

Canberra Airport

Aircraft Noise Information Report

Quarter 3 2012 (July to September)

Version Control

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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 can not 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.

Canberra - Aircraft Noise Information Report

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1. Purpose

This report summarises data for Quarter 3 of 2012 (July to September) from Airservices' Noise and Flight Path Monitoring System (NFPMS) and Noise Complaints and Information Service (NCIS) for the Canberra area (Canberra Airport).

1.1 Canberra Airport

Canberra Airport is located 8km to the east of the city. There are no residential areas directly aligned with runways, though the suburb of Jerrabomberra is located around 10km to the south east of the airport. Operations at the airport are a mixture of jet aircraft and general aviation traffic. Australia's VIP fleet is based at Canberra, as well as several fixed-wing and helicopter flying schools. During Quarter 3 of 2012 there were approximately 14,000 aircraft movements at Canberra Airport. More information about Canberra Airport is available from the Airservices website at www.airservicesaustralia.com/aircraftnoise/airport-information/.

Other operations in the Canberra area may originate from hospital helipads or the Southcare Helicopter base and adjacent ACT Emergency Services Agency helipads (around 7km south of the airport).

1.2 Aircraft noise monitoring at Canberra

Airservices NFPMS captures and stores radar, flight plan and noise data. The NFPMS covers eight city regions around Australia. For the Canberra region, noise data is captured by one noise monitor - also known as an Environmental Monitoring Unit (EMU) located at Jerrabomberra, 9km south of the airport.

Figure 1 Location of Canberra Airport. Runway orientation for airport is shown in the insert. The Environmental Monitoring Unit (EMU) is shown as a red dot.



Figure 1 shows runway configuration at Canberra Airport, which has two runways. The main runway 17/35 length 3283m is used for the majority of aircraft traffic. The shorter runway is 12/30 length 1679m and is used mainly by propeller aircraft. Information about runway selection is available on the Airservices website at www.airservicesaustralia.com/aircraftnoise/factsheets/.

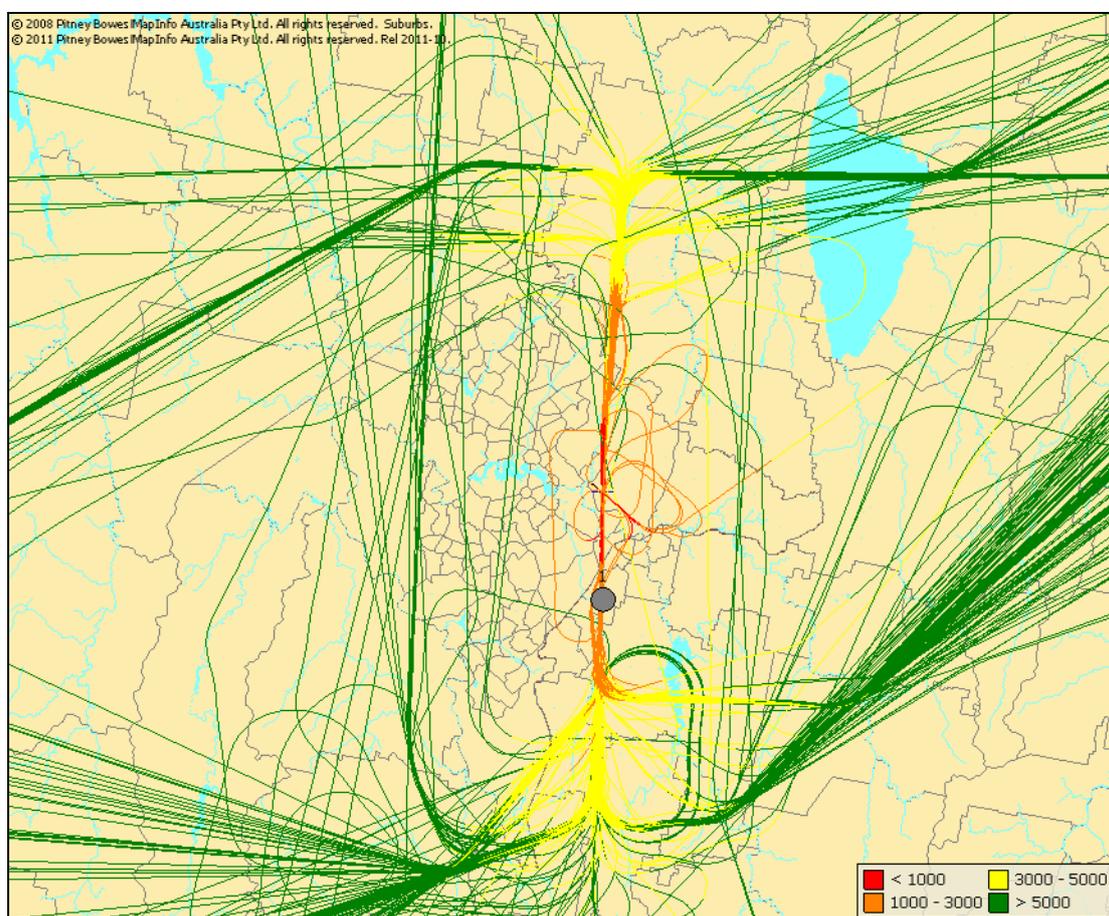
2. Flight patterns

A noise abatement area applies to most areas of Canberra and Queanbeyan. Aircraft will normally be routed to avoid the noise abatement area, which covers most of Gungahlin, North Canberra, Belconnen, South Canberra, Woden, Tuggeranong and Queanbeyan. Where it is not practical for aircraft to remain clear of those areas, overflight of the noise abatement area effectively restricts jet aircraft from flying below 5,000 feet (above ground level, AGL), and for large propeller aircraft 3,000 feet (AGL). A number of exceptions apply to the noise abatement areas such as aircraft emergencies, medical priorities and to avoid hazardous weather.

2.1 Jet aircraft

Figures 2 and 3 show jet aircraft track plots for arrivals and departures at Canberra Airport for Quarter 3 of 2012, coloured according to height (in feet) above the airport reference point. Noise monitors are shown as grey circles.

