

Melbourne Basin

Aircraft Noise Information Report

Quarter 1 2016 (January to March)

Version Control

Version Number	Detail	Prepared by	Date
1	-	Environment	May 2016

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This report contains a summary of data collected over the specified period and is intended to convey the best information available from the NFPMS at the time. The system databases are to some extent dependent upon external sources and errors may occur. All care is taken in preparation of the report but its complete accuracy cannot be guaranteed. Airservices Australia does not accept any legal liability for any losses arising from reliance upon data in this report which may be found to be inaccurate.

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1 Purpose

This report summarises data for Quarter 1 of 2016 (January to March) from Airservices Noise and Flight Path Monitoring System (NFPMS) and Noise Complaints and Information Service (NCIS) for the Melbourne basin (including Melbourne, Essendon, Moorabbin and Avalon airports) as well as some other sources (such as the Airservices Flight Charging System).

1.1 Melbourne Airport

Melbourne Airport is located around 20km north east of the central business district. It is bounded by residential areas to the east, south and west. To the north of the airport is the township of Bulla. The majority of operations at Melbourne Airport are international and domestic regular passenger services, mostly medium to large jets. During Quarter 1 of 2016 there were over 59,100 operations at Melbourne Airport. More information about Melbourne Airport is available from the Airservices website at www.airservicesaustralia.com/aircraftnoise/airport-information/.

1.2 Essendon Airport

Essendon Airport is located between the city centre and Melbourne Airport, approximately 11km north west of the central business district. It is surrounded by residential developments. The majority of operations involve smaller general aviation which includes corporate jets and emergency helicopters. Circuit training is not conducted at Essendon Airport. A legislated curfew at Essendon Airport limits operations between 11.00pm and 6.00am. During Quarter 1 of 2016 there were approximately 9,300 operations at Essendon Airport. More information about Essendon Airport is available from the Airservices website at www.airservicesaustralia.com/aircraftnoise/airport-information/.

1.3 Moorabbin Airport

Moorabbin Airport is located a little over 20km south east of the central business district. It is bounded by residential areas on all sides. The majority of operations at Moorabbin Airport are smaller general aviation aircraft. Pilot training is conducted at Moorabbin Airport which involves a significant number of circuit operations. Information about circuit training is available on the Airservices website at http://www.airservicesaustralia.com/wp-content/uploads/12-039FAC_NCIS-Circuit-training_WEB.pdf and more information about Moorabbin Airport is available from the Airservices website at www.airservicesaustralia.com/aircraftnoise/airport-information/.

1.4 Avalon Airport

Avalon Airport is located 50km south-west of the central business district. It is on the eastern edge of the city of Geelong. Residential areas are to the west of the Airport. To the south is Geelong Harbour. The majority of operations are Regular Passenger Transport (RPT) involving a mixture of narrow body and wide body jet aircraft.

1.5 Aircraft noise monitoring in Melbourne

Airservices NFPMS captures and stores radar, flight plan and noise data. The NFPMS covers eight city regions around Australia. For the Melbourne region, noise data is captured by six noise monitors - also known as Environmental Monitoring Units (EMUs) - located around Melbourne Airport at: Bulla, Keilor East, Essendon, Coolaroo, Thomastown and Keilor Village.

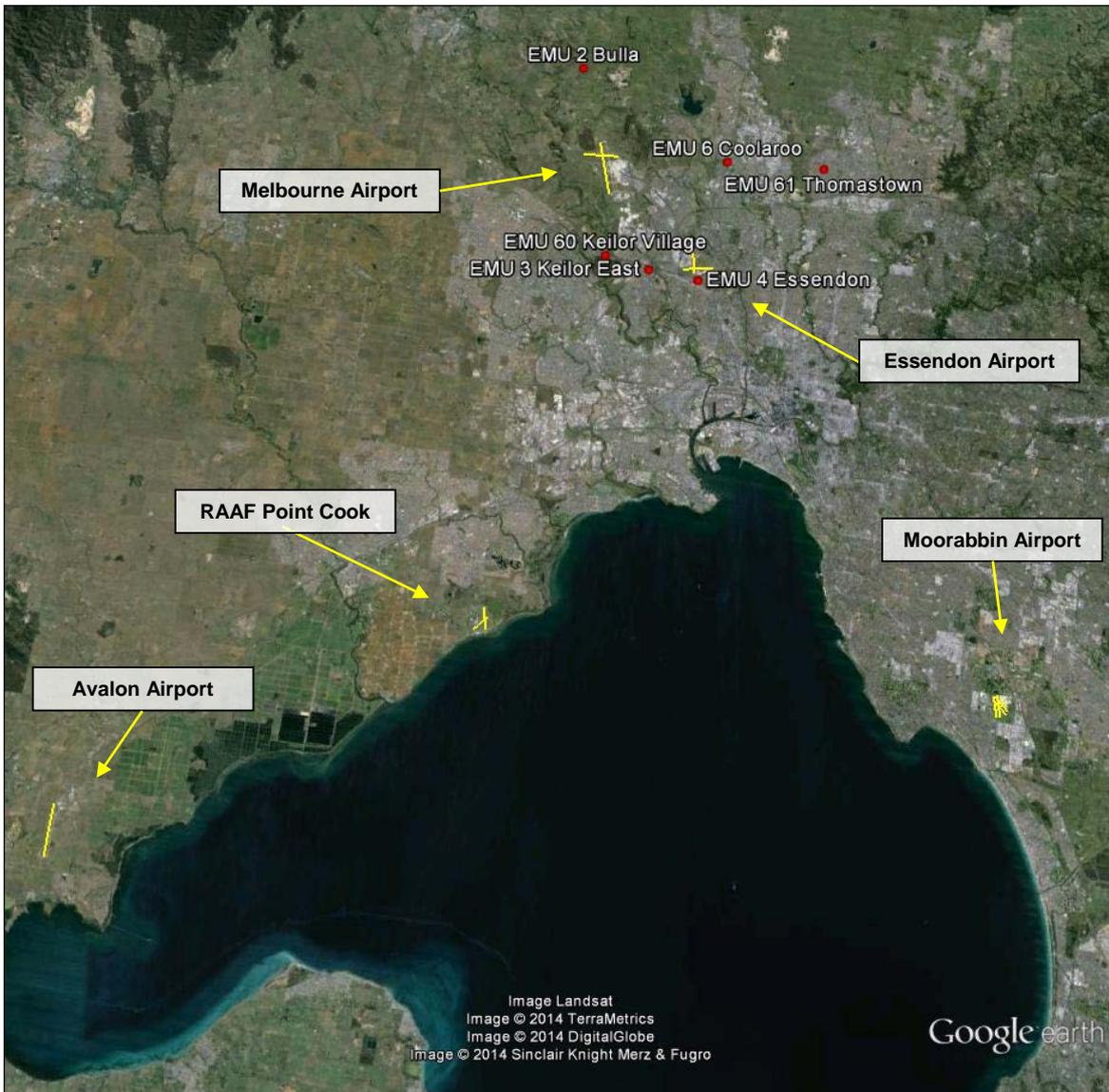


Figure 1: Location of Melbourne, Essendon, Avalon and Moorabbin airports. (Noise monitoring sites are shown as red dots). The location of RAAF Point Cook airfield is also shown.



Figure 2: Runway orientation for Melbourne, Essendon, Avalon, Moorabbin and RAAF Point Cook airports.

Figure 2 shows runway configurations at Melbourne, Essendon, Moorabbin and Avalon airports. Also shown is RAAF airfield Point Cook.

The main runway at Melbourne Airport, 16/34 is 3.7 km long, orientated north-south. There is a smaller 2.3 km long cross runway, 09/27, orientated east-west.

At Essendon Airport there are two intersecting runways, a 1.6 km north-south runway 17/35 and a 1.9 km east-west runway 08/26.

Moorabbin Airport has 2 parallel runways aligned north-south (35L-17R and 35R-17L) and another set of 2 parallel runways orientated north-east to south-west (31L-13R and 31R-13L). These are of

a similar length, 0.8-0.9 km. There is a fifth runway which is shorter (0.5km), aligned south east to north west (04-22).

Avalon Airport has a single runway of length 3.0 km aligned north-south (18-36).

Information about runway selection is available on the Airservices website at www.airservicesaustralia.com/aircraftnoise/factsheets/.

2 Flight patterns

2.1 Jet aircraft

Figure 3 and Figure 4 below shows jet aircraft track plots for arrivals and departures in the Melbourne basin. Noise monitors (EMUs) are shown as yellow circles.

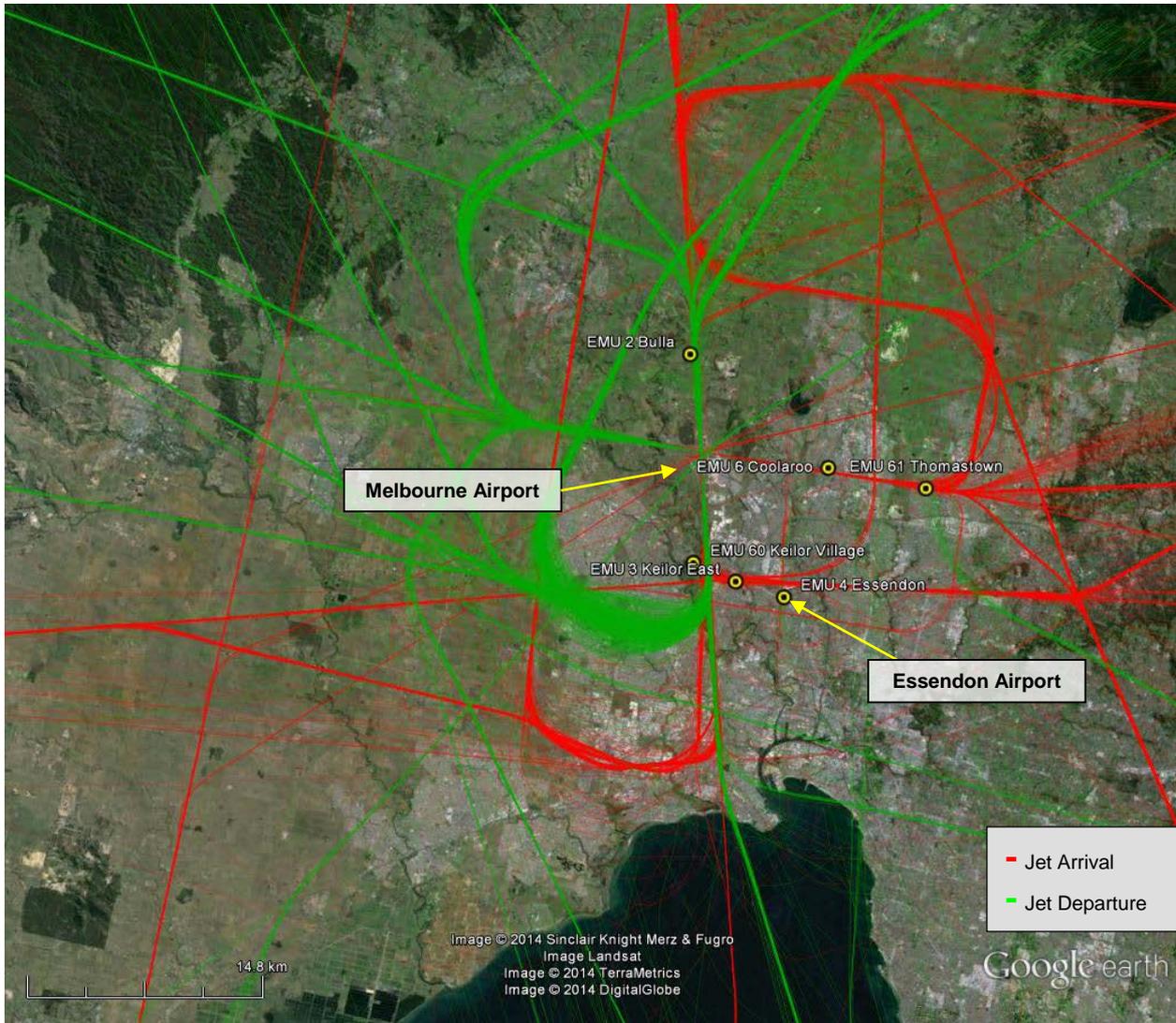


Figure 3: Jet paths for the Melbourne basin

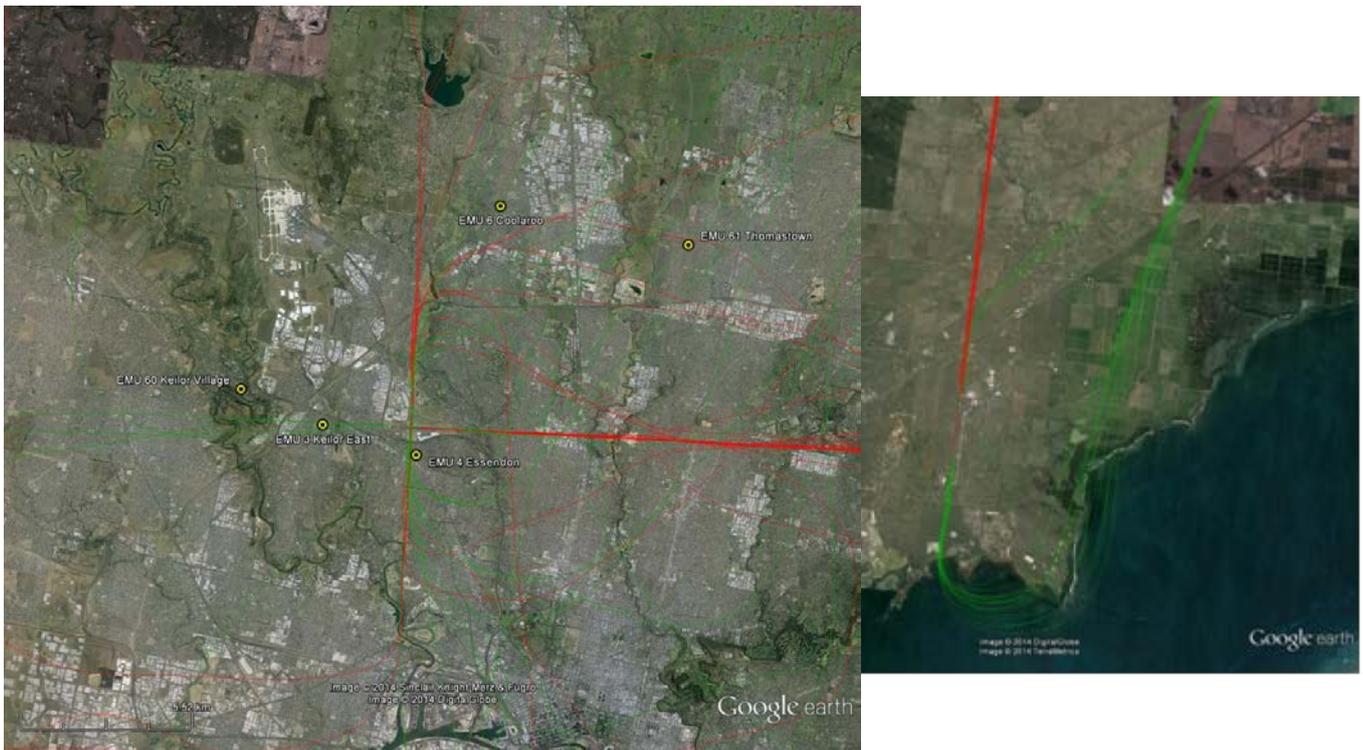


Figure 4: Jet paths for Melbourne basin, zoomed in on Essendon (left) and Avalon (right) airports.

