

Investigation Report

Increased General Aviation activity during the COVID-19 pandemic at Gold Coast Airport

Noise Complaints and Information Service
May 2020



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1. Purpose

This investigation was conducted in response to an increase in complainants regarding general aviation activity (including training) at the Gold Coast Airport Limited (GCAL). Complainants increased in March and April of 2020 as a change in normal operations at the Gold Coast Airport occurred due to the COVID 19 pandemic. The purpose of this investigation was to:

- determine the nature and volume of the activity
- review the compliance with published procedures
- identify and assess any opportunities for noise improvements
- make recommendations, if appropriate.

2. Methodology

The investigation included:

- analysis of issues raised by complainants
- analysis of flight data using the Airport Noise and Operations Management System (ANOMS) software
- discussion with Gold Coast Airport Limited (GCAL)
- discussion with air traffic control at Gold Coast Airport
- discussion with local operators.

3. Role of Airservices and other agencies

Airservices is an air navigation service provider (ANSP). We provide air traffic control and airport firefighting and rescue services, design flight paths in controlled airspace and manage noise complaints nationally.

Under the *Air Services Act 1995 (the Act)*, in exercising its functions Airservices must regard the safety of air navigation as the most important consideration (at 9(1)). Subject to this, Airservices must carry out activities to protect the environment from the effects of aircraft operations (at 9(2)).

The Act does not confer powers to stop or limit particular types of aviation activity. Therefore, Airservices cannot require general aviation (GA) activities to cease, nor limit their hours of operation or the number or frequency of flights, other than for reasons of the provision of safe air traffic management. Airservices also does not have any powers to require an airport to close or move operations.

As the GA activities in question are taking place within controlled airspace, each flight is under the direction of air traffic control. Airservices may need to change the way these flights are managed on a daily and tactical basis.

The Civil Aviation Safety Authority (CASA) is Australia's safety regulator. CASA sets down rules that govern the safety-related activities of pilots, aviation operators and air traffic control. Relevant legislation and regulations include the *Civil Aviation Act 1988*, *Civil Aviation Safety Regulations 1998*, *Civil Aviation Regulations 1988* and Manual of Standards that apply to air traffic management, aircraft registration, airworthiness and flight operations. The Civil Aviation Regulations set down the rules that control how the circuit works and where it is located.

GCAL sets down circuit training hours and negotiates leases with flight training and other aviation operators for hanger space and use of the airport.

Federal regulations control aviation safety and regulate aircraft noise. Under the *Air Navigation (Aircraft Noise) Regulations 1984*, before an aircraft may fly in Australia it must meet international noise standards that apply to the design and production of aircraft. These standards specify the amount of noise that may be emitted by an aircraft type or model. Aircraft that do not meet these standards are prohibited from flying in Australia.

No agency is empowered to take action against aircraft that exceed a specific noise level while in flight. This is because there is no regulated maximum noise level for aircraft flying over residential areas. Similarly, no legislation or regulation specifies a maximum level of aircraft noise that a community can be exposed to.

4. Complaint analysis

A review of complaint data held by the Noise Complaints and Information Service (NCIS) shows that from 1 January 2019 to 1 January 2020, 248 residents complained of aircraft operations at the Gold Coast Airport.

Six residents were concerned with normal GA operations tracking via the standard routes, and a further five residents were concerned with training operations.

For the period January to April 2019 the complainant numbers for issues of GA traffic and training were 37.

Table 1 provides a comparison of complainant numbers for the issues of GA traffic and training for January to April 2020. Note a complainant may contact us in one or more months and is registered as a complainant in both months.

Table 1: Complainant numbers by Issue January to April 2020.

Issue	Case Classification	January	February	March	April
Training	Fixed wing circuit training	0	0	2	33
	Training Area	0	0	1	2

Complainants concerned with circuit training in March and April 2020 came from eight suburbs, being both north and south of the airport:

1. Coolangatta, 11 complainants
2. Tweed Heads, 10 complainants
3. Tweed Heads West, nine complainants
4. Currumbin Waters, one complainant
5. Tugun, one complainant
6. Kirra, one complainant
7. Banora Point, one complainant
8. Tweed Heads South, one complainant.