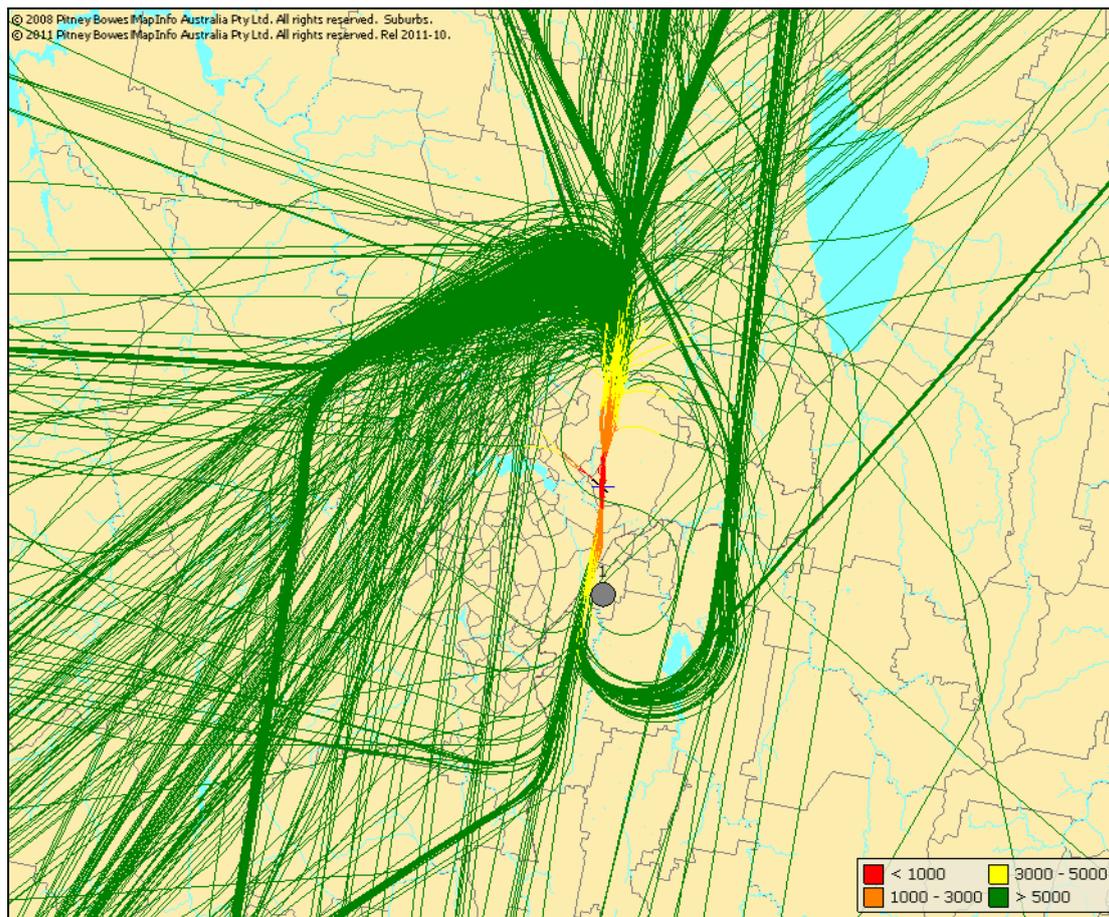
Figure 2 Jet arrivals for the Canberra region, August 2012 (one month)
Note the altitude of Canberra Airport is 1,870 feet above mean sea level (AMSL).



The key points shown by Figure 2 are:

- Jet aircraft generally avoid overflying residential areas of Canberra below 5,000 feet (AGL).
- The western part of Jerrabomberra (10 km south of the airport) is regularly overflown by arriving jets aircraft between 1,000 feet and 3,000 feet.
- A small number of jet circuits are conducted at the airport. These are below 3,000 feet (AGL)

Figure 3 Jet departures for the Canberra region, August 2012 (one month)
Note the altitude of Canberra Airport is 1,870 feet above mean sea level (AMSL).



The key points shown by Figure 3 are:

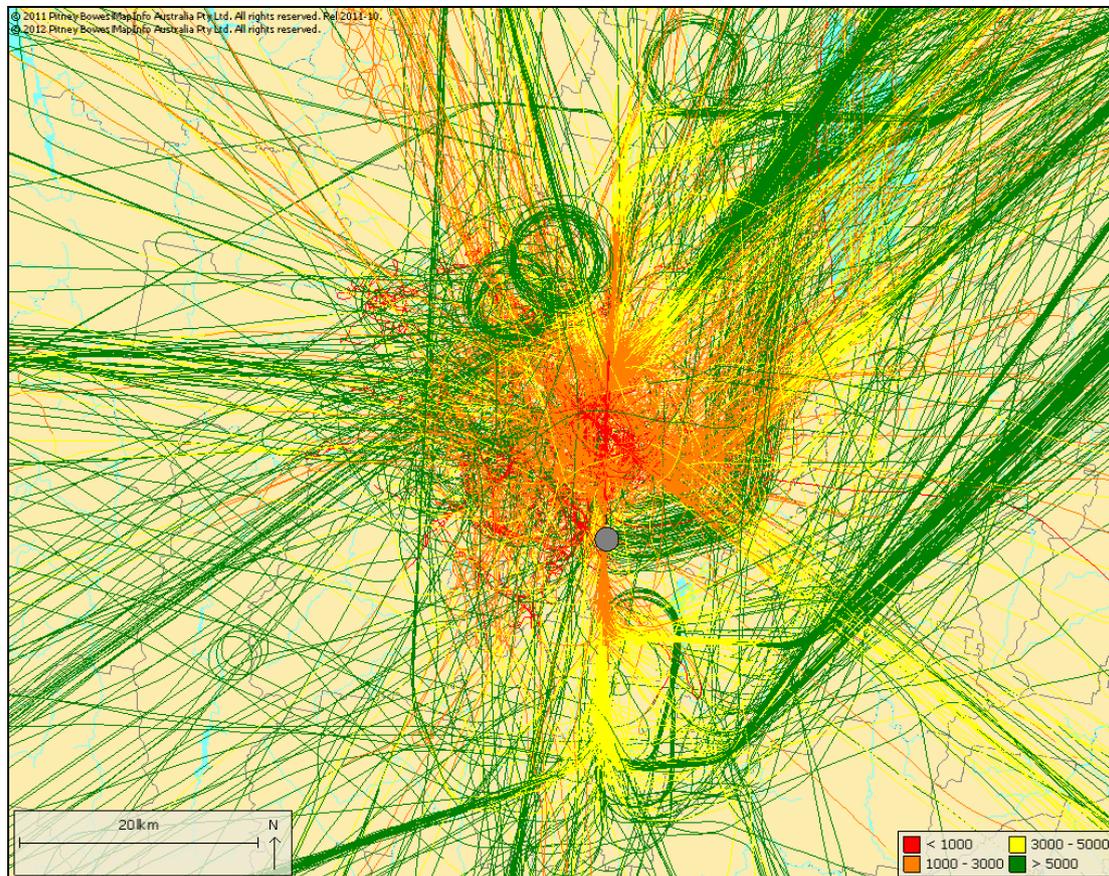
- Departing jet aircraft departing off Runway 35 (to the north) and turning to the south overfly Canberra suburbs above 5,000 feet.
- Jets departing to the south off Runway 17 turn to the west shortly after take-off to avoid overflying Jerrabomberra.