Key points shown in Figure 3 and Figure 4 are:

- The vast the majority of jet traffic occurs at Melbourne Airport. These are mostly regular public transport (RPT) operations involving medium to large jets.
- A small number of wide and large body jets also operate out of Avalon Airport, with business and corporate jets operating out of Essendon Airport and Moorabbin Airport.
- Jet arrivals into Melbourne Airport are mainly from the east, south or north, in roughly equal numbers. They are generally aligned with the runways at least 10km from the airport. This means that suburbs to the east and south of the airport are overflown by arriving jets.
- Jets departing can deviate from the straight line much earlier than arriving jets. Around half of all departures from Melbourne Airport are to the west, largely avoiding residential areas. The remainder are split fairly evenly between those to the north (which also generally avoid residential areas) and those to the south, which overfly suburbs.
- For Avalon Airport the majority of jet arrivals occur either over rural areas or the bay.

2.2 Non jet aircraft

Figure 5 shows non jet tracks (arrivals and departures) in the Melbourne basin. Noise monitors (EMUs) are shown as yellow circles.

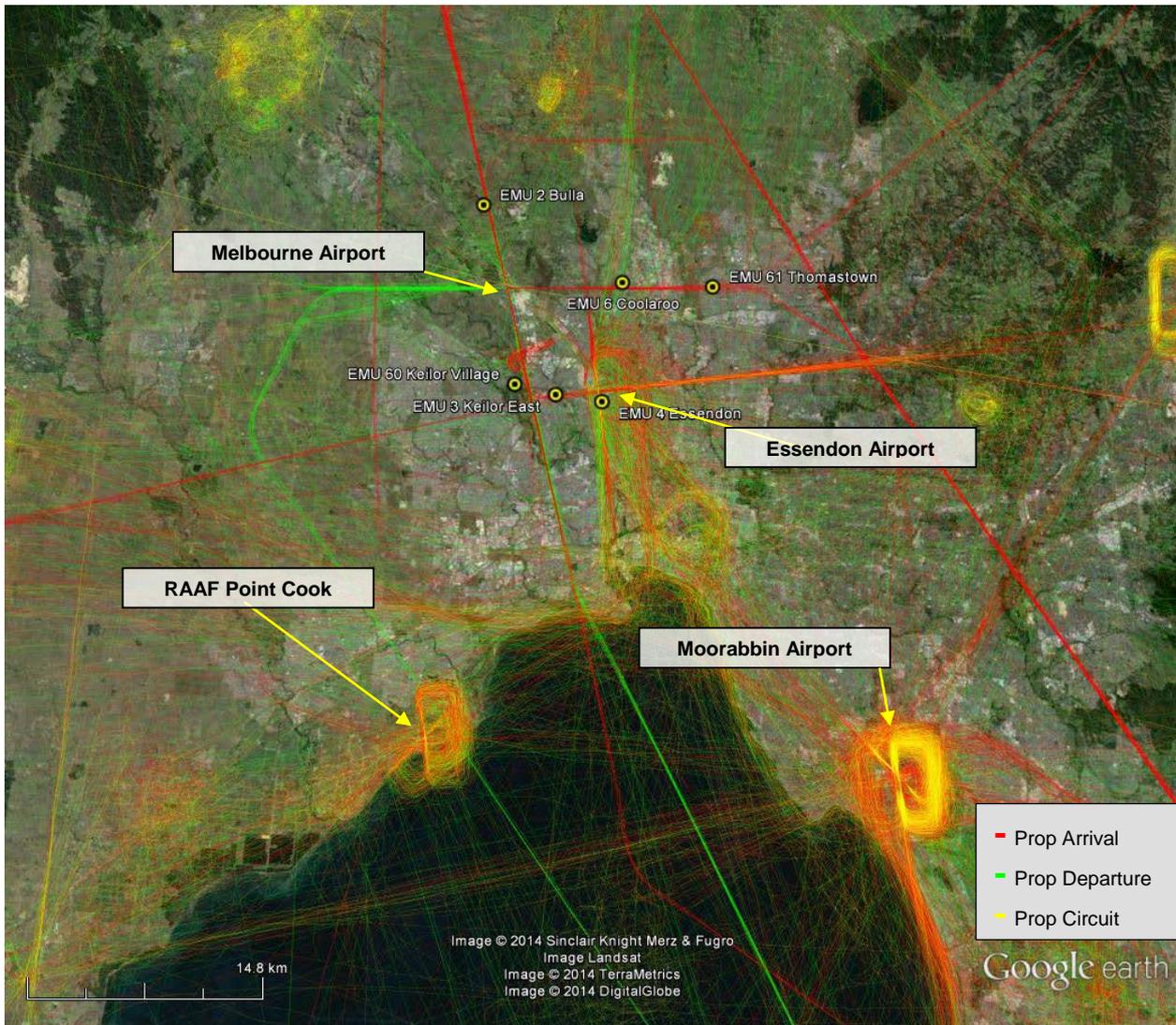


Figure 5: Non-jet flight paths for the Melbourne region

Key points shown in Figure 5 are:

- It is clear that although jet aircraft tend to operate along defined paths, when smaller aircraft are included on the map, there are very few areas of the Melbourne basin that are not overflowed by aircraft at some stage.
- The circuit patterns (training aircraft) at Moorabbin Airport, Point Cook and Lilydale Airport (40km east of the CBD) are visible as red/ orange rings.

3 Aircraft Movements and Altitude

3.1 Jet Arrivals / Departures by Altitude

Figure 6 below shows jet aircraft track plots for arrivals and departures within the Melbourne basin coloured by altitude. Noise monitors (EMUs) are shown as grey circles.

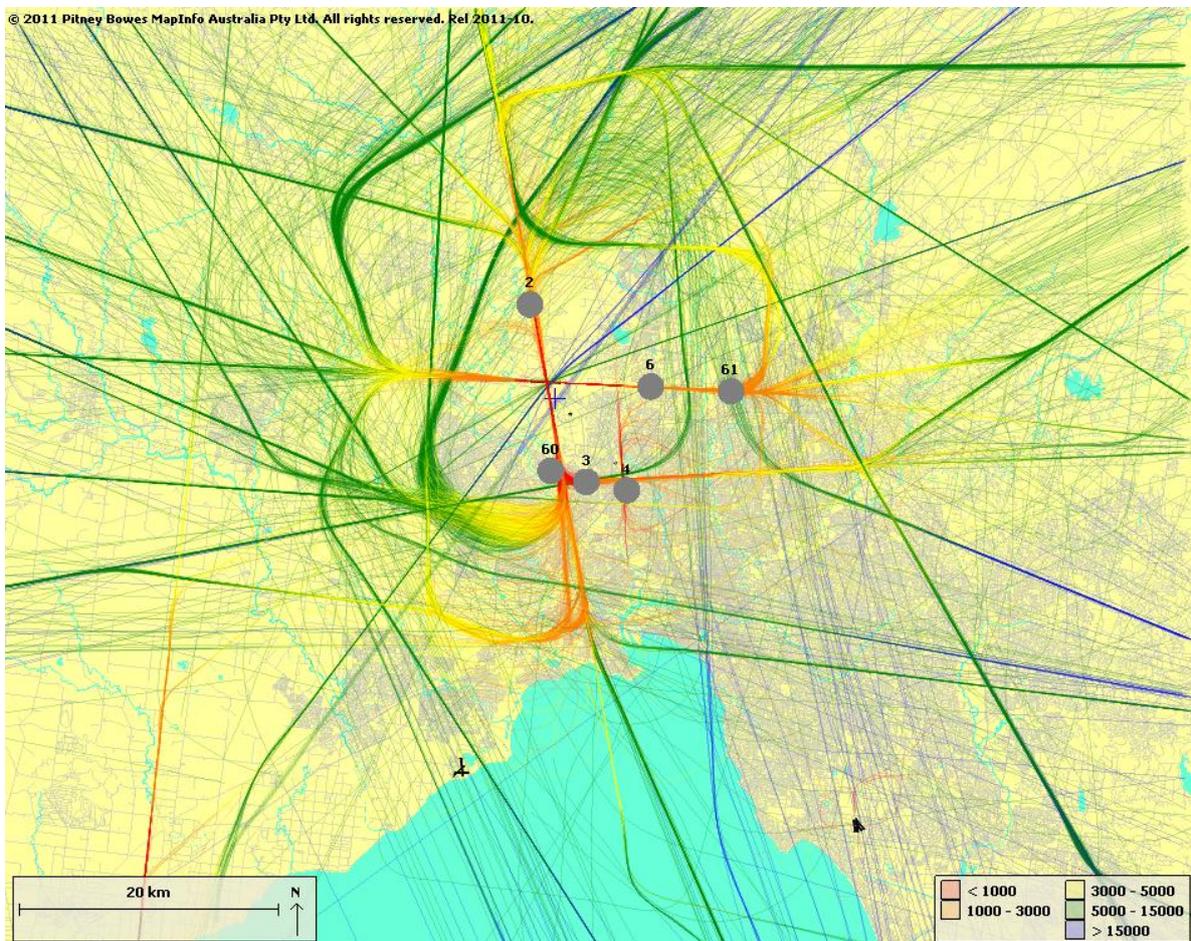


Figure 6: Jet arrivals and departures for the Melbourne basin

Key points shown in Figure 6 are:

- Jet arrivals to Melbourne Airport from the south tend to overfly residential areas at altitudes between 1,000 feet and 3,000 feet.
- Jet departures to the south tend to overfly residential areas at higher altitudes, between 3,000 feet and 5,000 feet.
- Jet arrivals from the east tend to overfly residential areas at altitudes between 1 000 feet and 3,000 feet.
- Note that a clear path for arrivals from the north-east to Avalon Airport is shown overflying Melbourne Airport at high altitude.

3.2 Non-Jet Arrival / Departures by Altitudes

Figure 7 below shows non jet tracks (arrivals and departures) for the Melbourne basin coloured by altitude. Noise monitors (EMUs) are shown as grey circles.

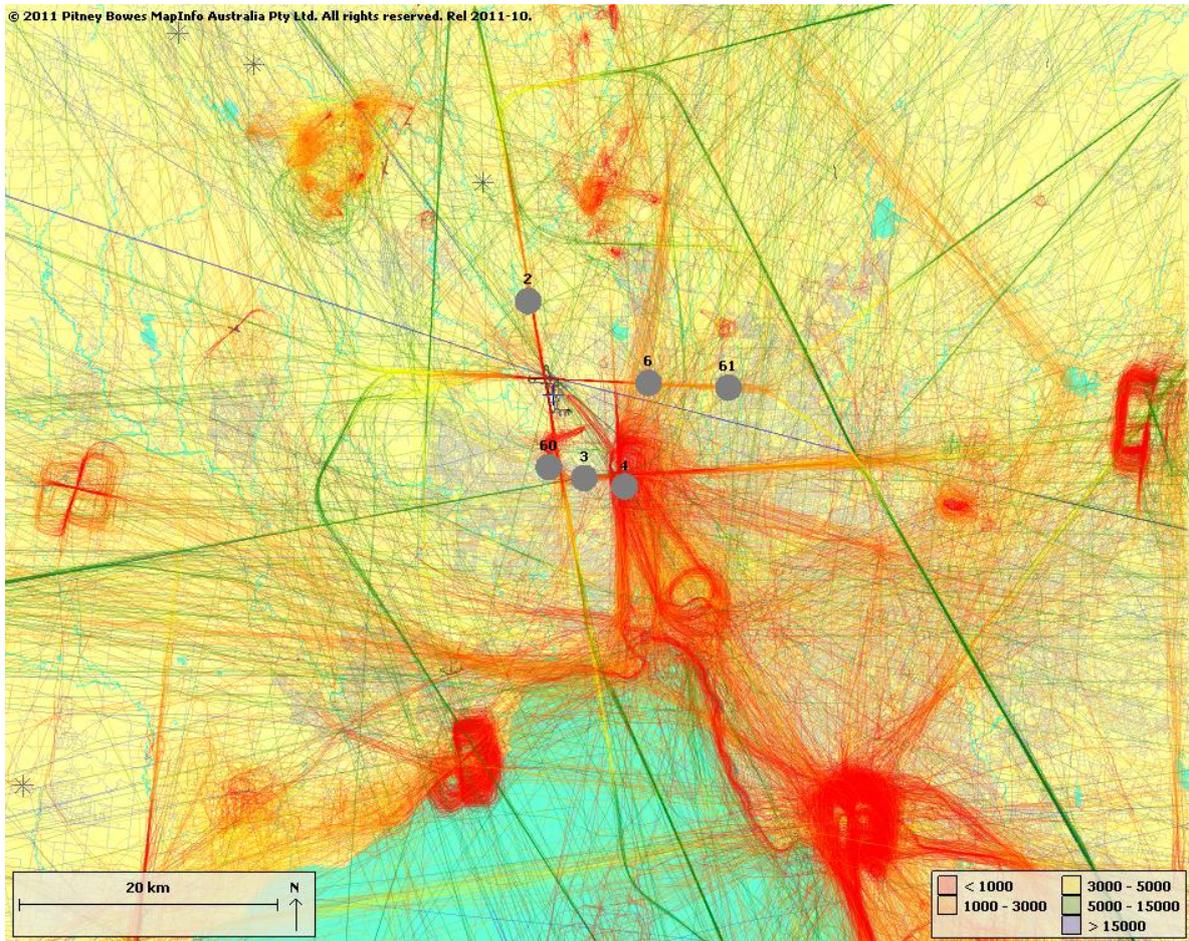


Figure 7: Non jet arrivals and departures for the Melbourne region
Note the altitude of Melbourne Airport is 377 feet above mean sea level (AMSL).