These are depicted in Figure 1.



Figure 1: Suburbs that submitted complaints, reference to Gold Coast Airport. *Source: NCIS database*

4.1. Issues Summary

A breakdown of the nature of the concerns most frequently raised is presented in Figure 2. Some complainants raised more than one concern and these are counted more than once.

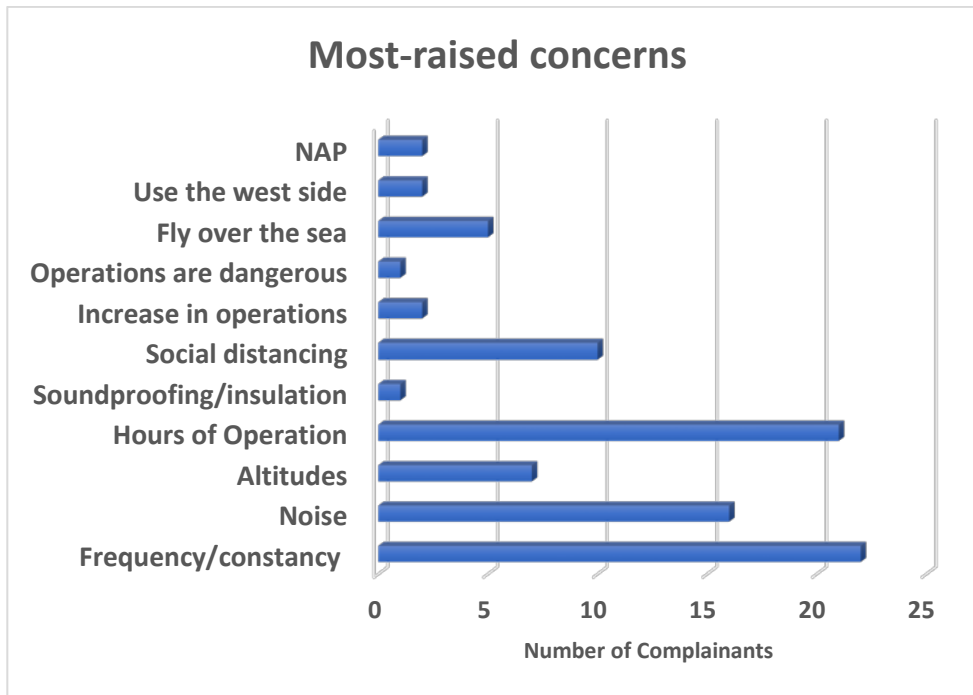


Figure 2: Concerns raised by complainants

Issues raised by complainants included noise and annoyance related to the following.

4.1.1. Frequency/constancy

The constant nature of circuit training and the frequency of movements was the most-raised concern. Descriptions of the activity included:

- Extremely loud and low repeatedly
- This is not the first time
- Excessive small aircraft
- Occurring last week, day and night and is continuing this week
- Small aircraft repetitively over my property
- Consistently every day

4.1.2. Noise

Residents generally related their concerns about noise to the disruption it caused to specific activities, such as television viewing, enjoying the backyard, talking on the phone, entertaining, and trying to sleep or get children to sleep.

Other complainants sought some form of policing of the noise to determine if it was “too much noise”.

4.1.3. Altitudes

Many complainants raised the low altitude of the aircraft.

4.1.4. Hours of Operation

Complainants raised concerns that with the training commencing at 07:00 am, and continuing until late in the evening it was disturbing their sleep. Complainants advised the activity continued until 8:30pm.

4.1.5. Soundproofing/Insulation

Complainants felt that they should be provided with some sort of soundproofing or insulation for their homes to reduce the impact of noise.

4.1.6. Social distancing

Complainants were distressed because they were staying at home to comply with the Government directives and that they could not avoid the noise or activity. They also were concerned that social distancing requirements were not applied within the aircraft.

4.1.7. Increase in operations

The following are excerpts from some complaints received relating to operations:

- 34 passes over our roof
- Practising incessantly
- The third week of daily aircraft noise
- We are suffering between 3 and 10 minute intervals
- All day long.

