 2: 19 July 2016	
Section	**Summary**
Pages 4-6	All data regarding CNE decreased, due to identified highest A320 CNE in V1 being confirmed as a community noise event and removed.

Glossary of Terms

A	Arrivals
Background noise level (L90)	The sound level in dB(A) that is exceeded 90% of the time
Correlated Noise Event (CNE)	A noise event correlated to an aircraft operation that flew through the capture zone
Correlation Summary	Percentage of captured aircraft operations correlated with noise events recorded by the noise monitor
D	Departures
Day	6:00am to 11:00pm
EMU	Environmental Monitoring Unit
General Aviation	Operations other than scheduled commercial airline operations. This includes private, sports, charter and training operations.
H	Helicopters
LAmax	Maximum sound level in dB(A)
Local	Operation that departs and arrives at the same airport. Local movements include circuits and training flights.
Movement	An aircraft operation, such as a arrival or departure
Night	11:00 pm to 6:00 am
NFPMS	Noise and Flight Path Monitoring System
Noise Event	A noise that exceeds the threshold sound level for longer than the threshold time that is set
O	Overflight i.e. an aircraft movement that flew over the area but did not arrive or depart from the airport of concern
T	Local operation including Circuits (Departure and Arrival at the same airport)
Threshold	Determined level on noise monitor that triggers a noise event when exceeded

For further information on the metrics used in this report refer to Australian Standard 1055.1–1997 “Acoustics – Description and measurement of environmental noise”.

Airservices Noise Monitoring Program

Information about Airservices noise monitoring program is available on the Airservices website, including reports of the noise and operational data collected by the Noise and Flight Path Monitoring System, as well as fact sheets about topics related to aircraft noise. The website is available at: www.airservicesaustralia.com/aircraftnoise/

Contact Us

To lodge a complaint or make an enquiry about aircraft operations;
you can go to WebTrak (www.airservicesaustralia.com/aircraftnoise/webtrak/),
use our online form (www.airservicesaustralia.com/aircraftnoise/about-making-a-complaint/),
telephone 1800 802 584 (freecall) or 1300 302 240 (local call –Sydney),
fax (02) 9556 6641, or write to Noise Complaints and Information Service, PO Box 211, Mascot ACT 1460.

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Deployment Purpose

Short term noise monitoring was conducted at Ashgrove to provide the community with information on noise levels, as well as to support internal studies.

The purpose of this report is to provide a technical summary of the recorded aircraft noise and operational data collected at Ashgrove between October 2015 and January 2016.

An explanation of terms used within this report can be found in the Glossary on page 2 of the report.

Deployment Monitoring Period

12/10/15 12:00 am – 11/01/2016 12:00 am

Environmental Monitoring Unit (EMU) Details

Location	Private Residence, Willmington Street, Ashgrove QLD
Latitude	27° 26' 6.13"S
Longitude	153° 0' 8.33"E
EMU Altitude	128 ft above mean sea level
Capture Zone	2.5 km radius with 12,000 ft (above ground level) height for noise data capture
Threshold Settings	52.0 dB(A) to 58.0 dB(A) depending on time of day

Ashgrove Findings

- The noise monitor was located in Ashgrove 12km to the north-west of Brisbane airport.