Key points shown in Figure 7 are:

- The circuit training aircraft at Moorabbin Airport, Point Cook and Lilydale Airport generally maintain a height of around 1,000 feet (in line with Civil Aviation Safety Authority height requirements for circuit operations).
- Propeller aircraft out of Melbourne Airport generally operate at a higher altitude (above 5,000 feet) than those for other airports.
- There is a clear path from Essendon Airport to the CBD and back again. This is a mixture of emergency service aircraft, ‘utility’ aircraft (such as the traffic helicopters) and sightseeing operations.
- All altitudes in the Melbourne Basin are calculated from Melbourne Airport. While Melbourne Airport is 377 feet above AMSL, the CBD is at AMSL. Figure 8 shows operations relative to sea-level where blue operations are above 1,000 feet (in line with Civil Aviation Safety Authority height requirements) and those below 1,000 feet are in red.

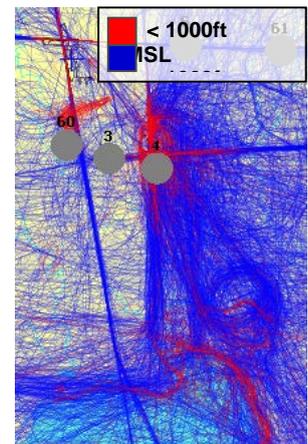


Figure 8: Non-jet arrivals and departures with altitude relative to AMSL, zoomed in on the CBD-Essendon track

3.3 Track density plots

The track plots above show that residents living up to 15km from the airports and in line with Melbourne Airport's runways are regularly overflowed by jet aircraft below 5,000 feet. However, beyond this the regularity of flight path use is not discernible from the track plot display. A track density plot can be useful in showing the underlying track patterns.

A track density plot is a map which displays the pattern of aircraft flight tracks passing over the region around the airport. The region is divided into a set of small grid elements and the number of flights passing over each grid element is summed. Each grid element is coloured according to the number of overflights.

Figure 9 shows a track density plot for all movements over the Melbourne Basin for Quarter 1 of 2016. The grid size adopted is 200m x 200m. The colour coding from green to red represents the range two flight tracks per day to 20 (182 to 1820 flight tracks for the quarter). If any grid element is not colour coded, the number of aircraft flight tracks passing over that element during the quarter was less than 2 per day on average. The absence of a colour for a grid element does not mean the grid element is free of aircraft overflights. The grey circles show the location of each noise monitor (EMU).



Figure 9: Track density plot for the Melbourne region, Quarter 1 of 2016

Key points shown in Figure 9 are:

- The most commonly used flight paths in Quarter 1 of 2016 were those arriving from the north to Melbourne Airport and taking off to the west.
- The route from Essendon Airport to the CBD and back again was also heavily used in Quarter 1 of 2016.

4 Airport Statistics and Noise Events

4.1 Melbourne Airport

Figure 10 shows aircraft movements at Melbourne Airport for the 12-month period to the end of Quarter 1 of 2016 (and three-year averages for each month).

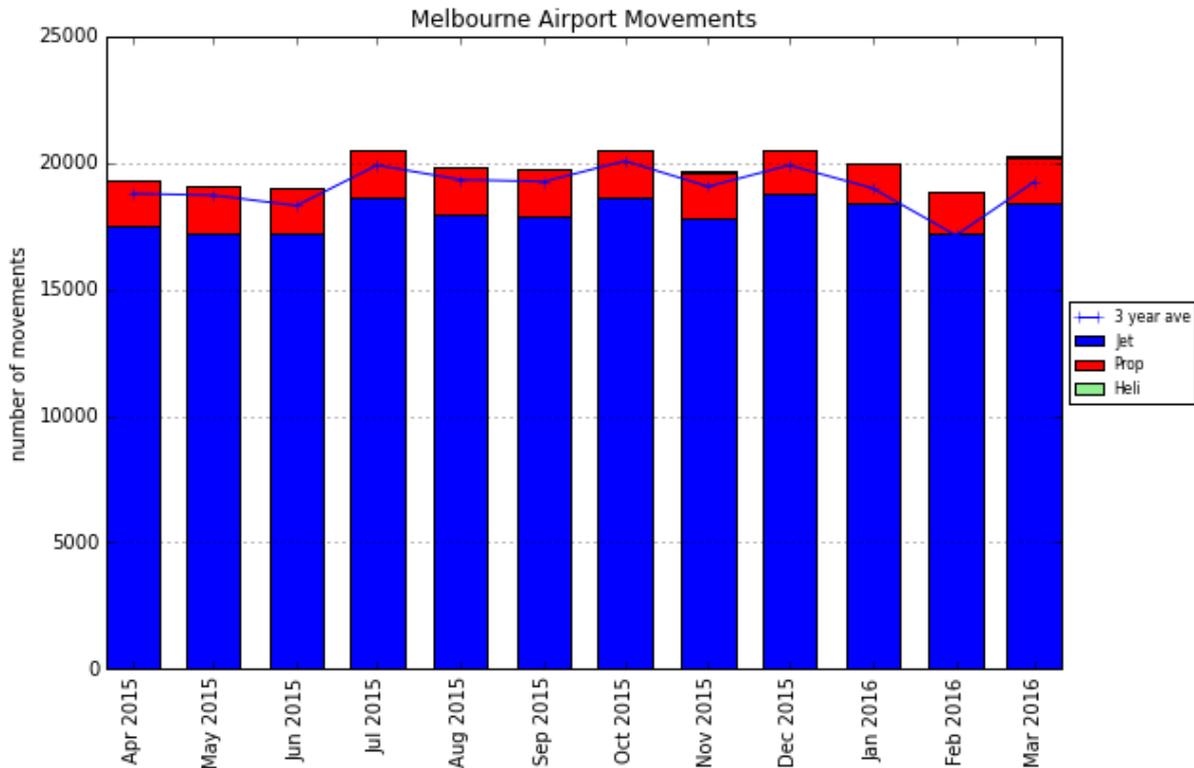


Figure 10: Aircraft movements at Melbourne Airport to Quarter 1 of 2016

Key points are:

- Movements at Melbourne Airport have remained between 18,000 and 20,000 per month for Quarter 1 of 2016. This is above the three-year average.
- Of these, around 90 per cent are jet movements and 10 per cent propeller operations, with very few helicopter movements (less than 0.1 per cent of all operations).

4.1.1 Runway Usage

Figure 11, Figure 12 and Figure 13 below show aspects of runway usage for arrivals and departures at Melbourne Airport for the year up to the end of Quarter 1 of 2016 (and three-year average per month).

Runway selection is based on wind direction and weather conditions, traffic volume and Noise Abatement Procedures. Aircraft primarily take off and land into the wind for safety and performance reasons. Therefore, as the wind direction changes the runway in operation may also change depending on the strength of the wind.