4.1.8. Operations are dangerous

Complainants raised concerns regarding previous incidents in other states with training operations. Additionally, they were concerned that the low altitudes increased the risk of an accident.

4.1.9. Fly over the sea/Use the west side

Many complainants asked why the aircraft could not fly further out to sea, or why they could not operate on the other side of the airport.

4.1.10. Other suggestions

Several complainants requested that ATC manage flights differently, including:

- Further restricting training aircraft
- Increase the circuit size
- Track aircraft further out over water.

5. Circuit training

Circuit training is the first stage of practical pilot training focused on take-offs and landings and therefore it can only take place at an airport. It involves the pilot making approaches to the runway, touching down and then applying power to take off again. This is undertaken in accordance with CASA Regulations, which are consistent with international practices. An instructor accompanies student pilots until they have reached a required standard of proficiency.

Circuit training may be conducted at later stages of training also, for example:

- when learning night flying
- when qualified pilots are learning to fly a different model of aircraft
- for qualified pilots to retain recency.

However new students conduct the majority of circuit training.

In 2017, the NCIS conducted an investigation into complainant numbers and circuit training at the secondary airports across Australia. This investigation found that the greatest number of complainants, across all the secondary airports occurred near the crosswind and base legs (see Figure 5 below).

This is aligned with the complainant numbers at the Gold Coast, with the greatest number of complainants occurring in the suburbs of Coolangatta, Tweed Heads and Tweed Heads West.

5.1. How circuits are conducted

A training circuit consists of five legs – the take-off, crosswind, downwind, base and final approach to the runway.

Aircraft take off into the wind, climb to 500 feet and then turn onto the crosswind leg. They continue to ascend to 1000 feet and turn onto the downwind leg. Having turned onto the base leg the descent commences. After turning onto the final leg and lining up with the runway, the aircraft will touch down and take off again.

Circuits may be conducted to the left or the right. Left-hand circuits are the default in Australia and this is set by CASA.

For left-hand circuits, the pilot turns left after take-off and flies anticlockwise. For right-hand circuits, the pilot turns right and flies in a clockwise direction. At most, airports the circuit direction depends on which runway is in use.

The choice of runway is primarily dependent on the wind conditions. This is because the take off and final leg of the circuit is flown into the wind, as this is the safest way for an aircraft to operate.

A simplified representation of a left-hand circuit is presented in Figure 5. The aircraft symbols and dotted lines indicate recommended ways for an aircraft to join the circuit pattern.