2.2 Non jet aircraft

Figure 4 shows non jet tracks (arrivals and departures) at Canberra Airport in Quarter 3 of 2012. Noise monitors are shown as grey circles.

Figure 4 Non jet arrivals and departures for the Canberra region, August 2012 (one month)

Note the altitude of Canberra Airport is 1,870 feet above mean sea level (AMSL).



The key points shown by Figure 4 are:

- Although jet aircraft tend to operate along defined paths, as shown in Figures 2 and 3, when smaller propeller movements are included on the map, there are no areas of Canberra that are not overflowed by aircraft at some stage.
- In Figure 4 aircraft overflying the suburbs of Canberra below 3,000 feet are smaller general aviation aircraft. Note. larger propeller aircraft (such as De Havilland Dash 8 or Aerospatiale ATR-75) do not overfly Canberra suburbs below 3,000 feet (AGL).

2.3 Track density plots

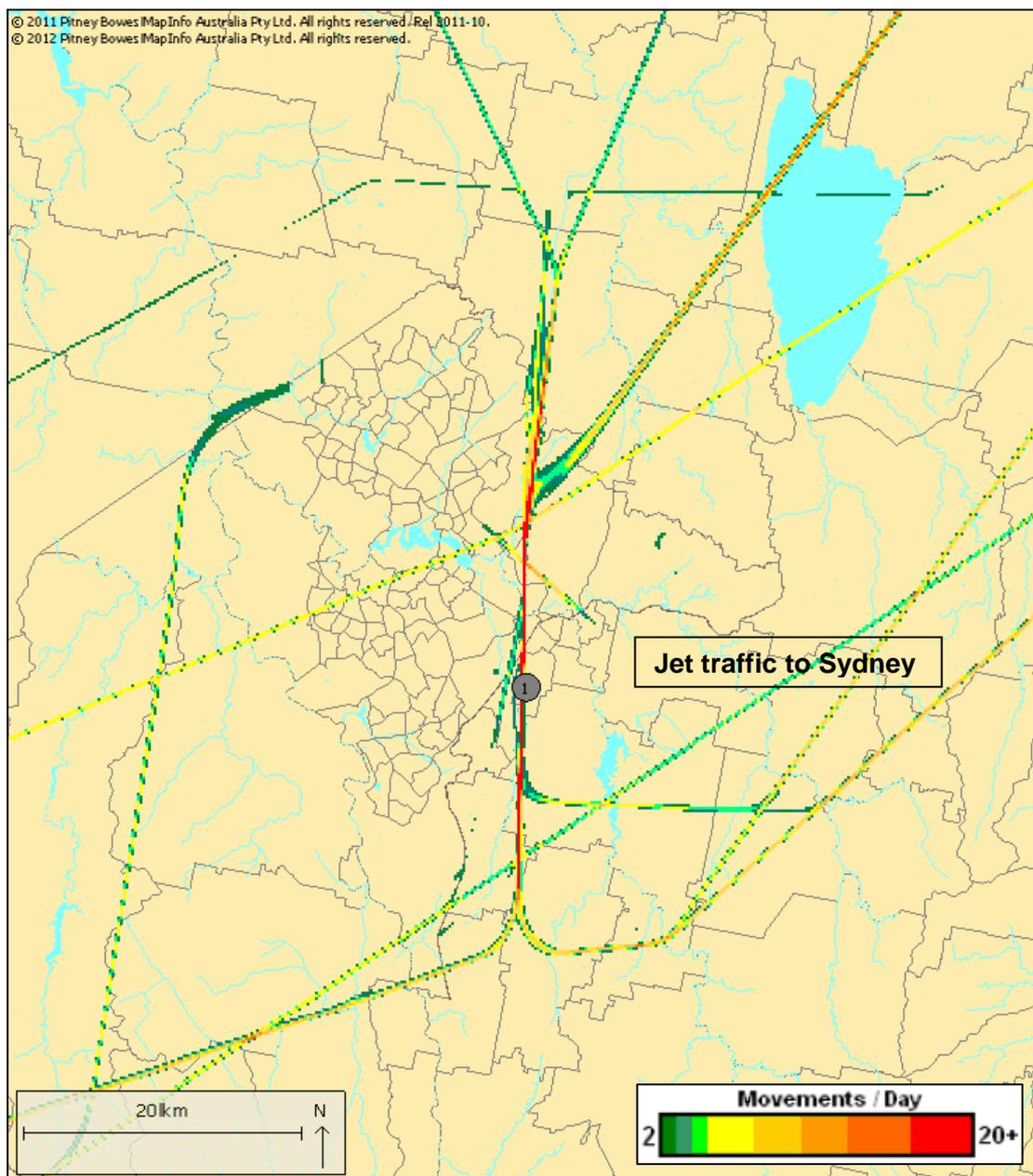
The track plots in the preceding section show that residents living up to 20km to the north and 20km to the south of Canberra Airport and in line with the airport's runways are regularly overflown by jet aircraft below 3,000ft (AGL). However, beyond this the regularity of flight path use is not discernible from the track plot display. A track density plot can be useful in showing the underlying track patterns.

To create a track density plot, the land surface is divided into squares, creating a grid. The average number of flights passing over each square per day is then calculated. By colour coding according to frequency of flights, a track density plot can be illustrated.

Figure 5 shows a track density plot for all movements over the Canberra region in Quarter 3 of 2012.

The noise monitor is shown as a grey circle.

Figure 5 Track density plot for the Canberra region, Quarter 3 of 2012



The key points shown by Figure 5 are:

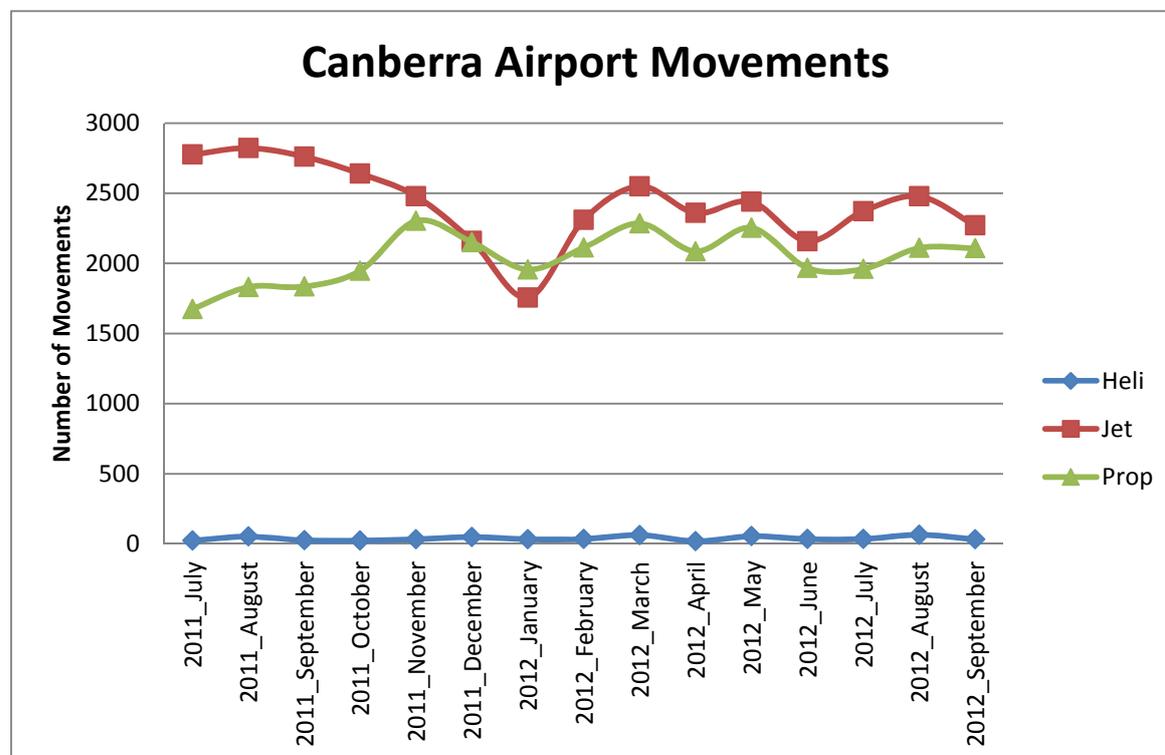
- Despite most areas of Canberra are overflowed by aircraft there are distinct flight path patterns.
- There is a flight path pattern associated with high jet level traffic overflying Canberra on their way to Sydney Airport. This has been labelled in Figure 5.

3. Aircraft movements

3.1 Airport movements

Figure 6 shows aircraft movements at Canberra Airport for the 15 month period to the end of Quarter 3 of 2012.

Figure 6 Aircraft movements at Canberra Airport from July 2011 to September 2012



The key points shown by Figure 6 are:

- The decline in jet movements between August 2011 and January 2012 is attributable to Tiger Airways ceasing to operate and QANTAS grounding its fleet in January 2012.
- Airlines respond to demand. Therefore the number of movements fluctuates more than at other airports, as demand in Canberra varies greatly according to public sector activity (notably the parliamentary timetable).
- The small increase in flights in July and August is also partly due to the ski season, which is a major source of tourism in the Canberra region.

Figure 7 shows runway usage for arrivals and departures at Canberra Airport for the 15 month period up to the end of Quarter 3 of 2012. Figures 8 and 9 show runway usage over a four year period for the two busiest runways at the airport.

Runway selection is based on weather conditions, traffic volume and noise abatement procedures. As the wind changes, the runway in use may change as aircraft primarily take off and land into the wind for safety and performance reasons. For noise abatement purposes the preferred direction of operation for aircraft using the main runway during daylight hours (7:00am—8:00pm) is in the 35 direction.