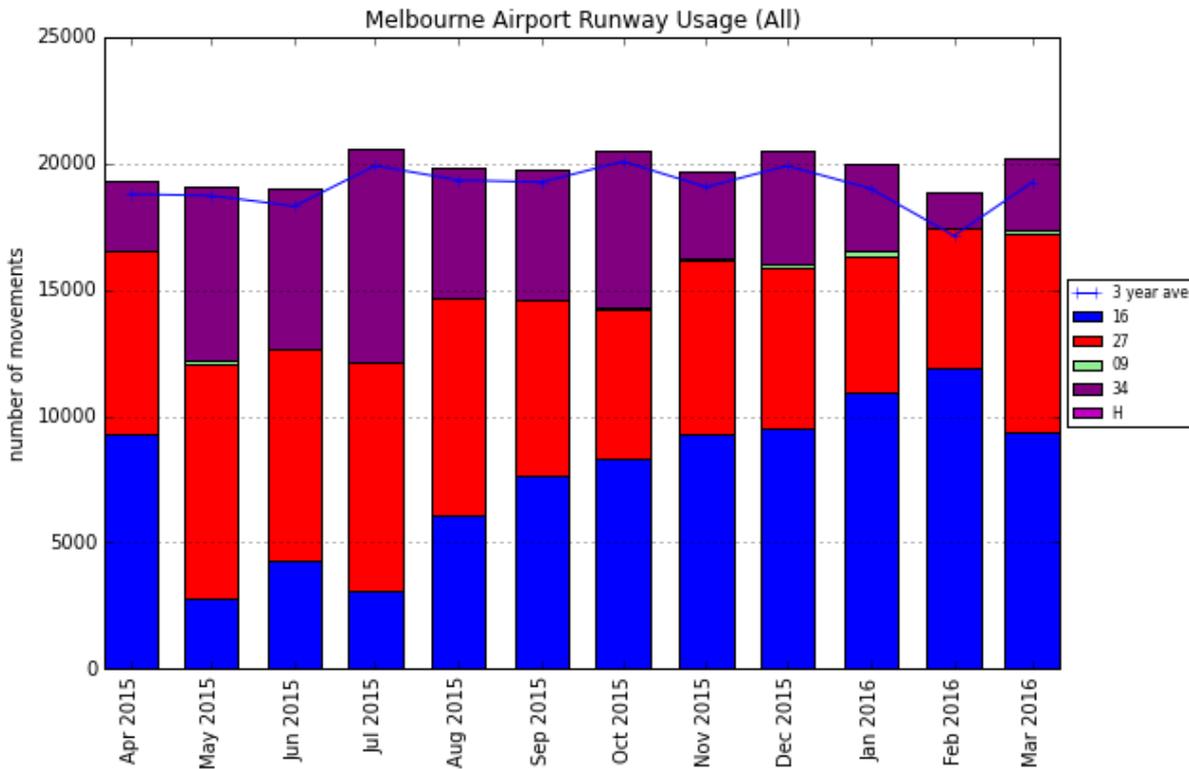


Figure 11: Runway usage (All) at Melbourne Airport to Quarter 1 of 2016

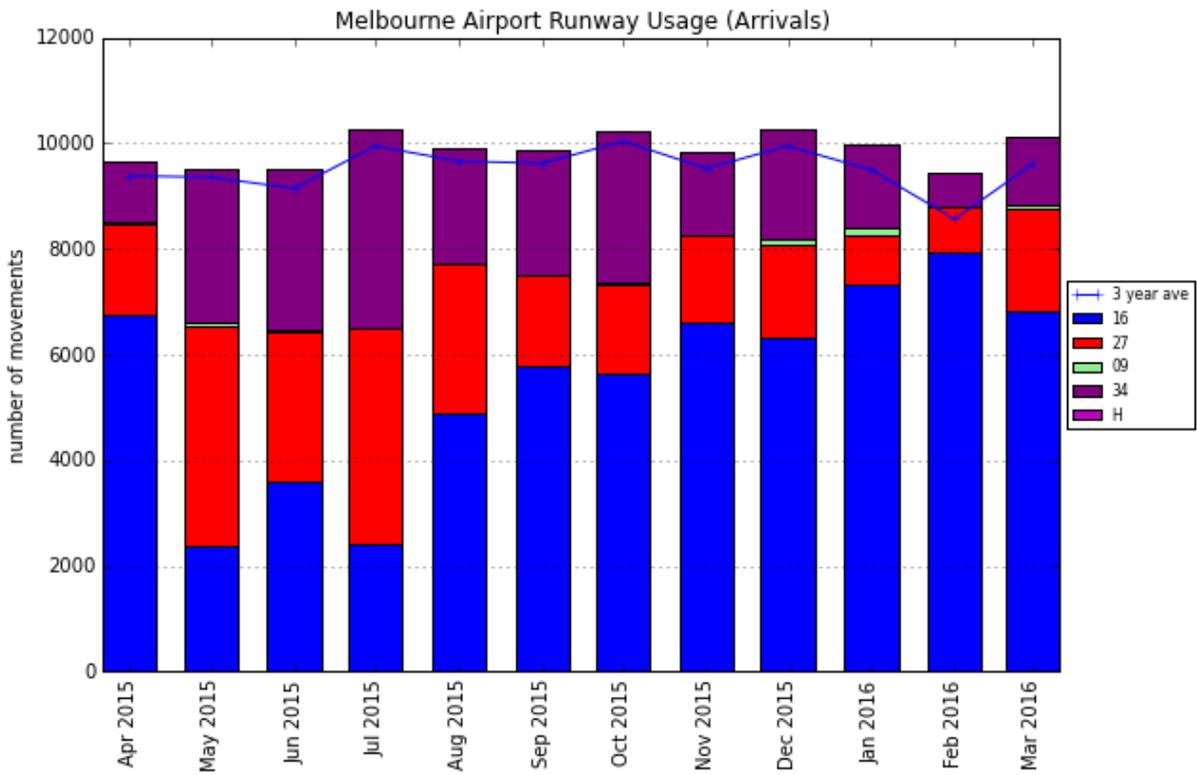


Figure 12: Runway usage (Arrivals) at Melbourne Airport to Quarter 1 of 2016

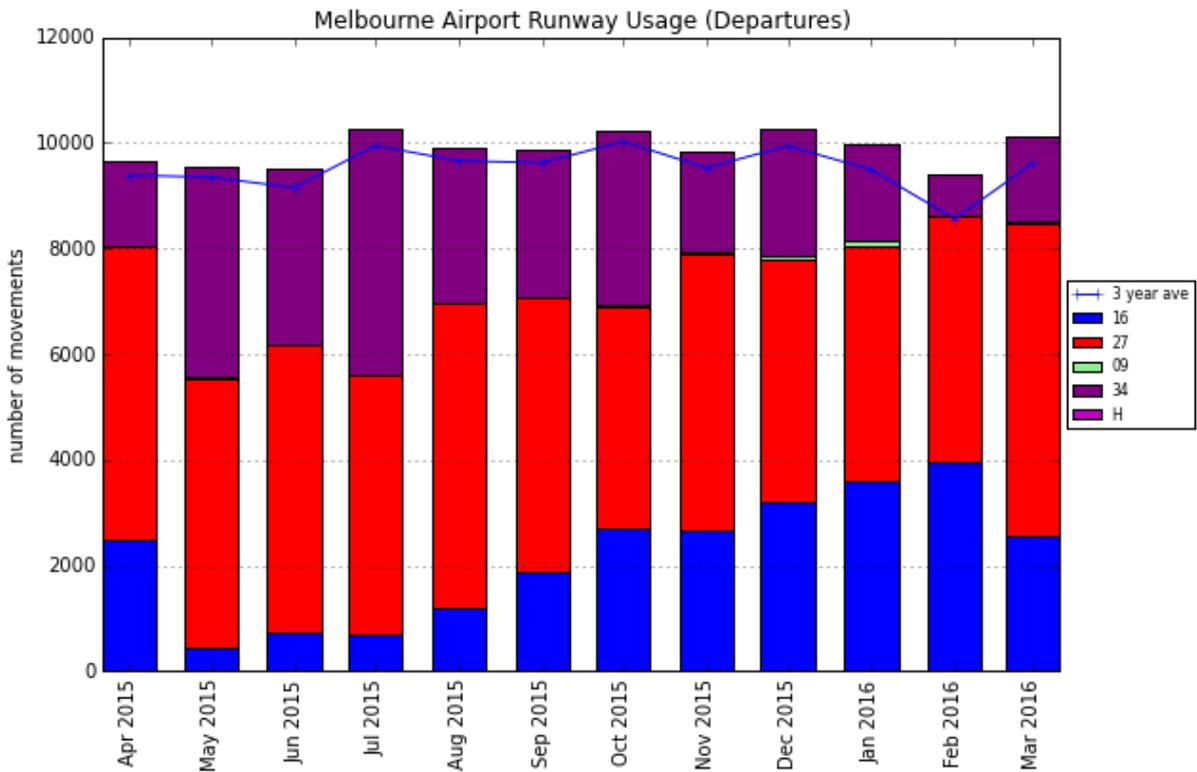


Figure 13: Runway usage (Departures) at Melbourne Airport to Quarter 1 of 2016

The key points shown by Figure 11 to Figure 13 are:

- During Quarter 1 of 2016, use of Runway 16 for arrivals (from the north) increased from the previous quarter.
- Arrivals to Runway 27 (from the east) decreased slightly in January and February, in line with the three year average.
- Departures were mostly from Runway 27 (to the west) and Runway 16 (to the south).

4.2 Noise Monitoring

Airservices collects noise and operational data from noise monitors (EMUs) around Melbourne Airport. This data can be expressed in a number of ways, to show average noise during a period, background noise levels and number of noise 'events' over a certain threshold.

Sound is measured on a logarithmic scale with the decibel (dBA) as the unit of measure. The sound level of typical daytime urban-based activities can vary between 40 dBA and 80 dBA.

The following section shows data from the Melbourne EMUs for the last fifteen months (see Figure 1 for the location of EMUs).

Note the term *N65* refers to the average number of daily noise events caused by aircraft that are over 65 dBA. Figures for *N70*, *N80* and *N90* are also provided.

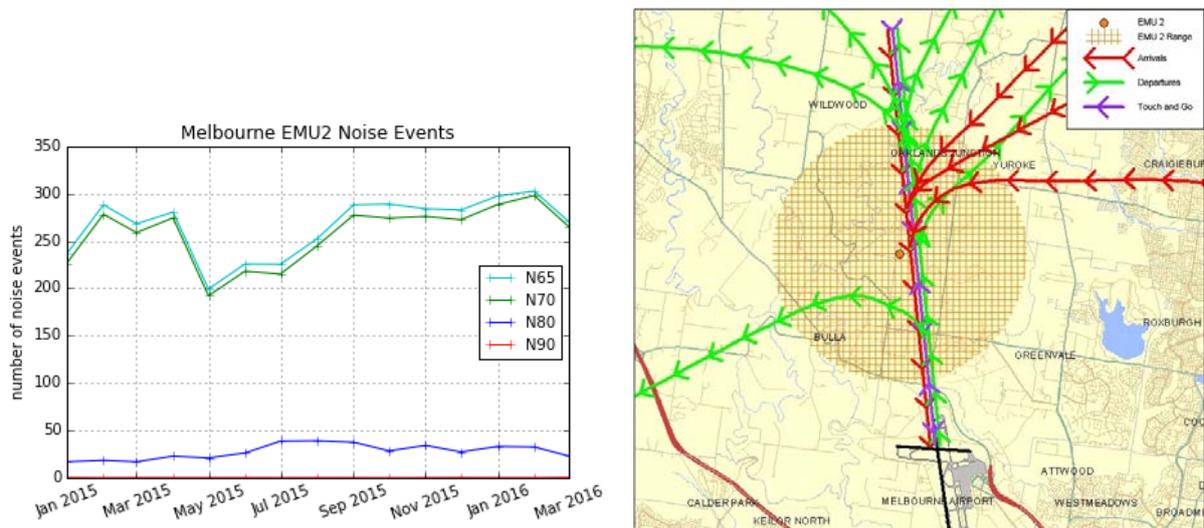


Figure 14: Average daily noise events at EMU 2 (Bulla) from Quarter 1 of 2015 to Quarter 1 of 2016

Key points shown are:

- EMU2 captures arrivals to Melbourne Runway 16 and departures from Melbourne Runway 34.
- The monitor at Bulla detects more events than the other Melbourne EMU locations due to its proximity to the airport.
- The pattern of aircraft noise events recorded by EMU 2 reflects the seasonal trends for arrivals to Runway 16, with more events recorded in summer than in winter.

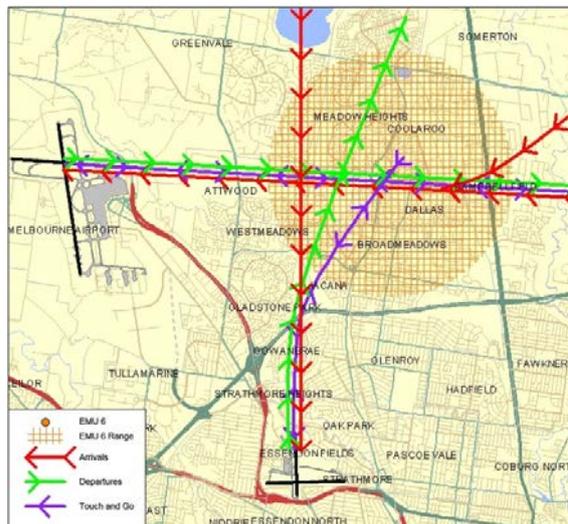
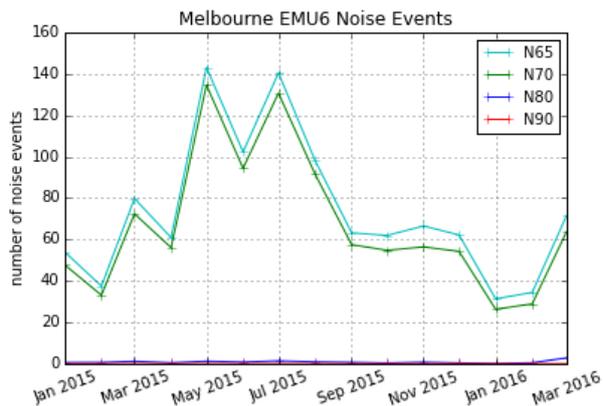


Figure 15: Average daily noise events at EMU 6 (Coolaroo) from Quarter 1 of 2015 to Quarter 1 of 2016

Key points shown are:

- EMU 6 captures arrivals to Melbourne Runway 27.
- While the pattern of aircraft noise events recorded by EMU 6 reflects the seasonal trend for arrivals to Runway 27 the correlation is not precise as there are some parts of the year where for noise abatement purposes, Runway 27 is used more for departures than for arrivals. Departures from Runway 27 do not fly over this monitor.

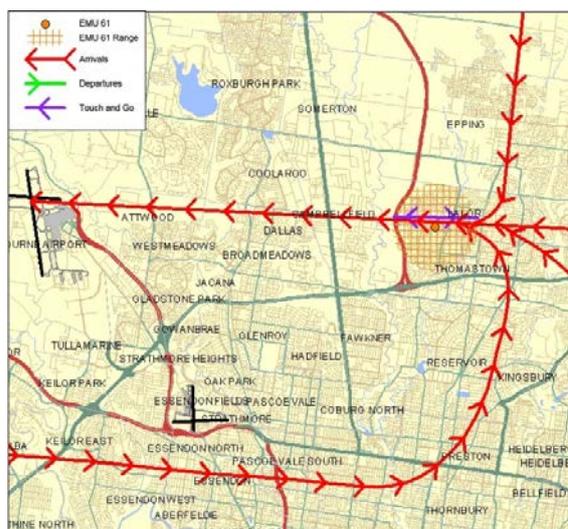
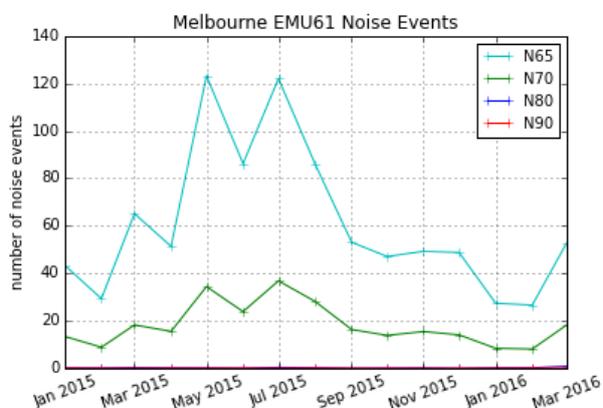


Figure 16: Average daily noise events at EMU 61 (Thomastown) from Quarter 1 of 2015 to Quarter 1 of 2016

Key points shown are:

- EMU 61 captures arrivals to Melbourne Runway 27.
- The pattern of aircraft noise events recorded by EMU 61 reflects the seasonal trend for arrivals to Runway 27, with more events recorded in winter than in summer. As a result the trend for this monitor mirrors that of EMU 6.

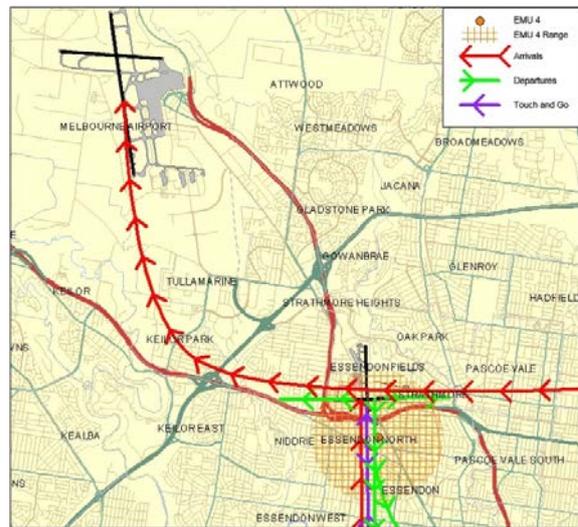
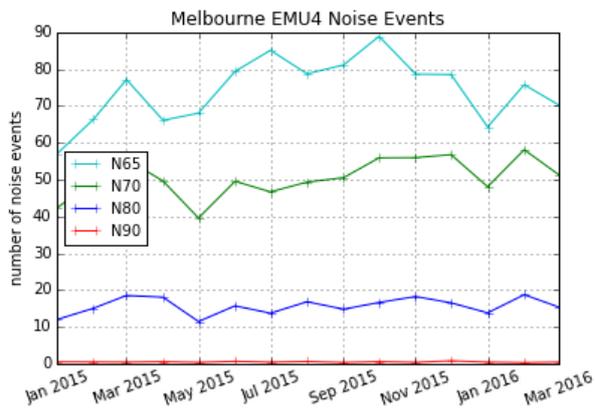


Figure 17: Average daily noise events at EMU 4 (Essendon) from Quarter 1 of 2015 to Quarter 1 of 2016

Key points shown are:

- EMU 4 captures arrivals to Melbourne Runway 34 and arrivals to Essendon Runway 35 and departures off Essendon Runway 17.
- Seasonal fluctuations in the use of Runway 34 at Melbourne Airport are offset by opposite fluctuations in use of Runway 17 at Essendon Airport.