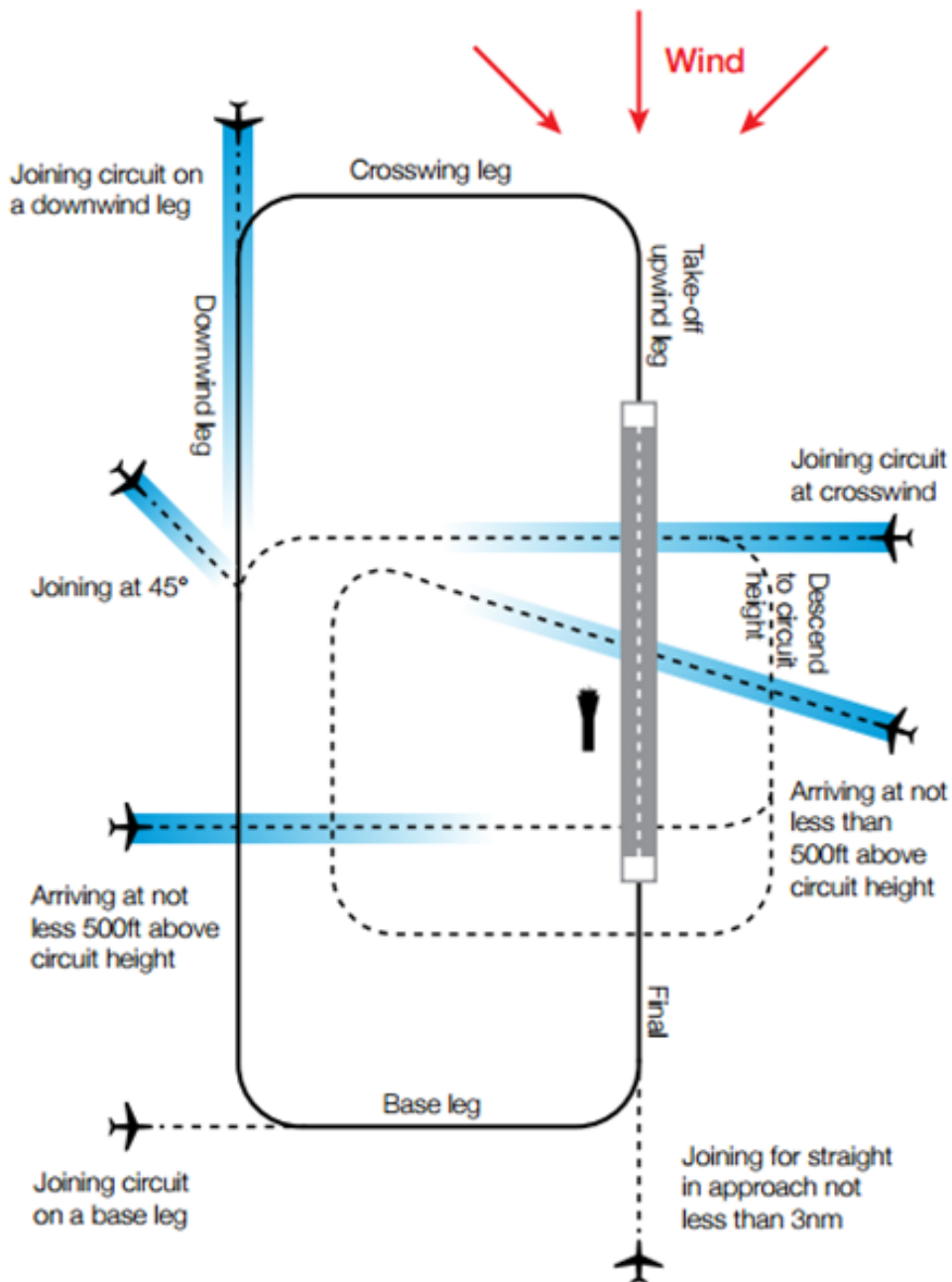


Figure 5: Simplified left-hand circuit

5.2. How circuits are managed by air traffic control

The role of air traffic control is to safely and efficiently manage air traffic into and out of airports, both in the air and on the ground. Broadly, this includes managing the flow of traffic in and out of the airspace of airports, movements on the ground to and from runways, guiding pilots during take-off and landing, and monitoring flights en route, while ensuring that safe separation between each aircraft is maintained at all times.

Air traffic control systems and processes are designed to minimise complexity for air traffic controllers and pilots as far as possible. One of the key ways that complexity is controlled in air traffic control is by using standard procedures that are published and predictable for both pilots and controllers.

To ensure safety and the efficient movement of air traffic, air traffic controllers will instruct pilots to ascend or descend to a certain level, to turn right or left and to change speeds as necessary.

5.3. Normal Operations at Gold Coast Airport

During normal operations, ATC often adjust the circuit of training aircraft so that they can be processed in between jet operations. This may include extending the downwind leg to apply the required wake turbulence standard. This practice effectively provides a noise mitigation as the size of the circuit is varied.

Due to the complexity of managing training aircraft in close proximity to jet aircraft, circuit training operations are mainly conducted on the western side of the runway. This removes the training area from conflicts with arriving jet aircraft, local parachuting operations and other coastal traffic, such as shark patrol aircraft.

Training aircraft are also limited in the number of circuits that they can conduct due to managing the other traffic operating at the airport and the limited ability for these aircraft to be processed between arrivals and departures.

6. Investigation

In response to the issues raised by the complainants, the following provides an overview of normal circuit operations, changes due to the COVID-19 operations and a review of the compliance of operations in accordance with published procedures. Specifically the issues raised by complainants are addressed.