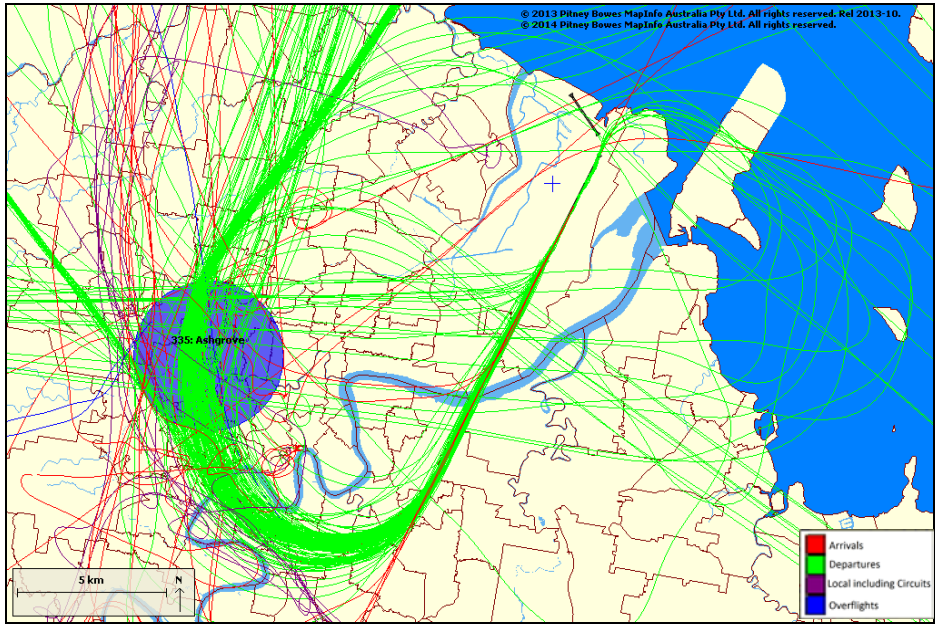

FIGURE 1: OPERATIONS THAT TRAVERSED ASHGROVE BETWEEN 08/11/2015 - 11/11/2015, INCLUDING CAPTURE ZONE (BLUE CIRCLE)

- 4,939 movements flew through the capture zone during the reporting period. 4,262 of these were Brisbane Airport operations.
- 67% of total operations that flew through the capture zone (as shown in figure 2) were Runway 19 Departure operations.
- A summary of the total number of Correlated Noise Events (CNE) by time of day, and the minimum to maximum number of CNE in a day, are summarised within Table 1.

TABLE 1: SUMMARY OF CORRELATED NOISE EVENTS BY TIME OF DAY AND MINIMUM TO MAXIMUM RANGE OF OCCURRENCES, FOR THE ASHGROVE ENVIRONMENTAL MONITORING UNIT (335)

Correlated Noise Events (CNE) over the Reporting Period:	**Day** *(6:00am to 11:00pm)*	**Night** *(11:00 pm to 6:00 am)*	**Number of Correlated Noise Events per day** *(min to max)*
above 60 dB(A) *(N60)*	2,367	48	0 to 70
above 65 dB(A) *(N65)*	1,397	27	0 to 48
above 70 dB(A) *(N70)*	199	8	0 to 9
above 75 dB(A) *(N75)*	28	2	0 to 2

- Correlated noise events above 60 dB(A) were most common during the hours of 8:00am and 9:00am on weekends.
- The loudest correlated aircraft noise event with a max level of 79.3 dB(A) was an Antonov AN12, departing from Runway 19.

Events as high as a max level of 90.2 dB(A) were recorded during the reporting period however these are not correlated to any aircraft operations, where community noise is believed to be either a contributing factor or responsible for these events. Community activities including construction, mowing and traffic can cause such events to be recorded on the monitor.

TABLE 2: TOP 10 MOST CORRELATED AIRCRAFT TYPES OVER THE ASHGROVE ENVIRONMENTAL MONITORING UNIT

Aircraft Type	Airport	Operation Type	RWY	No. Correlated Noise Events	LAmax dB(A)	
					Average	Maximum
Boeing 737-800 (J)	Brisbane	D	19	1047	65.7	76.4
Airbus A320 (J)	Brisbane	D	19	349	63.6	71.2
Embraer ERJ-190/195 (J)	Brisbane	D	19	233	65.5	73.1
Airbus A330-300 (J)	Brisbane	D	19	90	69.4	78
Airbus A380-800 (J)	Brisbane	D	19	56	67.4	78.5
Boeing 717-200 (J)	Brisbane	D	19	47	63.5	76.8
Boeing 737-300 (J)	Brisbane	D	19	45	67.1	72.1
DHC Dash 8D (T)	Brisbane	A	01	45	64.2	70
Boeing 777-300ER(J)	Brisbane	D	19	36	68.2	74.1
Robinson R44 (H)	Redcliffe	T	H	35	64.8	74.6

Aircraft Category: Jet (J), Turboprop (T), Propeller (P), Helicopter (H), Unknown (U)
Operation Type: Arrival (A), Departure (D), Local Operation including Circuits (T), Overflight (O)

- The correlation summary for all movements was 50%. This is a lower correlation than the fixed Environmental Monitoring Units in Brisbane.

A lower correlation percentage at this location was expected, as a large number of the operation passing over the EMU were on an extended flightpath departing to the south-west of Brisbane Airport and then turning east and passing over the EMU. The target operations at this location were those departing from Brisbane Airport in a direct path to the EMU.

Current technological limitations mean that the Noise and Flight Path Monitoring System (NFPMS) must first have a noise event which it identifies could be aircraft noise. Noise from aircraft which is within or similar to community noise cannot be separated, including aircraft with a lower noise level than community noise or when there is an increase in community noise such as from sirens, traffic or loud conversations. In the future, it is anticipated that noise monitoring systems will be able to specifically identify community noise such as a dog barking and also look for noise events, when an aircraft is within the capture zone.

Figure 2 below is intended to support understanding of the noise monitor settings and monitoring limitations.