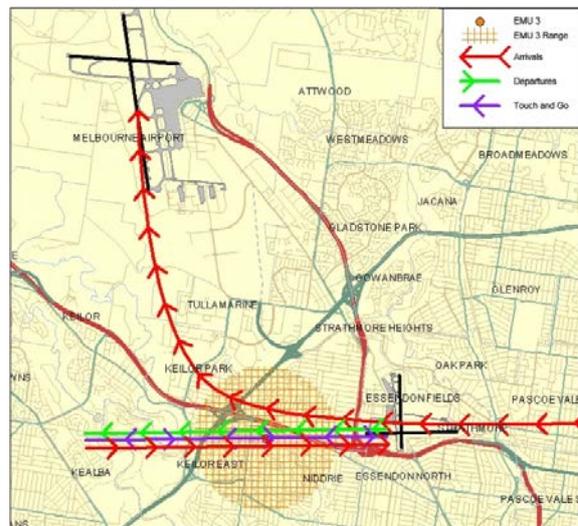
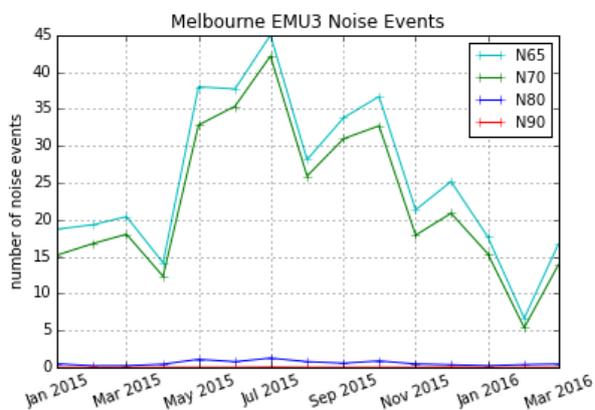


Figure 18: Average daily noise events at EMU 3 (Keilor East) from Quarter 1 of 2015 to Quarter 1 of 2016

Key points shown are:

- EMU 3 captures arrivals onto Melbourne Runway 34.
- The pattern of aircraft noise events recorded by EMU 3 reflects the seasonal trend for arrivals to Runway 34, with more events recorded in winter than in summer.

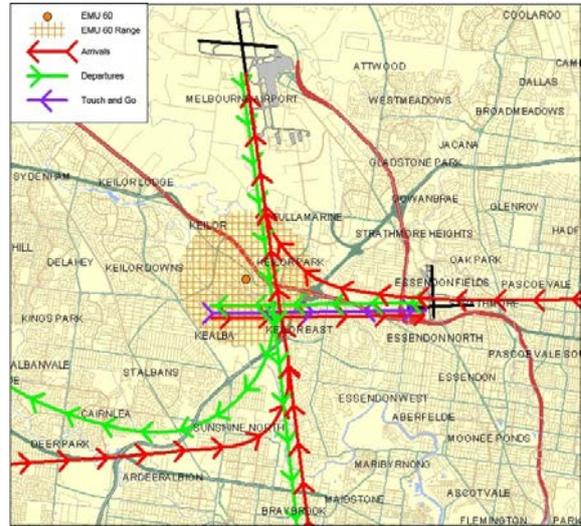
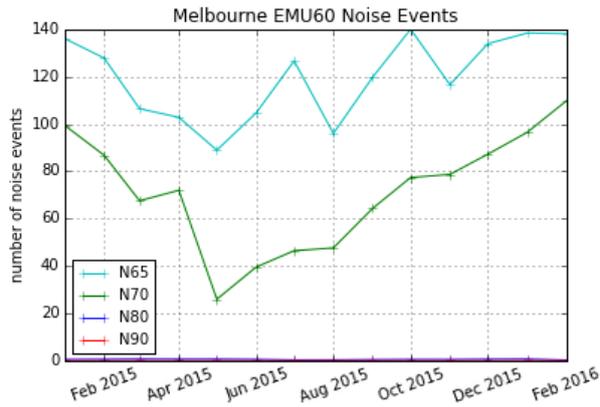


Figure 19: Average daily noise events at EMU 60 (Keilor Village) from Quarter 1 of 2015 to Quarter 1 of 2016

Key point shown is:

- EMU 60 captures arrivals to Melbourne Runway 34 and departures from Melbourne Runway 16.
- EMU 60 was removed in Quarter 1 of 2016 due to the location not complying with international standards for unattended noise monitoring. Two alternate sites are being trialled for three months to determine a suitable permanent location.

4.3 Historic Melbourne Runway Statistics

Historic movement data is given below for the most frequently used runways at Melbourne Airport.

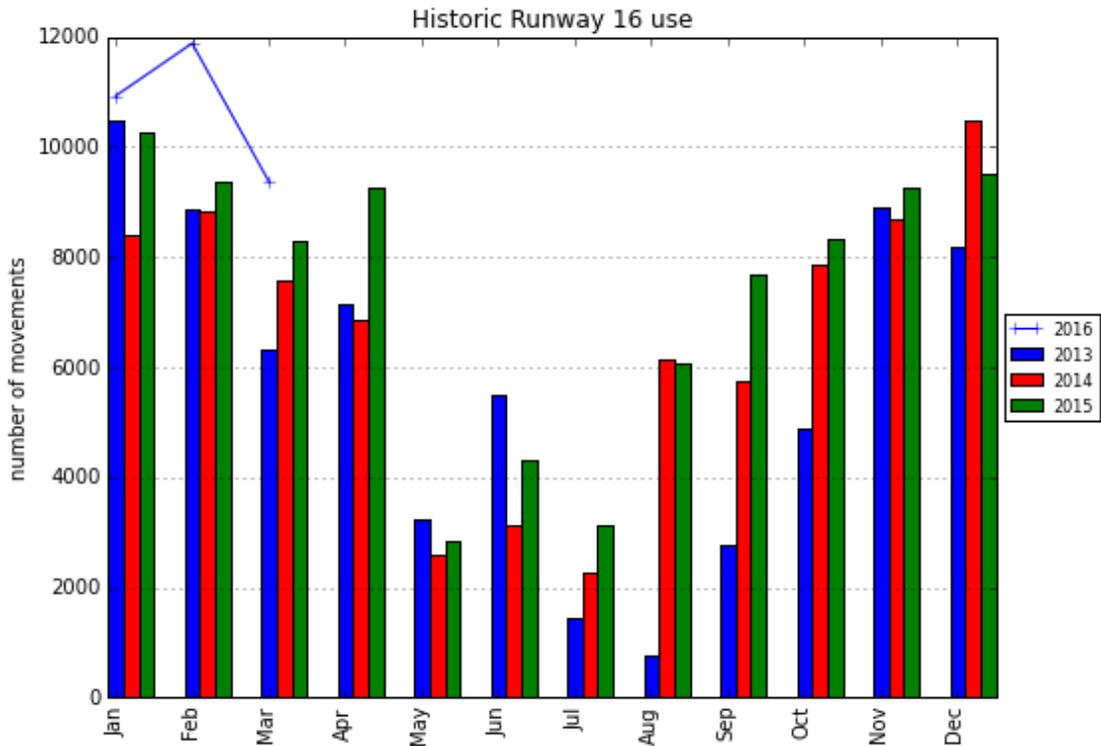


Figure 20: Runway 16 usage at Melbourne Airport 2013 to 2016

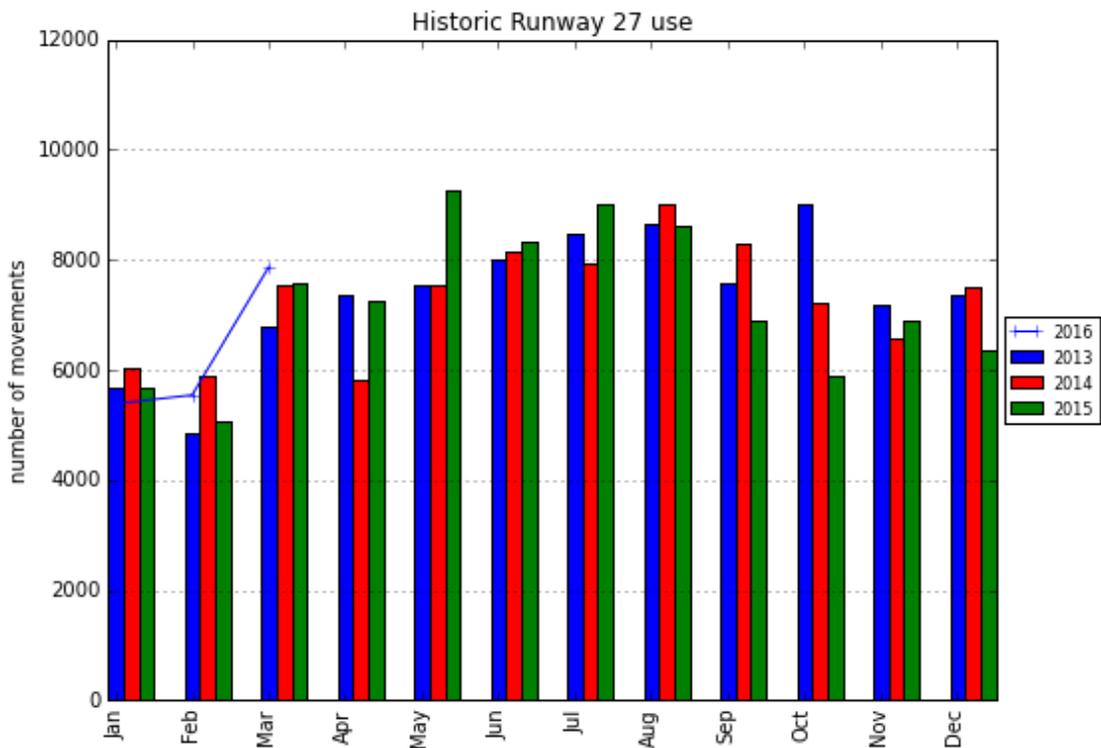


Figure 21: Runway 27 usage at Melbourne Airport 2013 to 2016

Key points shown in Figure 20 and Figure 21 are:

- Use of Runway 16 is generally heaviest during the December to January period. Use of Runway 27 is greater during the July to October period. This reflects prevailing winds at Melbourne Airport, which are from the south in the summer and from the north during winter and spring.
- Use of Runway 16 was higher than the three year average during Quarter 1 of 2016.

4.4 Night Movements

Figure 22 (below) shows aircraft movements at Melbourne Airport at night (11.00pm to 6.00am), by runway. There is no curfew at Melbourne Airport, though Noise Abatement Procedures are used to reduce the impact of aircraft operations on residential areas at night.

From 11.00pm to 6.00am, when wind and traffic conditions permit, aircraft depart off Runway 27 and arrive on Runway 16.

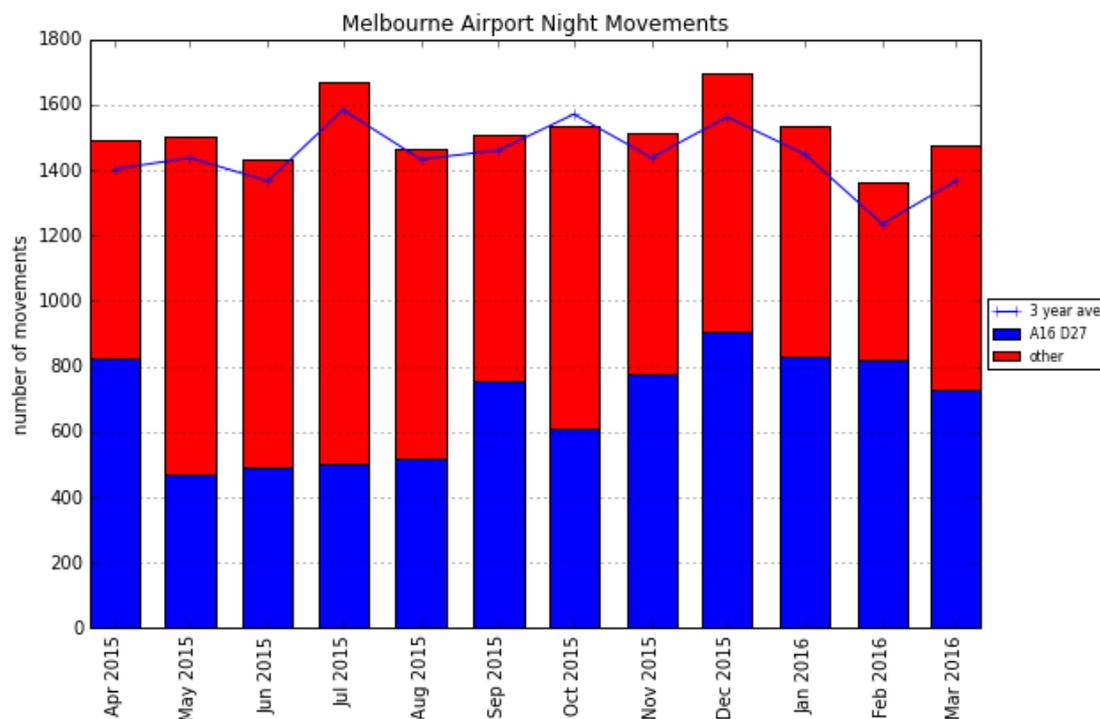


Figure 22: Night movements Melbourne Airport (11.00pm to 6.00am) by Runway, to Quarter 1 of 2016

The key points shown in Figure 22 are:

- On average there tend to be between 1300 and 1500 night time movements per month at Melbourne Airport – a little under 50 per night. The numbers of night movements in Quarter 1 of 2016 were above the three-year average.
- In Quarter 1 of 2016, use of the night-time preferred runway configuration was generally in line with previous quarters.

4.5 Essendon Airport

Figure 23 shows aircraft arrival / departure movements at Essendon Airport for the 12 month period to the end of Quarter 1 of 2016. The data point for March 2016 has been removed due to uncompleted data processing at the time the report was run. The chart also includes 3-year averages from April 2012 to March 2015.

The movements in the graph are based on arrival/departures at the airport and have excluded circuits. This is due to the difficulty in accurately reporting on the number of circuits at the airport.