6.1. COVID-19 Operations

There has been a marked reduction in scheduled jet operations at Gold Coast Airport as a result of the COVID-19 pandemic. While aircraft are still required to book their training with ATC, due to the limited other operations at the airport, ATC are able to provide a greater service to these aircraft. There are also a number of changes to operations:

- Circuits are now being conducted in closer proximity to the airport, as there is not requirement to apply wake turbulence separation between training aircraft and jet operations,
- More aircraft can access booking times, as there is more capability to manage these operations.
- Transit aircraft are utilising the capability and conducting a touch and go prior to landing or departing.
- Each aircraft also has an increased ability to conduct more circuits.
- Aircraft are now operating evenly on the east and western sides of the airport.

6.2. Noise Abatement Procedures

Instructions for Training and Airwork flights, and Noise Abatement Procedures (NAPS) at GCAPL are provided in Aeronautical Information Publication (AIP) En Route Supplement Australia (ERSA). An excerpt is provided below.

NOISE ABATEMENT PROCEDURES

1. A Curfew and Noise Abatement Procedures apply. See AIP DAP.
2. The preferred RWY for takeoff and landing is RWY 14.
3. Circuit training:
 - a. Not permitted BTN 1200-2000 UTC;
 - b. Where possible circuits should be distributed equally left and right of the RWY in use.
4. Preferred flight paths for turbojet and non turbojet ACFT ABV 5,700KG MTOW are contained in AIP DAP.
5. Outside TWR HR pilots are requested to use the same RWY for DEP and ARR - if operationally acceptable.

Flight information from the Airservices ANOMS database provides a pictorial representation of GA and training operations in April. Information presented in Figure 3 is for a two-week data capture between 1 and 14 April 2020.