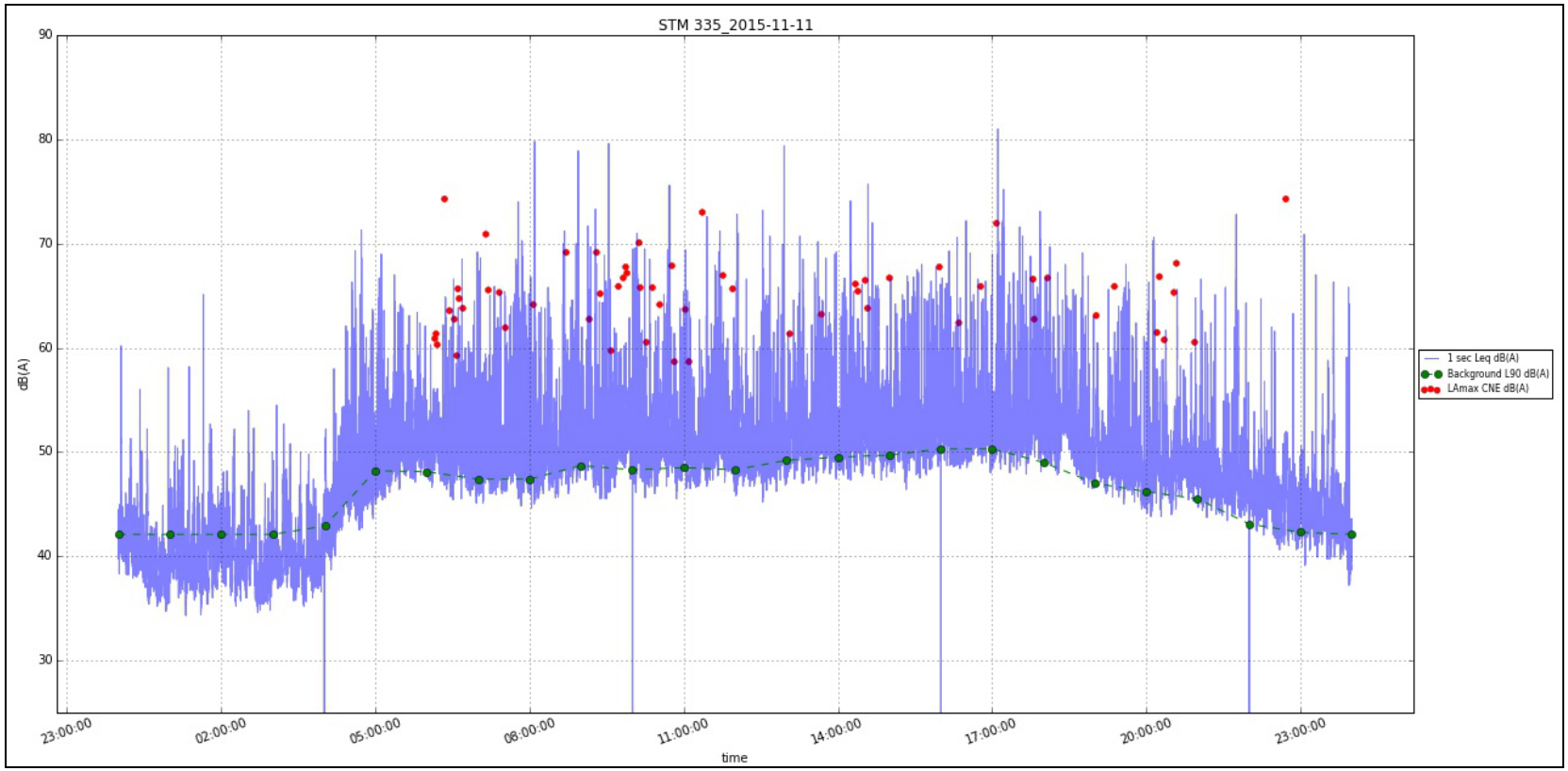

FIGURE 2: ASHGROVE 1 SECOND NOISE DATA AND LAMAX'S OF CORRELATED AIRCRAFT NOISE EVENTS FOR 11/11/2015

Figure 2 shows 24-hour of noise data from EMU 335 for a day during the monitoring period. Correlated noise events (6 to 120 seconds in length) are removed from the daily noise data, with only the point of LAmax shown in red. The background level (L90) is also shown as points representing the hourly average for this day.

This allows for comparison of noise contributions from community activities to correlated aircraft noise contributions, at the EMU location. Figure 2 shows that a proportion of noise events are above as well as within the noise made by community activity. Any uncorrelated operations would also be within the noise data.