Figure 7 Runway usage at Canberra Airport to Quarter 3 of 2012

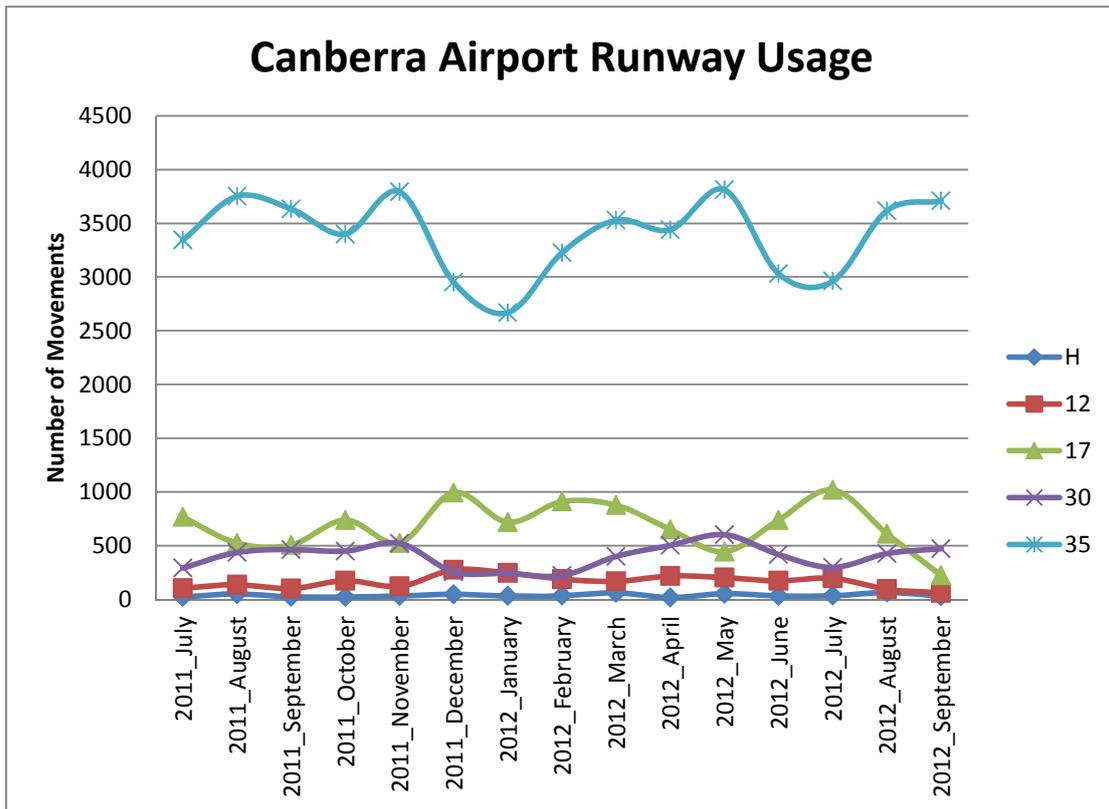


Figure 8 Runway 17 usage at Canberra Airport 2009 to 2012

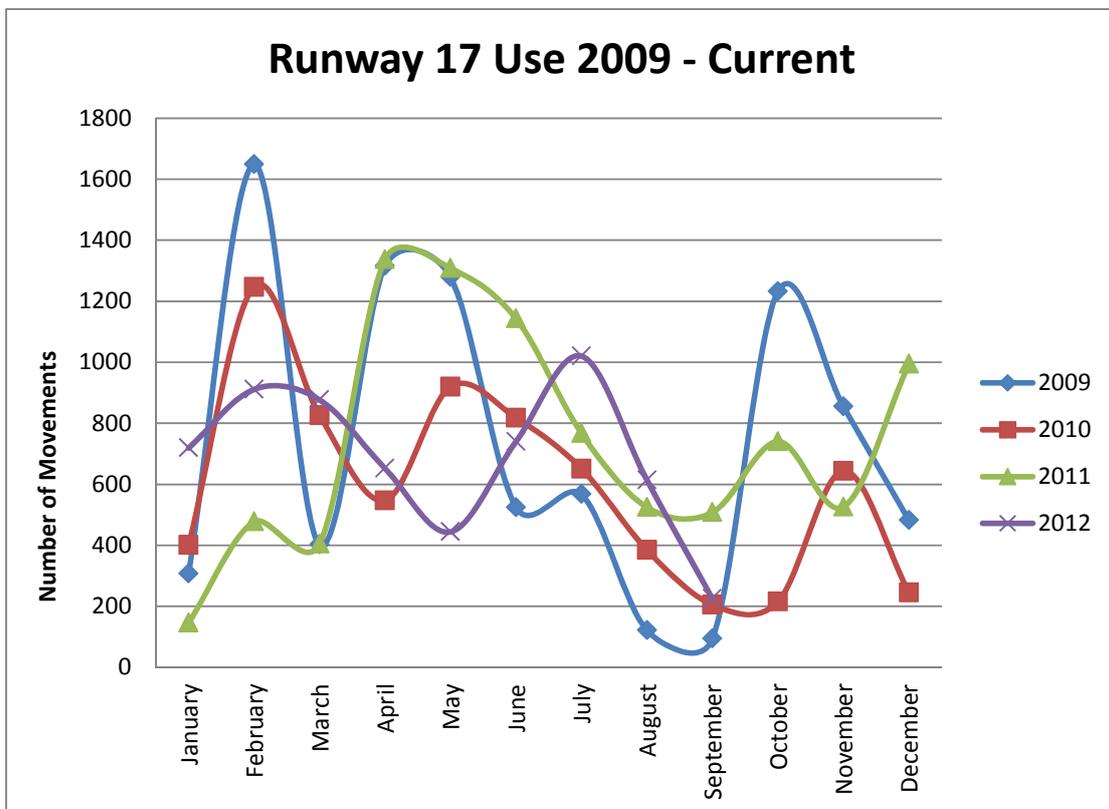
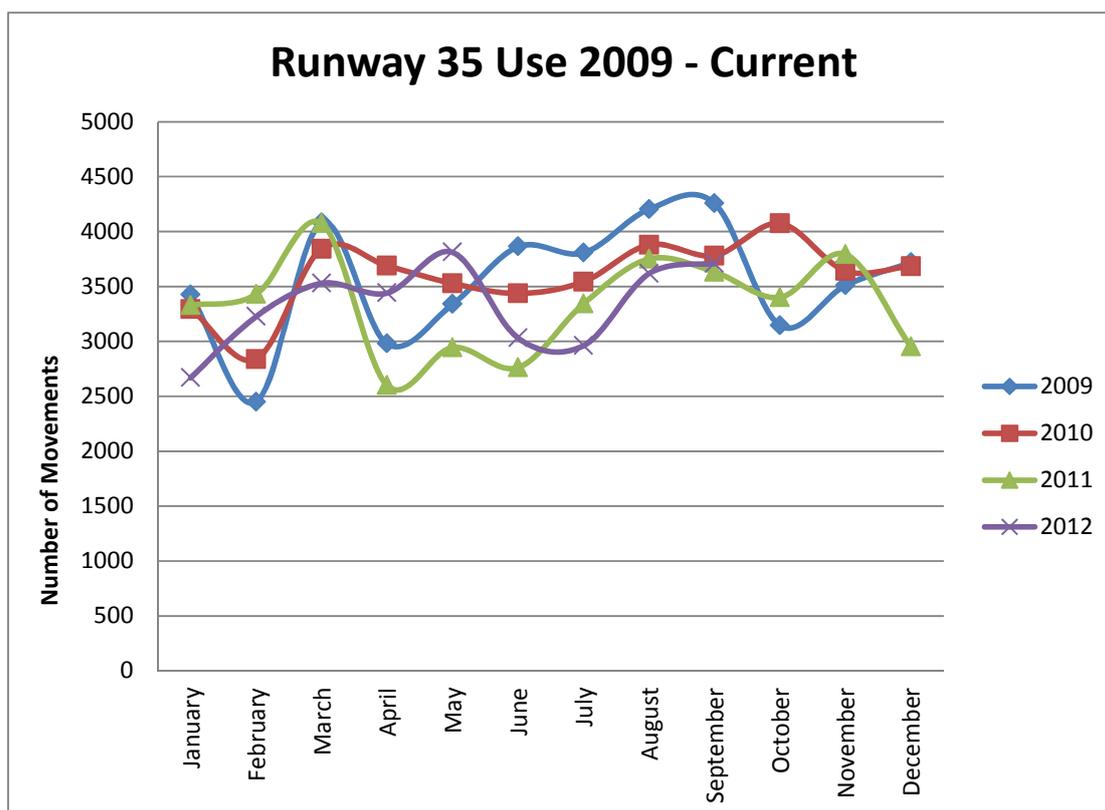


Figure 9 Runway 35 usage at Canberra Airport 2009 to 2012



The key points shown by Figures 7, 8 and 9 are:

- Runway 35 is by far the most used runway at Canberra Airport. This is largely due to prevailing winds in Canberra being from the north all the year round, and not seasonally as in other major Australian cities.
- In addition, Runway 35 has the best navigation aids of all runways at the airport, as well as high intensity lighting, which means that it is used more in foggy conditions.
- Under noise abatement procedures, the preferred runway for take off is Runway 35, so this runway is used for departures when conditions permit.

Figures 10 and 11 show aircraft movements during night hours (11.00pm to 06.00am) at Canberra Airport from July 2011 to September 2012, Figure 10 by aircraft category and Figure 11 by preferred runway (A17/D35).