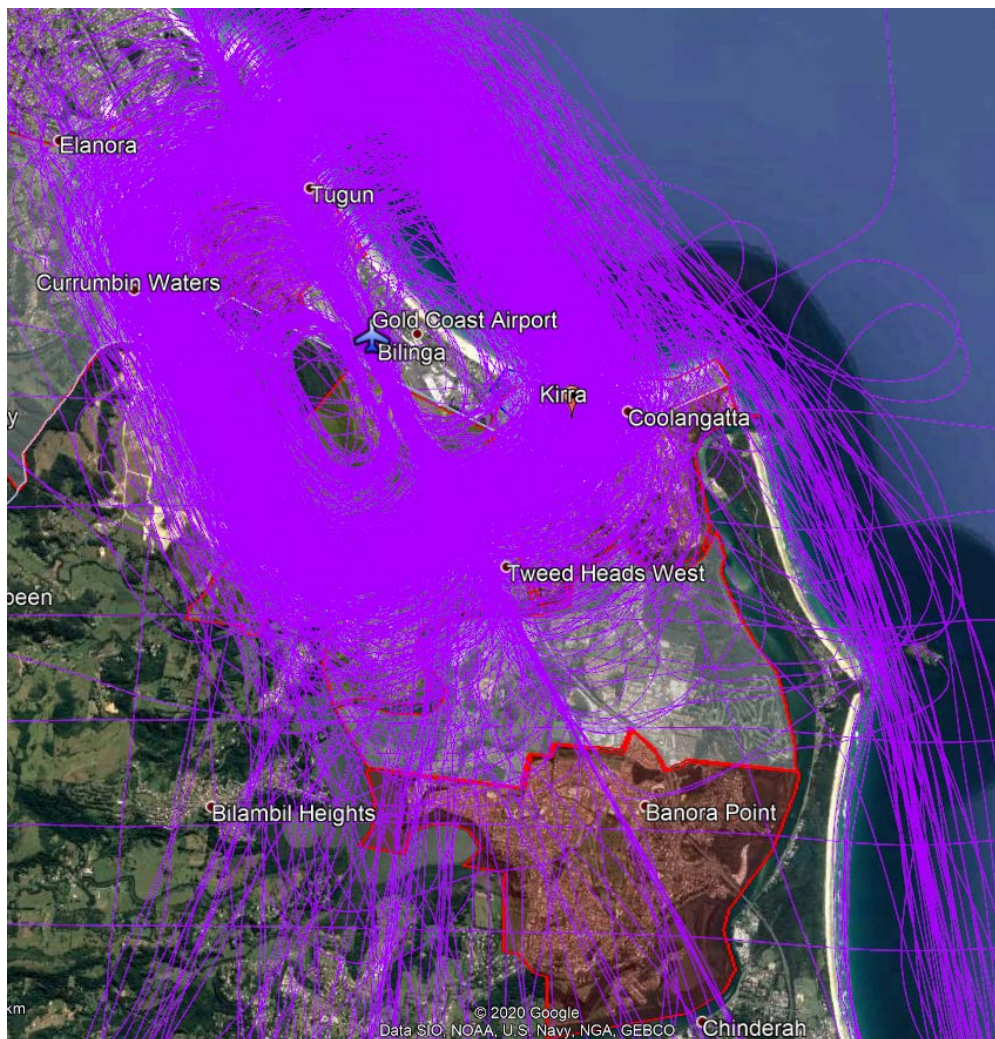


Figure 3: Two weeks of circuit training between 1 and 14 April 2020. *Source: ANOMS*

To better analyse data, a two-day period for 14 and 15 April 2020 was also obtained (Figure 4, captured 62 aircraft movements (however each flight may have included up to 10 circuits prior to landing)).

The images indicate that circuits have been shared on both the eastern and western side of the airport, in compliance with AIP ERSA requirements.