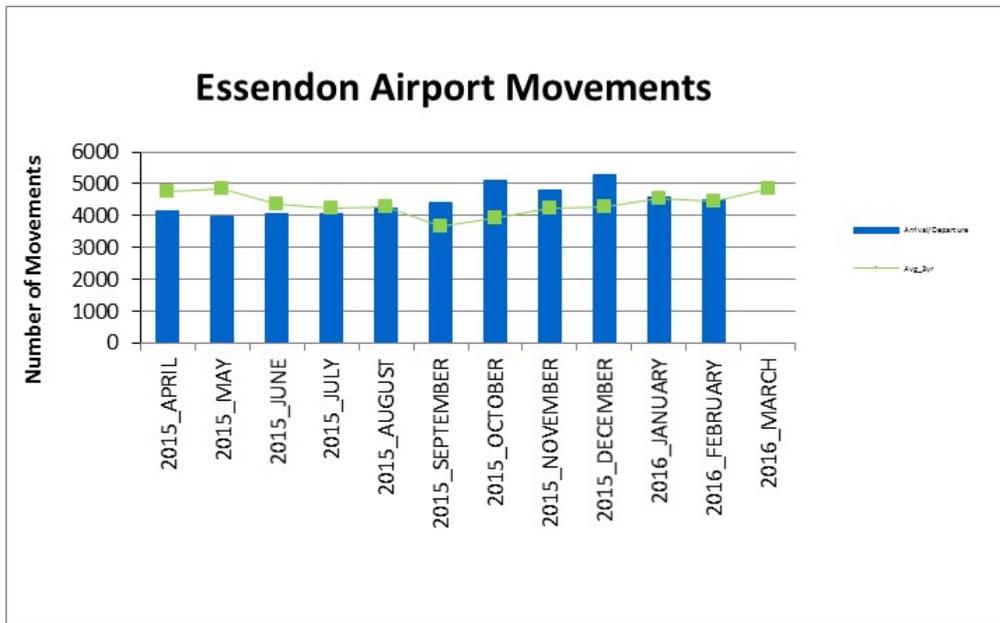


Figure 23: Aircraft movements to Essendon Airport to Quarter 1 of 2016 (and three-year averages for each month from April 2012 to March 2015)

Key points shown in Figure 23 are:

- The majority of operations at Essendon Airport are general aviation and there is no circuit training at the airport.
- Movement numbers at Essendon Airport are relatively constant between 4,000 and 5,000 per month.

Essendon Airport has a curfew, which restricts operations between 11.00pm and 6.00am to provide noise relief to residents near the airport. The details of restrictions at Essendon Airport can be found in the Air Navigation (Essendon Airport) Regulations 2001. This does not mean that all operations at the airport cease during these hours. In line with the Regulations, the Federal Minister for Infrastructure and Regional Development determines which types of movements are permitted.

Figure 24 shows curfew movements by category at Essendon Airport for the 12 month period to the end of Quarter 1 of 2016.

Figure 25 shows the runways used during the curfew movements at Essendon Airport for the 12 month period to the end of Quarter 1 of 2016.

Exceptions to curfew restrictions set out in the Regulations include:

- Propeller aircraft that are less than 8618 kg (shown as 'approved' in Figure 24).
- Other aircraft less than 8618 kg which comply with noise standards known as the 90/95 rule (approved).
- Helicopters that meet ICAO Annex 16 Volume 1 Chapter 8 or 11 noise standards (approved).
- Aircraft involved in emergencies.
- Aircraft which have taxi clearance prior to the start of the curfew but are yet to take off.

More detail on curfew restrictions is available on the website of the Department for Infrastructure and Regional Development at <http://www.infrastructure.gov.au/aviation/environmental/curfews/EssendonAirport/index.aspx>

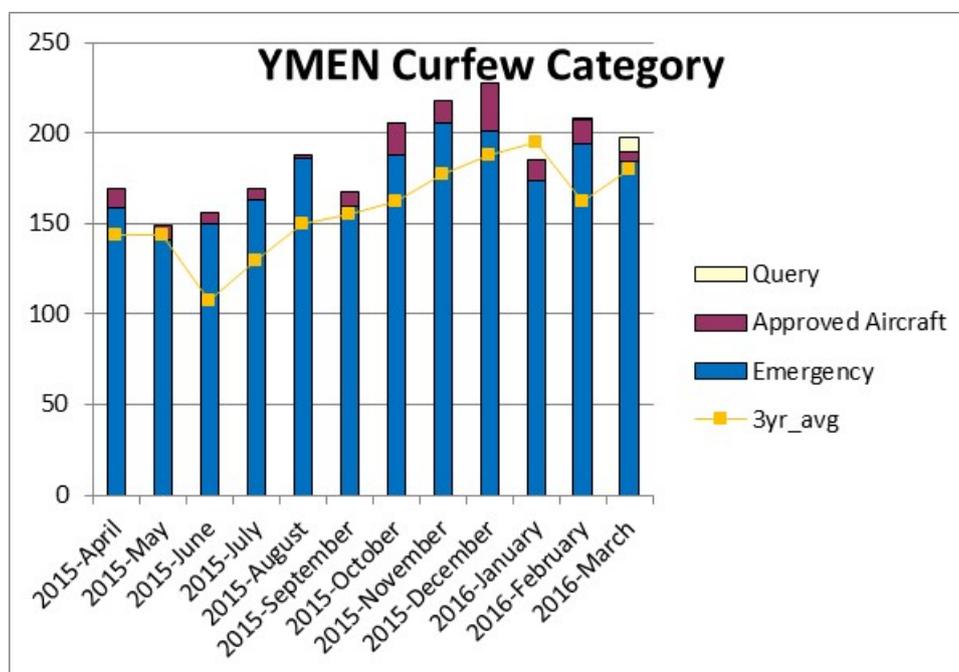


Figure 24: Essendon Curfew Movement Category (11.00pm to 6.00am) for the 12 month period to the end of Quarter 1 of 2016.

Key points shown by Figure 24 are:

- During Quarter 1 of 2016 February and March movements were above the three-year average during curfew hours.
- The majority of night-time movements are involved in emergency operations (e.g. police or air ambulance).

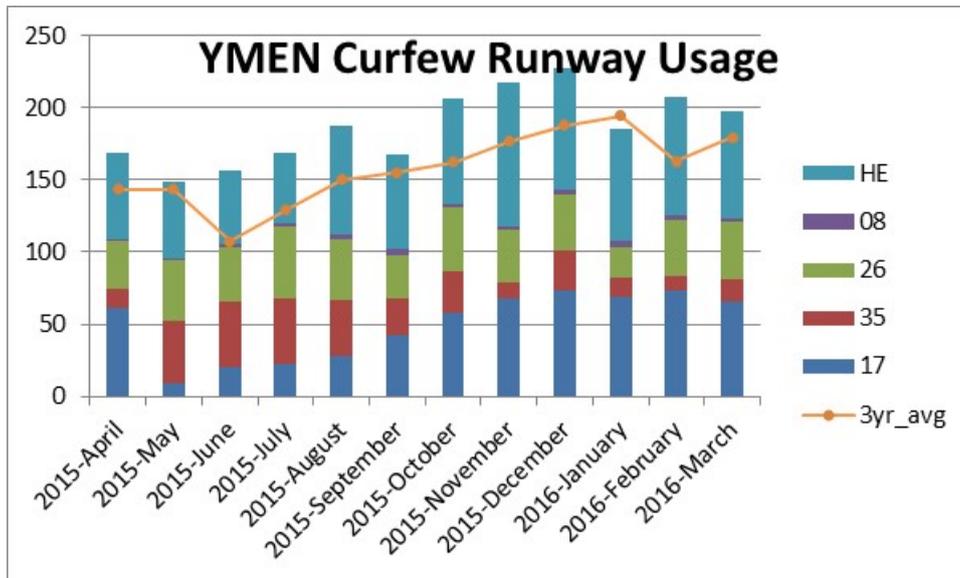


Figure 25: Runway usage for curfew movements (11.00pm to 06.00am) at Essendon Airport for the 12 month period to the end of Quarter 1 of 2016.

Key points shown by Figure 25 are:

- Police and emergency services primarily use helicopters, which account for more than a third of all curfew movements. These are based towards the northern end of the main runway.
- During the curfew, over the course of the year, the cross runway (08-26) is used slightly more than the main runway (17-35).

4.6 Moorabbin Airport

Figure 26 shows aircraft arrival/departure movements at Moorabbin Airport for the 12 month period to the end of Quarter 1 of 2016. The data point for March 2016 has been removed due to uncompleted data processing at the time the report was run. The chart also includes 3-year averages per month from April 2012 to March 2015.

The movements in the graph are based on arrival/departures at the airport and have excluded circuits. This is due to the difficulty in accurately reporting on the number of circuits at the airport. Circuits are usually performed by small General Aviation aircraft.

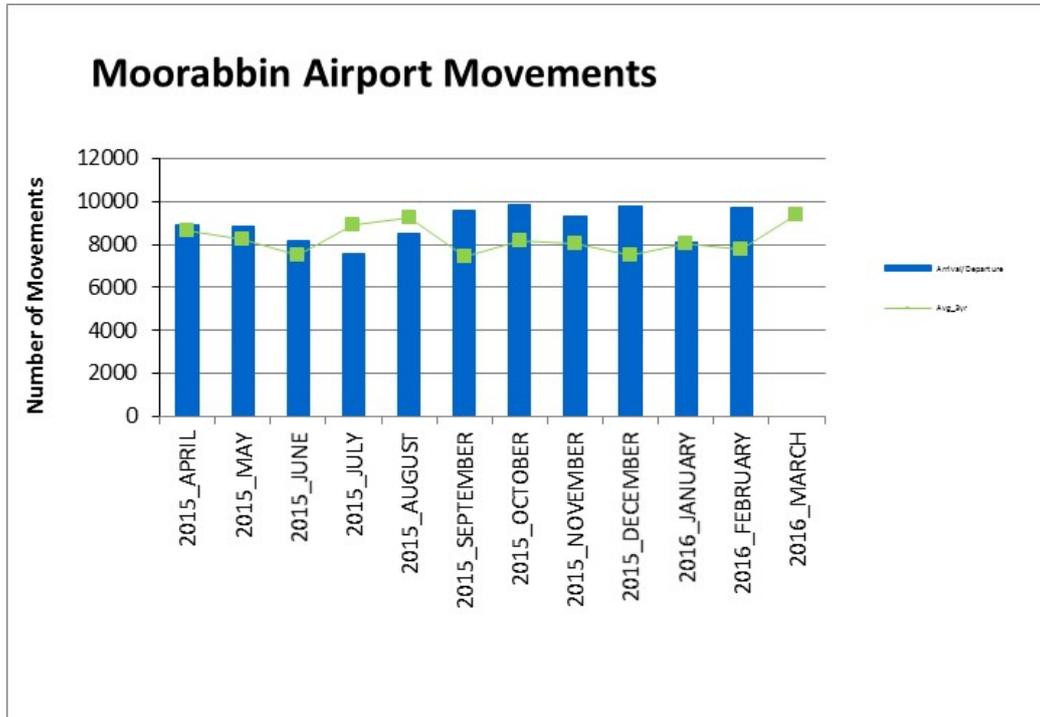


Figure 26: Aircraft movements in Moorabbin Airport to Quarter 1 of 2016 (and three-year averages per month from April 2012 to March 2015).

The key points shown by Figure 26 are:

- Quarter 1 movements at Moorabbin Airport were above the three year average.
- Fluctuations in movement numbers reflect weather conditions (there is less leisure flying in bad weather) and training school calendars.

4.7 Avalon Airport

Figure 27 shows aircraft arrival/departure movements at Avalon Airport for the 12 month period to the end of Quarter 1 of 2016. The data point for March 2016 has been removed due to uncompleted data processing at the time the report was run. The chart also includes 3-year averages per month from April 2012 to March 2015.

The movements in the graph are based on arrival/departures at the airport and have excluded circuits. This is due to the difficulty in accurately reporting on the number of circuits at the airport. Circuits are usually performed by small General Aviation aircraft.

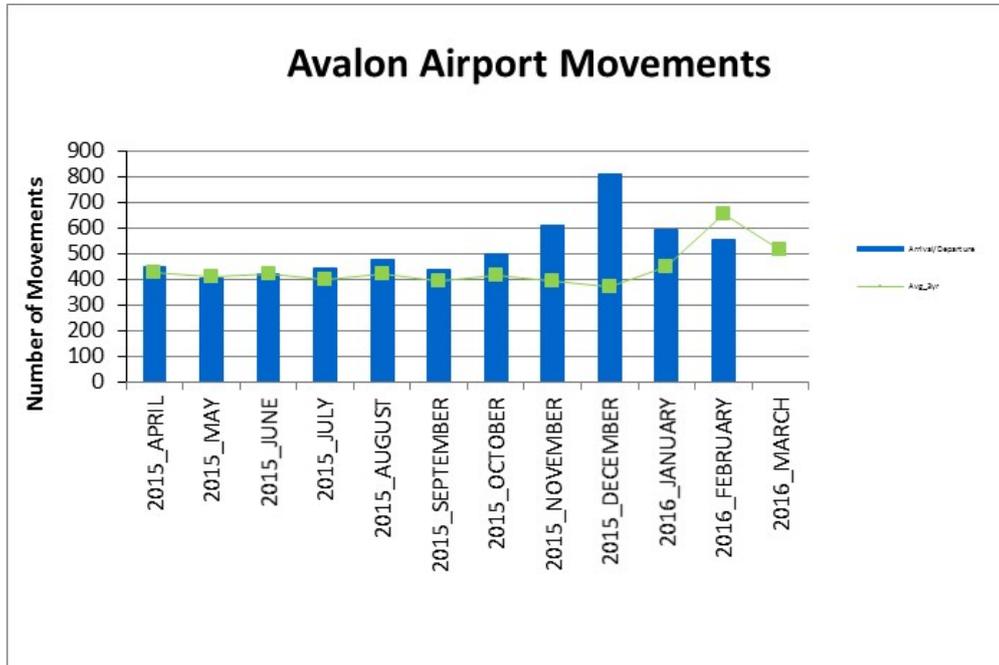


Figure 27: Aircraft movements to Avalon Airport to Quarter 1 of 2016 (and three-year averages per month from April 2012 to March 2015).

The key points shown by Figure 27 are:

- A small number of circuit operations are conducted at Avalon Airport. The fluctuations in numbers depend partly on the calendar of training schools.
- The movement numbers at Avalon through Quarter 1 of 2016 were between 500-600 per month. This is higher than the three year average for January, but below for February.