Figure 10 Night movements (11.00pm to 6.00am) at Canberra Airport July 2011 to September 2012 by aircraft category

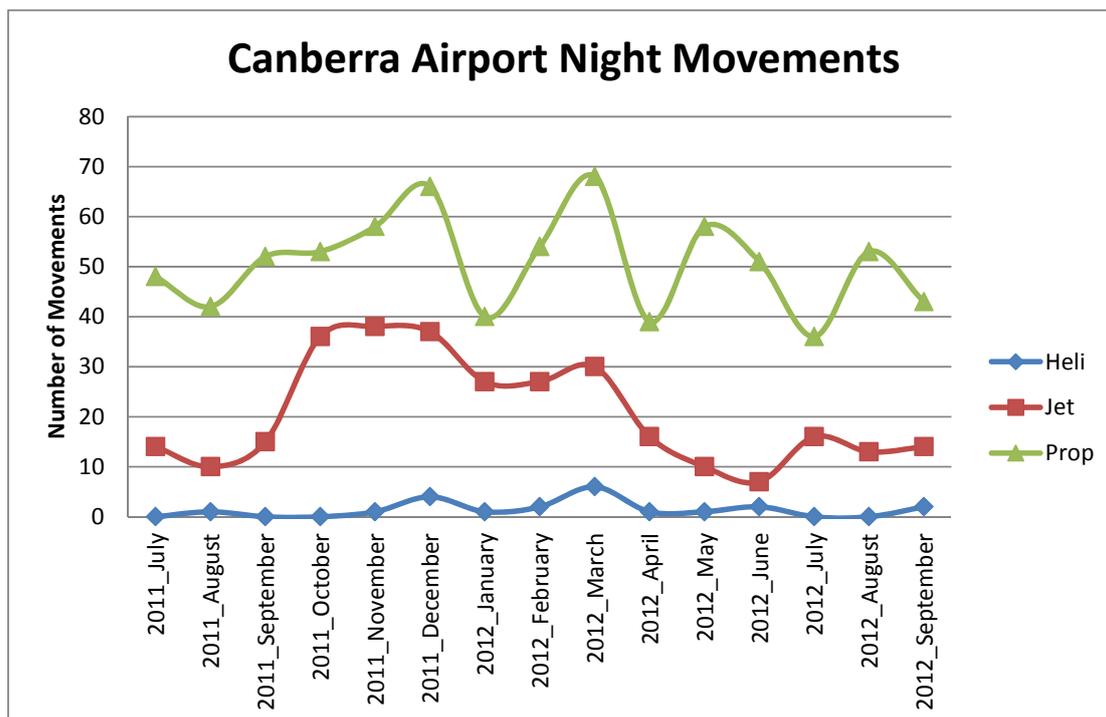
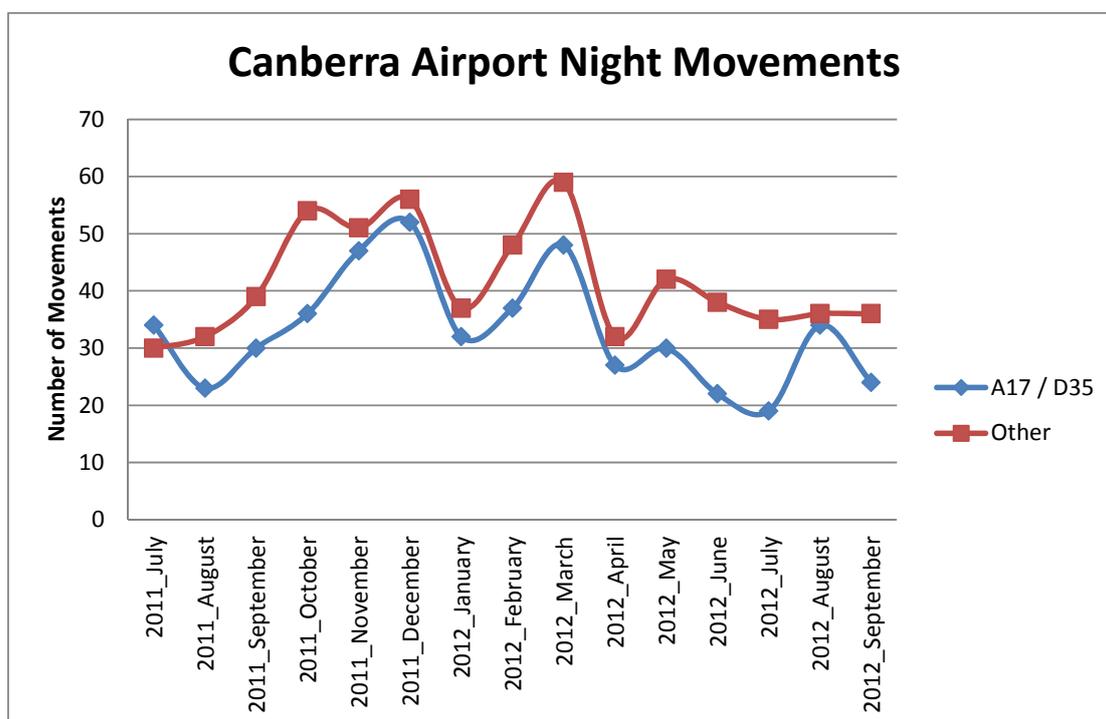


Figure 11 Night movements (11.00pm to 6.00am) at Canberra Airport July 2011 to September 2012 by preferred runway (A17/D35)



The key points shown by figures 10 and 11 are:

- The majority of the night movements are propeller aircraft. On average there are 1.3 propeller movements per night and 0.5 jets per night.
- In both December 2011 and March 2012 there were strong westerly winds, which meant that the preferred night time runway (arrivals to Runway 17 and departures from Runway 35) could not be used.

4. Noise monitoring

Airservices collects noise and operational data from noise monitors (EMUs) around Canberra 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 (dB(A)) as the unit of measure. The sound level of typical daytime urban-based activities can vary between 40dB(A) and 80dB(A). The sound levels in a nightclub often exceed 90dB(A).

Figures 12 and 13 show data from Canberra's noise monitor for the last fifteen months (see Figure 1 for the location of EMUs). The terms used within each of these figures are:

LAeq 24hr: The continuous equivalent noise level over a 24 hour period, including noise from aircraft and the wider environment.

LAeq night: The continuous equivalent noise level over the night time period (hours of 11:00pm to 6:00am)

Background L₉₀dB(A) (L90): The sound level that is exceeded 90% of the time over a 24 hour period – effectively removing noise from instantaneous events such as passing aircraft to provide a background level.

N65: The average number of daily noise events caused by aircraft that are over 65dB(A). Figures for N70, N80 and N90 are also provided.