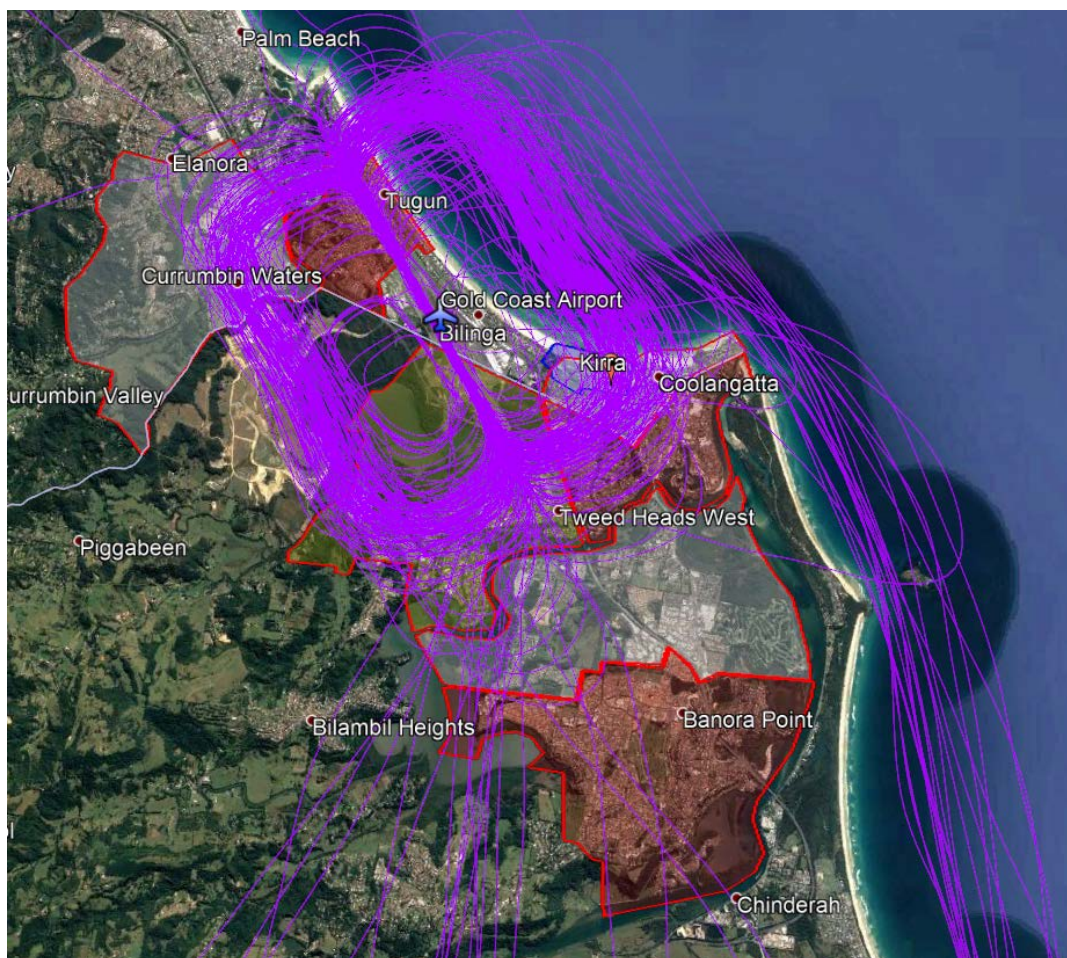


Figure 4: Two days of circuit tracks – 14 and 15 April 2020. Source: ANOMS

6.3. Response to issues

Frequency/constancy

Due to the marked reduction in scheduled jet operations at Gold Coast Airport as a result of the COVID-19 pandemic, ATC are able to provide services to an increased number of GA training aircraft, and these have an ability to conduct more circuits. This is being safely managed by ATC in accordance with the requirements stipulated in AIP ERSA.

Noise

The change in operations will result in a change in the noise experienced by residents in the areas of these operations. As described in Section 3, there is no regulated maximum noise level for aircraft flying over residential areas. Similarly, no legislation or regulation specifies a maximum level of aircraft noise that a community can be exposed to.

Airservices continues to work closely with GCAPL and flight training operations to promote adherence with Fly Neighbourly procedures. Refer Section 7.

Altitudes

Aircraft are operating according to the circuit training requirements as defined in AIP ERSA. As the maximum altitude reached is 1,000 feet in the circuit, it can seem to residents that the aircraft are constantly climbing and descending.

Hours of Operation

At Gold Coast airport, any aircraft that wishes to conduct circuit training must book a certain time with ATC. Local instructions allow for two circuit bookings between 06:00 and 22:00 local, with a third available at the discretion of ATC. This requirement is to ensure that ATC are able to safely manage training aircraft with jet arrivals and departures.

Immediately prior to the COVID-19 pandemic, circuit training had been reduced to only one aircraft between the hours of 08:00 and 16:00 to manage demand and capacity balancing requirements.

A random sample of two weekdays, each from February, March and April, was analysed to show the difference in demand pre- and post COVID-19 (Table 2). It is important to note that, in each half hour period, several circuits could be conducted dependent upon other traffic.

GCAPL is in discussion with flight training organisations regarding the hours of operations, to reduce the impact on residents during the evening and night-time periods. Section 7 refers.

Table 2: Comparison of hours booked using the ATC booking system

	12 -13 Feb 2020	12-13 March 2020	7-8 April 2020
Total number of half hour slots for circuit A	22	23	37
Total number of half hour slots booked for circuit B	0	2	38
Total number of half hour slots booked for other circuits	0	0	6

Soundproofing/Insulation

It is not within the remit of Airservices to provide compensation. In the past, the Department of Infrastructure, Transport, Cities and Regional Development (previously the Department of Infrastructure), ran insulation programs for homes and buildings in certain areas affected by aircraft noise in Sydney and Adelaide. These programs are now closed. The Government has not indicated an intention to conduct further noise insulation programs or to provide compensation to residents affected by aircraft noise. There is no precedent in Australia for the Government providing such compensation.

Social distancing

The Federal Government has only listed non-essential services in accordance with the following list:

<https://www.business.gov.au/risk-management/emergency-management/coronavirus-information-and-support-for-business/restrictions-on-non-essential-services>

All other services are able to continue operations.

Training flights are services and provide employment and they will continue until advised. Flight schools can continue to train students, but workplace health and safety protocols, and

consequences and contingencies, should be observed and considered to a much higher degree than usual.

These include, disinfecting and regular wiping down of surfaces in the cockpit and confines; questioning student pilots about any recent overseas travel, any sickness, any contact with confirmed Coronavirus cases; the wearing of face masks and other requirements.

Increase in operations

The increase in operations is a direct result to the changes of operations as a result of the marked reduction in scheduled flight operations to Gold Coast Airport as a result of the COVID-19 pandemic (Refer Section 6.1).