5 Complaints Data

Airservices manages complaints and enquiries about aircraft noise and operations through its Noise Complaints and Information Service (NCIS). Complaints, enquiries and requests for information about aircraft operations received by the NCIS are collected and stored in a database for the purpose of complaint management, analysis of issues and identification of causal factors. Each complaint, enquiry or request for information is referred to as a contact and each person who makes contact with the NCIS is referred to as a complainant. For this report, only complainants making complaints have been included.

5.1 NCIS Complainants by suburb

The NCIS received complaints from 142 complainants from Melbourne, Moorabbin, Essendon, Point Cook and Avalon Airport during Quarter 1 of 2016. Complainant density maps are used to show the number of complainants from each suburb, with suburbs coloured according to how many complainants had contacted the NCIS during the quarter. The data does not include complainants who contacted other organisations (e.g. airports).

Table 1 to Table 5 provide a breakdown of suburbs from Quarter 1 of 2016 with five or more complainants.

Figure 28 shows complainant density for the Melbourne basin with flight tracks overlaid for Melbourne, Moorabbin, Essendon, Avalon and Point Cook Airport for Quarter 1 of 2016.

Figure 29 shows the complainant density map zoomed in for Melbourne and Essendon airports and Figure 30 show the corresponding map for Moorabbin Airport.

Further analysis of complaints by suburb location may be found at Appendix 2.

The following data is derived from a dynamic database and is correct as at 15th April 2016 and may change without notification.

Table 1: Recorded Melbourne Airport Complainants by Suburb, Quarter 1 of 2016

Melbourne Airport				
Suburb	Q2 2015	Q3 2015	Q4 2015	Q1 2016
Keilor	4	3	2	8
Keilor Park	1	1	1	5
St Albans	4	4	1	6
West Footscray	1	5	3	1
All Other Complainants	35	32	36	51
Total Complainants	45	45	43	71

Table 2: Recorded Avalon Airport Complainants by Suburb, Quarter 1 of 2016

Avalon Airport				
Suburb	Q2 2015	Q3 2015	Q4 2015	Q1 2016
All Other Complainants	1	0	0	3
Total Complainants	1	0	0	3

Table 3: Recorded Essendon Airport Complainants by Suburb, Quarter 1 of 2016

Essendon Airport				
Suburb	Q2 2015	Q3 2015	Q4 2015	Q1 2016
All Other Complainants	34	24	20	28
Total Complainants	34	24	20	28

Table 4: Recorded Moorabbin Airport Complainants by Suburb, Quarter 1 of 2016

Moorabbin Airport				
Suburb	Q2 2015	Q3 2015	Q4 2015	Q1 2016
Dingley Village	7	10	6	11
Mordialloc	3	1	1	5
All Other Complainants	21	24	29	26
Total Complainants	31	35	36	42

Table 5: Recorded Point Cook Airport Complainants by Suburb, Quarter 1 of 2016

Point Cook				
Suburbs	Q2 2015	Q3 2015	Q4 2015	Q1 2016
Point Cook	13	10	7	0
All other Complainants	0	2	1	0
Total Complainants	13	12	8	0

The key points shown in Table 1 to Table 5 are:

- Overall complainant numbers associated with Melbourne Airport increased from 43 in Quarter 4 2015, to 71 in Quarter 1 2016. Issues raised by complainants included Runway selection, night time flights and increased frequency of flights.
- Point Cook Airport had a reduction in the number of complainants, while Moorabbin, Essendon and Avalon Airports had increases in the number of complainants.

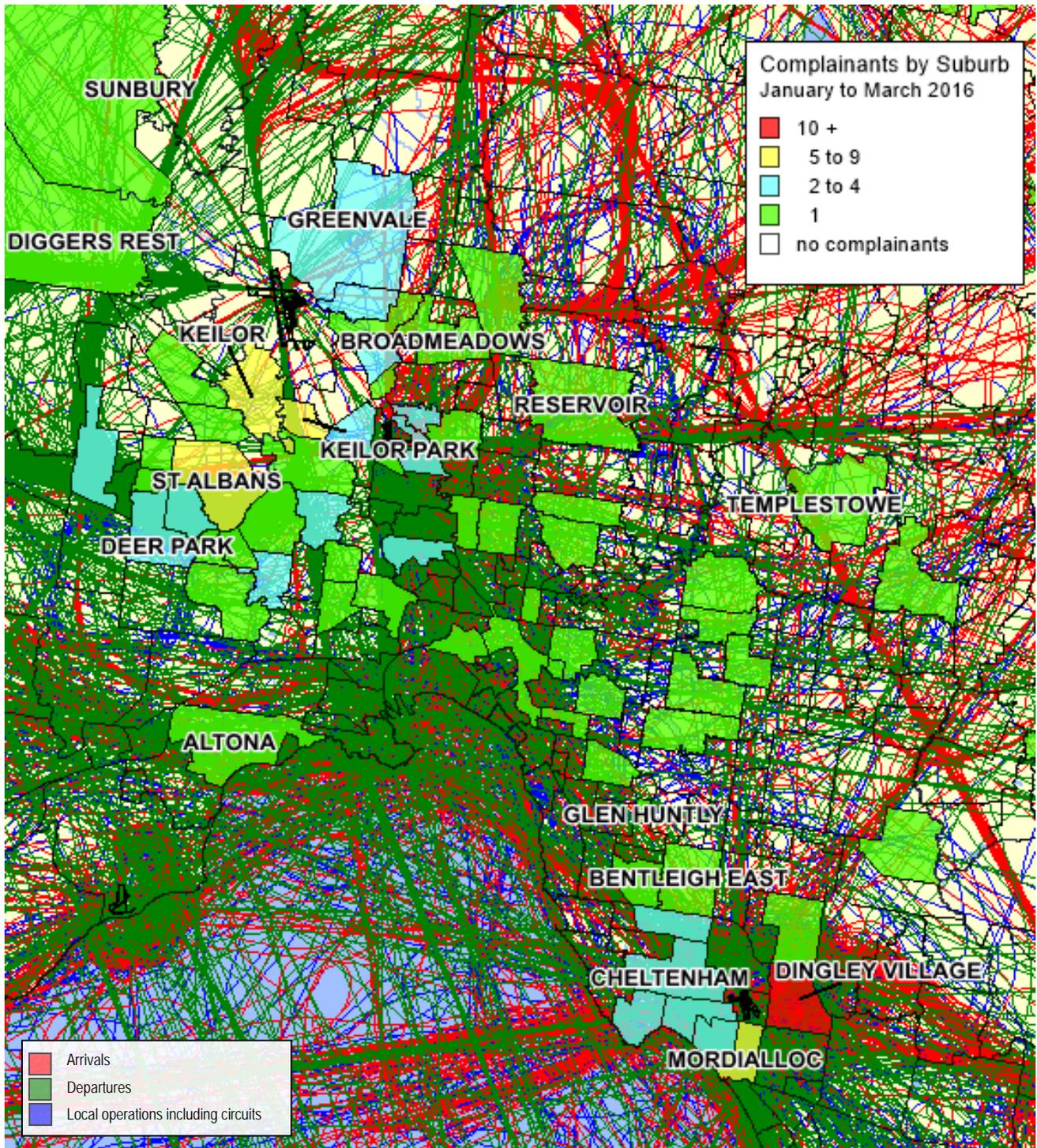


Figure 28: Complainant density by suburb for Quarter 1 of 2016 with an overlay of tracks for sample period 1st to 3rd March 2016 at Melbourne Airport, Essendon Airport, Moorabbin Airport, Avalon Airport and Point Cook Airport

Figure 28 shows that complainants are from a wide area in the Melbourne basin however they are more concentrated around the airports. The suburbs with the most complainants are Dingley village, which were about circuit training at Moorabbin Airport by both helicopters and fixed wing aircraft, and Keilor which were primarily about night time departures and runway selection.

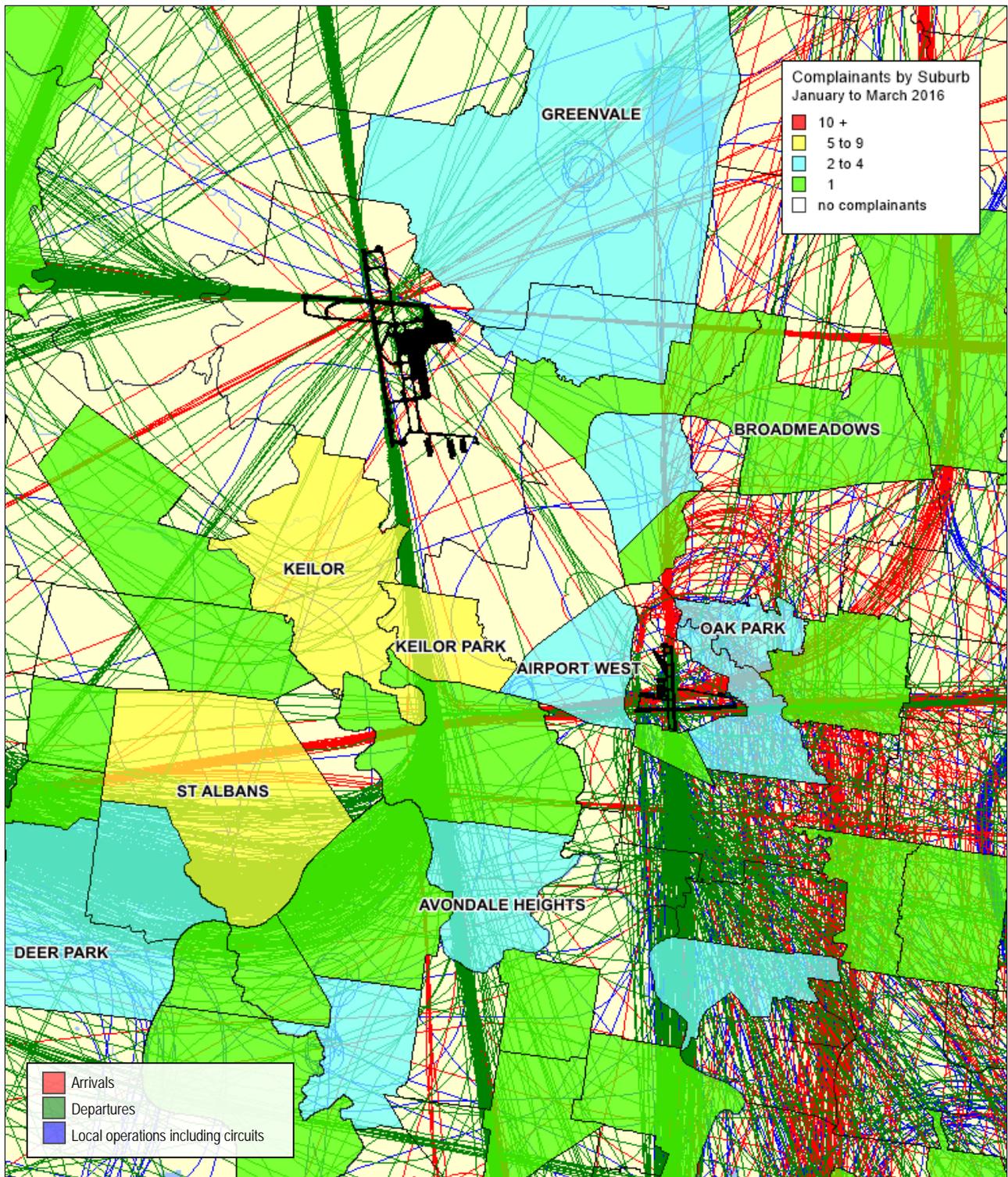


Figure 29: Complainant density by suburb for Quarter 1 of 2016 with an overlay of tracks for sample period 1st to 3rd March 2016 at Melbourne, Essendon, Moorabbin, Point Cook and Avalon Airports (zoomed in on Melbourne and Essendon Airports)

Key points for Figure 29:

- Complainant numbers associated with Melbourne Airport are generally greater from the south of the Airport as this is where the population is more concentrated.
- Keilor, which was the suburb with the most complainants for Melbourne Airport in Quarter 1, is mainly affected by departures from Runway 16.