Figure 12 Average daily noise events at EMU 1 (Jerrabomberra) from Quarter 3 of 2011 to Quarter 3 of 2012 (captures arrivals to Runway 35)

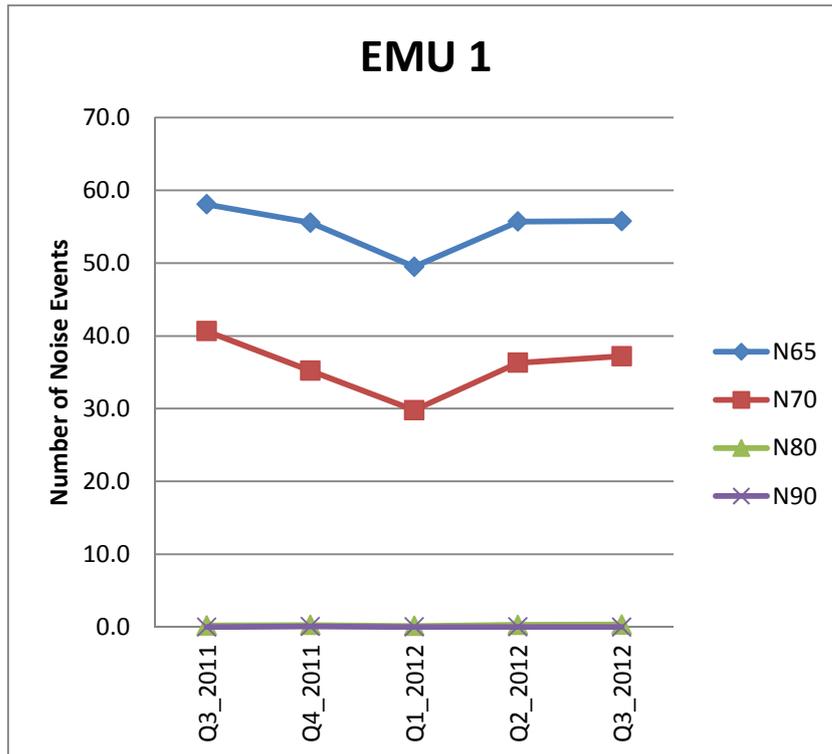
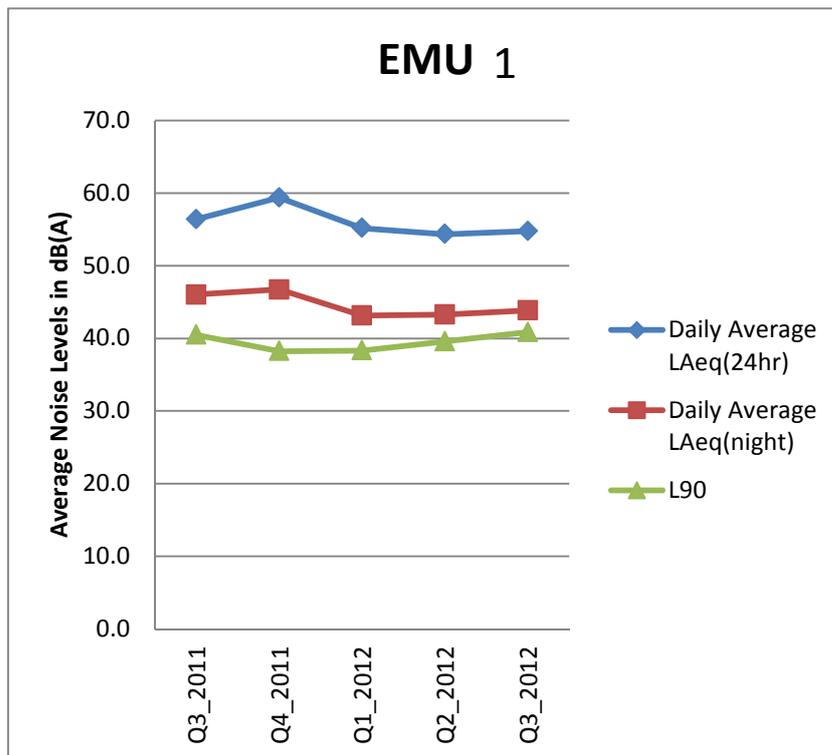


Figure 13 Average noise levels at EMU 1 to Quarter 3 of 2012



The key points shown by Figures 12 and 13 are:

- Noise from some jet departures off Runway 17 are captured by EMU 1 however these operations are offset from the monitor by several kilometres. The result is that at the monitor, arrivals are significantly louder than departures.

- The reduction in the N65 and N70 noise events in Quarter 1 of 2012 is a direct result of the reduced number of jets using the airport during this quarter.

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 client.

5.1 NCIS Clients by suburb

The NCIS received contacts from 11 clients from Canberra Airport during Quarter 3 of 2012. Client density maps are used to show the number of clients from each suburb, with suburbs coloured according to how many clients had contacted the NCIS. The data does not include clients who contacted other organisations (eg. airports).

Table 1 provides a breakdown of clients from July to September 2012.

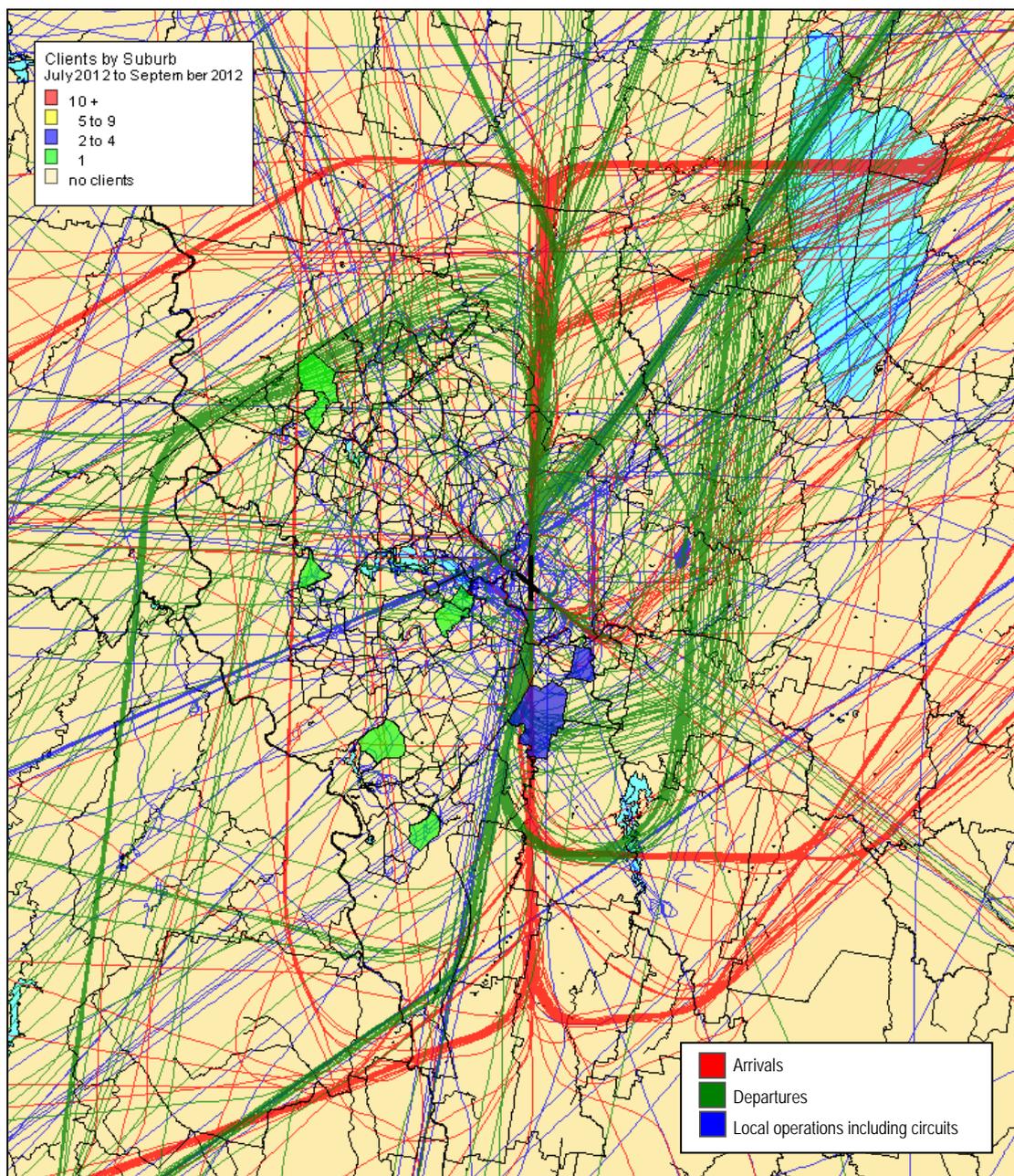
Figure 14 shows client density with sample flight tracks overlaid for Canberra Airport for Quarter 3 of 2012.