Operations are dangerous

Safety is Airservices most important consideration and these operations are being managed by ATC and are being conducted in accordance with published standard procedures (Refer Section 5)

Fly over the sea/Use the west side

Discussion with Gold Coast Tower ATC and a review of the ANOMS data indicates that aircraft are utilising each side of the airport, in accordance with AIP ERSA. Refer Section 6.2

Further restricting training aircraft

Airservices role is to manage air traffic in a safe and orderly manner. As described in Section 3, Airservices has no powers to require particular types of activities to reduce or cease.

Increasing the circuit size

The size of the circuit is dependent upon the type and speed of the aircraft conducting the circuit. Generally, the faster the speed, the larger the circuit flown. As the majority of aircraft utilising the circuit at the Gold Coast Airport are under 5700kg Maximum Take Off Weight (MTOW), increasing the size of the circuit would need to be managed by ATC.

This would increase the complexity of operations for ATC and increase the risk to safety; it is not something we can consider.

Additionally, any increase in the circuit would still affect residents further from the airport; moving noise from one area to another is not considered a noise mitigation.

Tracking aircraft further over water

Figures 3 and 4 show that eastern circuits, once established on the downwind leg, are over water. Extending them further over water will create conflicts with any coastal traffic and is not something that we will consider.

Furthermore, sound carries further over areas such as open space and water. To achieve any noticeable decrease in noise these aircraft would need to move out considerably. This is also not possible due to CASA requirements that state:

In the case of a single engine aircraft, when the aircraft is over water and at a distance from land, they must remain at a distance, that would allow the aircraft to reach land in the event of an engine failure (CAO 20.11 para 5.1 refers).

7. Discussion with stakeholders

7.1. Discussions with Gold Coast Airport

The Gold Coast Airport has worked cooperatively with the NCIS and other areas of Airservices in seeking a resolution to complainants' concerns. They have:

- Engaged early with local flight schools and came to an agreement to finish night circuits at 21:00 rather 22:00 as per the Noise Abatement Principles (see section 4.9)
- Requested flight schools to reduce the number of aircraft in the circuit at any one time
- Encouraging all flight schools to complete circuits by 20:00 (not yet confirmed)
- Continuing to liaise with flight schools as requested
- Subject to a complaint from an outlying airfield that had identified an aircraft from one of the Gold Coast flight schools, Gold Coast Airport again wrote to the flight schools requesting they follow that airports fly neighbourly as well

7.2. Discussions with Gold Coast flight schools

The NCIS conducted conversations with three major flight schools and found the following:

- All three schools training activities were severely impacted during the bush fire crisis due to smoke, resulting in a backlog
- One school's operations were expected to decrease due to their students being mainly international
- The other two school's students were domestic so these operations are expected to continue
- As there are no jet operations they are able to conduct more circuits in each sortie
- The good weather in April allowed continued operations and circuits were continued until 22:00
- Two schools have voluntarily offered to cease operations at 21:00 and if possible 20:00.

8. Conclusions

The aircraft noise impact of circuit training at the Gold Coast Airport is a direct result of the COVID-19 pandemic and the reduction of jet and other scheduled flight operations at the Gold Coast Airport.

This has provided the opportunity for training operations to increase as they are not restricted by jet operations. However, these operations must comply with the requirements defined in AIP ERSA for Gold Coast Airport.

This investigation has found that Airservices ATC are complying with Noise Abatement Procedures when providing circuit training, including distributing between the east and west sides of the airport.

Flight training schools and Gold Coast Airport have worked together to provide a reduced service which provides a slight noise mitigation to residents in the evening.

The NCIS has been unable to find any further recommendations to mitigate this unexpected noise increase, as Gold Coast Airport and the flight schools have already adopted measures in response to community concerns.

The result is a temporary change to operations and resultant change to the experience of aircraft noise in certain suburbs that is distressing to some residents. This is acknowledged, and the impact upon some residents has been further exacerbated by government requirements to stay at home during the COVID-19 pandemic.

When this current COVID-19 health crises passes, and as air traffic levels return to normal, operations at Gold Coast Airport will return to standard practice, and training aircraft will again be restricted due to other operations.



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