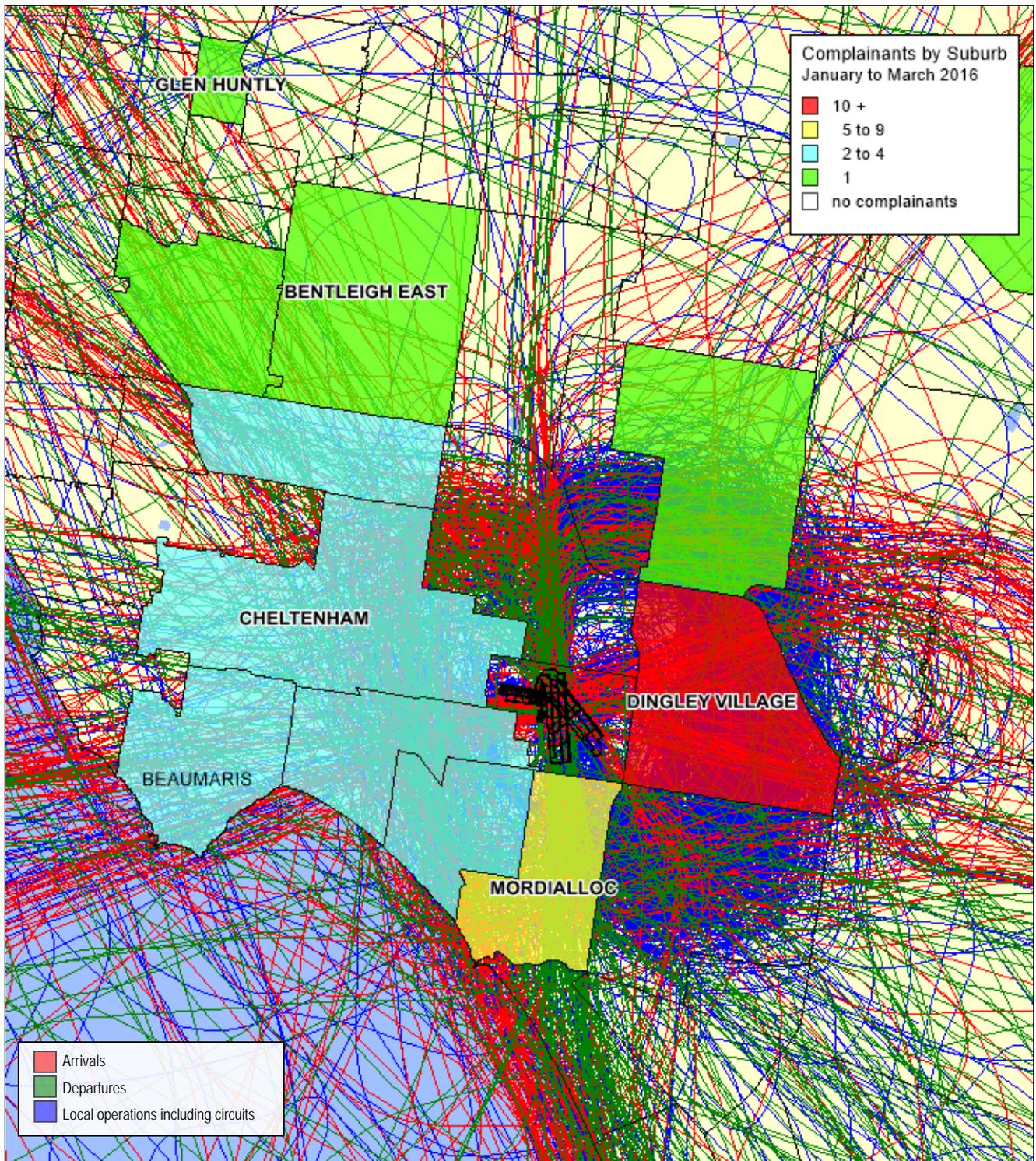


Figure 30: Complainant density by suburb for Quarter 1 of 2016 with an overlay of tracks for sample period 1st to 3rd March 2016 at Melbourne, Essendon, Moorabbin, Point Cook and Avalon Airports (zoomed in on Moorabbin Airport)

The key points in Figure 30 are:

- The suburb with the largest number of complainants about Moorabbin Airport is Dingley Village. The main issue raised by complainants from Dingley Village was circuit training operations at Moorabbin Airport (both helicopter and fixed wing aircraft). Complainants were also concerned with the timing of the training and increases in the activity.

More information on Circuit Training may be found on the Airservices Australia website at: http://www.airservicesaustralia.com/wp-content/uploads/12-039FAC_NCIS-Circuit-training_WEB.pdf

6 Airservices update

6.1 Community Aviation Consultation Groups

Airservices attends Community Aviation Consultation Group (CACG) meetings at Melbourne Airport, Essendon Airport and Moorabbin Airport to provide information to the community and assist in discussions on aviation matters. Appendix 1 provides a summary of issues raised by Airservices at CACG meetings.

6.2 Noise improvements

Airservices has developed a process to investigate aircraft noise improvements across Australia. Working with the community and the aviation industry, Airservices will assess the benefits of noise improvement proposals and implement them if feasible.

Airservices will assess the potential safety, efficiency and environmental impacts of proposals. We will seek community views throughout this process to help inform decisions. Safety remains our top priority and any change would have to meet rigorous Air Traffic Control requirements. This means that it may not be possible to implement some proposals.

Airservices would only implement a new procedure or a trial after a comprehensive community engagement process, including consultation with community forums. We would also discuss potential changes with the aviation industry. Airservices will publish details of any changes to procedures or trials on its website.

Appendix 1 provides details of the noise improvement that has been implemented in the Melbourne Basin.

6.3 Key Issues and initiatives identified and/or investigated by Airservices

Airservices has investigated a number of noise improvement initiatives in the Melbourne area over the past few years. A list of these initiatives is at Appendix 2.

Key issues for this airport include:

- Night time flights
- Low flying aircraft
- Departures over the south

Initiatives identified and/or investigated by Airservices include:

- Helicopters – discussions held with the East Melbourne Group and various helicopter operators regarding noise concerns. Ongoing.

7 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/how-to-make-a-complaint/)
- e-mail ncis@airservicesaustralia.com
- telephone 1800 802 584 (freecall) or 1300 302 240 (local call –Sydney)
- fax (02) 9556 6641
- write to, Noise Complaints and Information Service, PO Box 211, Mascot NSW 1460.

Airservices welcomes comments about this report. Please contact us via e-mail at ncis@airservicesaustralia.com if you would like to provide feedback.

Appendix 1 **Airservices update**

Melbourne Airport Community Aviation Consultation Group (CACG)

16 February 2016

- The meeting was updated with details of the Keilor Noise Monitor relocation. Airservices advised that discussions had continued with Brimbank Council and community representatives, and that a decision regarding the new location would be made by the end of February. Factors that contribute to determining locations of noise monitors were outlined to the meeting.
- ANIR data for Quarter 4 2015 was discussed, noting that there were 43 complainants for the quarter, down from 45 in Quarter 3. Key issues raised were night time flights and low flying aircraft. Keilor and West Footscray had the highest amount of complainants for the quarter.
- Airservices advised that during the Formula 1 Grand Prix (March 17-20) two temporary restricted areas will be declared due to helicopter operations for the event. This will require early right turns off Runway 16.
- Airservices encouraged members to make use of WebTrak enhancements, noting particularly the information that can be obtained from noise monitoring data.

17 November 2015

- A Technical Noise and Environment Working Group Update was presented to the meeting.
- Airservices showed an example of a Volans video highlighting the contribution that Volans can make to future runway development program discussions. Community members welcomed the use of Volans.
- The meeting was updated with details of the Keilor Noise Monitor relocation. It was explained that the current location does not meet current standards, due to the angle between the monitor and current flight paths. Airservices acknowledged that previous efforts to consult on the matter had not been effective, and committed to discussing the matter out of session with Keilor representatives.

18 August 2015

- Airservices presented the Q2 ANIR report of 2015. Use of Runway 16 for arrivals (from the north) was significantly lower than the previous quarter, with the exception of April 2015. Movements in April 2015 were due to an increase in southerly winds during this period, which is normal in early autumn. Arrivals to Runway 27 (from the east) increased slightly, in line with the three year average.
- Noise monitoring in Keilor Village - Majority of noise events captured by the permanent monitor located in Keilor are not compliant with ISO 20906 due to the angle between the aircraft and noise monitor (below 30 degrees). Short term noise monitoring was conducted to determine a new location. Airservices asked for feedback for a new location for the monitor within the identified zone.
- Diggers Rest Noise Monitoring – Early turn departures from Runway 27. In May 2014 it was identified that 2% of Runway 27 jet departures turned prior to the designated departure point called HOPLA.
- Technical Noise and Environment Working Group – overview provided.

19 May 2015

- Airservices presented the Q1 ANIR report showing increased use of Runway 16 due to an increase in southerly winds during this period. Arrivals to Runway 27 (from the east) were also slightly lower. Arrivals to Runway 16 tend to avoid residential areas, though those to Runway 27 and Runway 34 do overfly suburbs.
- Advised the CACG that the Short-term Noise Monitoring Results (Keilor and Digger's Rest) are being finalised and will be online within the next month.

Essendon Airport Community Aviation Consultation Group (CACG)

11 March 2016

- Airservices summarised relevant information from the Quarter 4 2015 Aircraft Noise Information Report for the Melbourne Region.
- Total aircraft movements remain constant between 4,000 and 5,000 a month and generally consistent with three year average.
- Curfew movements were around 200-225 a month during the Quarter and the upward trend of about 20% above the three-year average since June has continued.
- Majority of movements during curfew were emergency operations (police or air ambulance).
- Police and emergency services primarily used helicopters, which account for around a nearly half of all curfew movements.
- Total of 20 complainants for Quarter 4 2015, which is lowest result recorded for Essendon Airport.

20 November 2015

- Airservices summarised relevant information from the Quarter 3 2015 Aircraft Noise Information Report for the Melbourne region.
- Curfew movements were around 500 for the quarter.
- Majority of movements during curfew were emergency operations.
- Total of 24 complainants for Quarter 3 2015, a decrease from last quarter.

4 September 2015

- Airservices summarised relevant information from the Quarter 2 2015 Aircraft Noise Information Report for the Melbourne region.
- Curfew movements were around 330, well above three year average. Majority of movements during curfew were emergency operations (police or air ambulance).
- Police and emergency services primarily used helicopters, which account for around a nearly half of all curfew movements.
- Snapshot of complaint data for April and May 2015 for the Essendon area - 34 complainants, a decrease from last quarter. Majority of complaints for Essendon Airport were concerned about helicopter operations, particularly at night. These complaints were from a number of areas.

12 June 2015

- Airservices summarised relevant information from the Quarter 1 2015 Aircraft Noise Information Report for the Melbourne region.
- Snapshot of complaint data for April and May 2015 for the Essendon area - 31 complaints from 25 complainants assigned to Essendon Airport.
- Airservices provided information in response to 4x complaints received by the airport (all regarding curfew flights). The Airport considers these closed now.
- Airservices outlined discussions held during May with the East Melbourne Group and various helicopter operators regarding residents' concerns of low flying aircraft, hovering aircraft and the continuous noise that is perceived. Although helicopters are in uncontrolled airspace, and therefore not controlled by Airservices traffic control, Airservices has been engaging with the East Melbourne Group and operators is to try to alleviate the issues.

Moorabbin Airport Community Aviation Consultation Group (CACG)

8 April 2016

- An update was presented on noise complaints for Q4 2015, with a total of 36 complainants. Main issues for the quarter were around propeller aircraft, circuit training and general noise.
- Q1 2016 complaints were also presented with 91 complaints, total of 47 complainants. Main issues were around general aircraft noise and increased movements.
- Airservices upgraded its Noise Complaints Management System. As part of the upgrade, improvements have been made to the monthly noise complainant reporting to increase the focus on the 'issue' rather than the complainant. The new reporting format will commence this year, with January and February reports provided in the next two weeks. Noise reporting for October – December 2015 will be recorded in the [Q4 Aircraft Noise Information Reports](#) only.
- Noise monitoring was conducting between October and December 2014 for Moorabbin Airport. It was first on the schedule for Regional Airports. Moorabbin will come up on the schedule again once all other regional airports have had temporary noise monitoring, however, this isn't scheduled in for the near future.

4 December 2015

- Airservices provided an update on results from temporary noise monitoring conducted around Moorabbin Airport between October and December 2014. Information was provided on the following points:
 - Purpose of noise monitoring
 - Where to from here – Details of Noise complaints and future locations
 - Questions around accuracy were discussed – How do Noise monitors distinguish between aircraft and non-aircraft noise
- An update was presented on noise complaints for quarter 3 2015, with a total of 35 complainants. Main issues were propeller aircraft and circuit training.

25 September 2015

- Airservices summarised relevant information from the Quarter 2 2015 Aircraft Noise Information Report for the Melbourne region
- Airservices provided an update on results from temporary noise monitoring conducted around Moorabbin Airport between October and December 2014. Three of the four reports have been revised and the CACG members are now happy for the reports to be published on the Airservices website.
- An update on the Upgrade of Airservices Noise Complaint Management System (NCMS) was presented. The NCMS is scheduled for implementation in the coming months. This will require a two week limitation of services to enable data migration to occur on the new database along with staff training.

26 June 2015

- Airservices updated the meeting with the latest relevant Aircraft Noise Information Report data for Quarter 1 of 2015.
- An update on results from temporary noise monitoring conducted around Moorabbin Airport between October and December 2014 was provided. Three of the four reports have been revised and removed from the Airservices website following CACG feedback.
- Airservices outlined discussions held during May with the East Melbourne Group and various helicopter operators regarding residents' concerns of low flying aircraft, hovering aircraft and the continuous noise that is perceived. Although helicopters are in uncontrolled airspace, and therefore not controlled by Airservices traffic control, Airservices has been engaging with the East Melbourne Group and operators is to try to alleviate the issues.

Noise improvement investigations implemented

Helicopters over the CBD

Airservices followed-up complaints about helicopters hovering over the Melbourne Cricket Ground (MCG) during sporting events. Helicopter operators advised the low winter sun often prevents filming from the south of the ground during the AFL season. Therefore on-ground advertising during the AFL season is oriented so that it is best viewed from the north, which is why helicopters tend to hover to the north of the ground (over residential areas).

The operators agreed to hover to the south whenever possible, and when filming from the north they will try as far as possible to hover over the park north of the MCG and not over residential areas. In addition, operators already try to use their quietest helicopters for operations over the MCG.

Melbourne Runway 16 early turns

Following an increase in complaints about early turns of jet departures from Runway 16 during Quarter 4 of 2013, Airservices contacted airlines about the problem. Airlines have reminded their pilots that aircraft taking off from Runway 16 for destinations to the north and east should only turn to the west once they have reached a waypoint 4 nautical miles (roughly 7km) south of the airport. Airservices will continue to monitor this issue.

Appendix 2 Noise Improvement Investigations

Melbourne Noise Improvement Investigations

<p>Melbourne: Can departures from Rwy 16 track further south before turning west, to avoid suburbs of St Albans and Keilor?</p>	<p>2013</p>	<p>Moving the flight path turn to the south would result in some benefits for residents of Ardeer and St Albans. It would, however, move noise to Sunshine. In addition, leaving aircraft on runway heading for longer would restrict the ability of ATC to allow aircraft behind to take off.</p>
<p>Melbourne: Runway 16 early turns - can jets departing Runway 16 not turn early over Keilor and St Albans</p>	<p>2013</p>	<p>In January 2014, Airservices contacted all airlines that had been identified as turning early to remind them of need to continue straight until the HORSH Waypoint (6nm from runway threshold).</p>
<p>Melbourne: Is it possible to provide some relief to residents of East Melbourne and Cremorne through shifting the location and orientation of on-ground signage for sports conducted during the summer months, at the MCG when the sun position</p>	<p>2013</p>	<p>Discussion with MCG and operators held in August with commitment from three of the main operators they will hover to the south whenever possible and if north, hover over the park and not houses and will use their quietest aircraft.</p>