Table 1 Recorded Contacts July to September 2012

Suburb	Clients
FLYNN	1
FRASER	1
GRIFFITH	1
JERRABOMBERRA	2
KINGSTON	1
QUEANBEYAN	2
THEODORE	1
WANNIASSA	1
WESTON CREEK	1
TOTAL	11

Table 1 shows that the only suburbs with more than one complainant in Quarter 3 of 2012 were Jerrabomberra and Queanbeyan.

Figure 14 Client density by suburb with an overlay of tracks for sample period 6 July, 1 August, 20 August and 14 September 2012 at Canberra



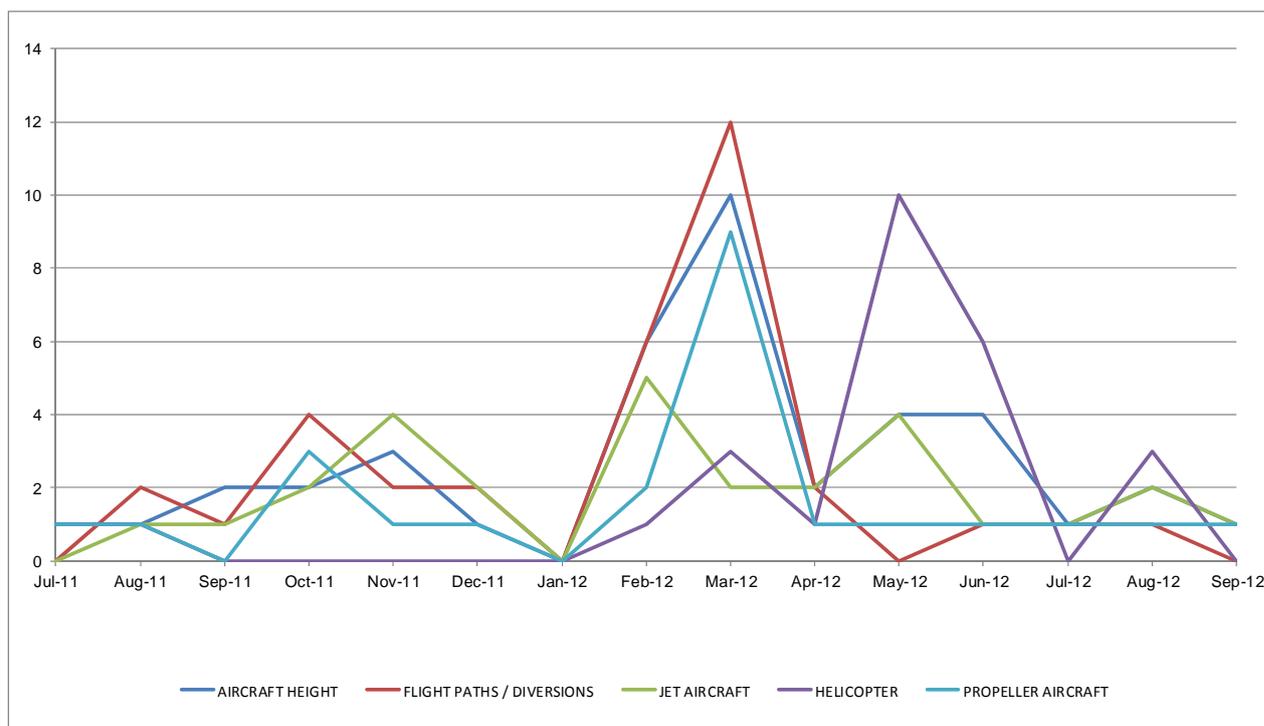
The key points shown by Figure 14 are:

- The suburb of Jerrabomberra is affected by both jet arrivals and departures from Canberra Airport.
- The suburb of Queanbeyan tends to be overflowed more by general aviation rather than jets.
- Complainants from suburbs to the west of the airport (closer to the centre of the city) tend to be affected mostly by helicopter operations.
- Suburbs to the south west of the city are in a no fly area. However, aircraft are permitted to fly in this area if they need to make a missed approach or are diverted by air traffic control (for example due to adverse weather conditions).

5.2 Issues raised by NCIS clients

Figure 15 shows the top five issues raised by clients for Canberra Airport for the 15 month period to the end of Quarter 3 of 2012. A single contact can involve multiple issues (ie. a complainant may have raised more than one issue when they contacted the NCIS). During Quarter 3 of 2012, the issues raised by the greatest number of clients were: Aircraft Height, Flight Paths / Diversions, Jet Aircraft, Helicopter and Propeller Aircraft.

Figure 15 Top five issues for Canberra Airport for the 15 month period, July 2011 to September 2012



The key points shown by Figure 15 are:

- The increase in complaints in February and March 2012 could be due to people noticing aircraft noise more after the slump in aircraft movements in December 2011 and January 2012.
- In addition, Canberra is prone to thunderstorms in late summer, which means that aircraft are often required to fly over areas where residents are unaccustomed to aircraft noise at this time.
- There was a significant increase in complaints about helicopter movements in May and June 2012. Most of the movements that were the subject of complaints were emergency service flights or flights made by the military.

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 NSW 1460.

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