

Ms Nadine O'Brien
345 Fantin Rd
Koah QLD 4881

By email: nadine_obrien@yahoo.com.au

Our ref: 0511-01

Dear Nadine

Re: Private airstrip at 343 Fantin Rd, Koah QLD

I write in relation to the recent approval by Mareeba Shire Council of an application for Material Change of Use – Air Services (Private Airstrip) on Lot 1, RP746336, situated at 343 Fantin Rd, Koah. The approval (with conditions) allows an increase from 52 to 365 flights per year from the airstrip.

I understand your property is Lot 201 on NR3170 which is located immediately to the south of the subject Lot, and your house is located approximately 250 m south of the southern end of the airstrip.

The advice contained herein is intended to address the issue of whether or not the flight paths described in the approval conditions and associated plans are appropriate measures for mitigating the effect of noise on neighbouring properties, including yours.

1.1. Information sources

The following information sources were referenced during the preparation of this advice:

- Airlservices Australia, *Aeronautical Information Package; including AIP Book, Departure and Approach Procedures, Designated Airspace Handbook, and En Route Supplement Australia*, dated 01 March 2018;
- Civil Aviation Safety Authority, *Civil Aviation Regulations 1998 (CAR)*, as amended;
- Civil Aviation Safety Authority, *Civil Aviation Safety Regulations 1998 (CASR)*, as amended;
- Civil Aviation Safety Authority, Civil Aviation Advisory Publication (CAAP) 92-1(1): *Guidelines for aeroplane landing areas*, dated July 1992;
- Civil Aviation Safety Authority, Civil Aviation Advisory Publication (CAAP) 166-01: *Operations in the vicinity of non-controlled aerodromes*, version v4.1, dated April 2017;
- Mareeba Shire Council, Decision Notice Approval, MCU/09/0050 dated 25 May 2010;
- Mareeba Shire Council, Decision Notice Approval, DA/17/0029 dated 21 March 2018;
- OzRunways, aeronautical navigation charts (WAC and ERC) extracts, dated 01 March 2018; and
- other references as noted.

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An aerial image of the site is provided at Figure 1 (source: Google Earth, QLD Globe).



Figure 1 Aerial image of site

An extract of SmartMap that shows the respective lots is provided at Figure 2 (source: QLD Globe).

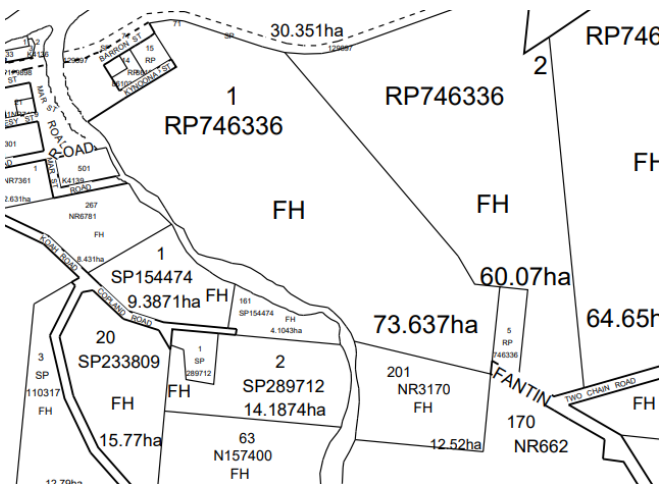


Figure 2 SmartMap extract

1.2. Decision Notice Approval, MCU/09/0050

The original approval granted in 2010 encloses Approved Plan/s of Development, specifically 'Flight Plan for Take Off to South (140°)' and 'Flight Plan for Take Off to North (320°)'. These plans specify circuits being conducted to the eastern side of the aerodrome, with the initial turn to be conducted upon achieving 400 ft (assumed to be above aerodrome elevation) at the departure end of the runway.

A copy of the plan applicable to take-off to the south is extracted at Figure 3.

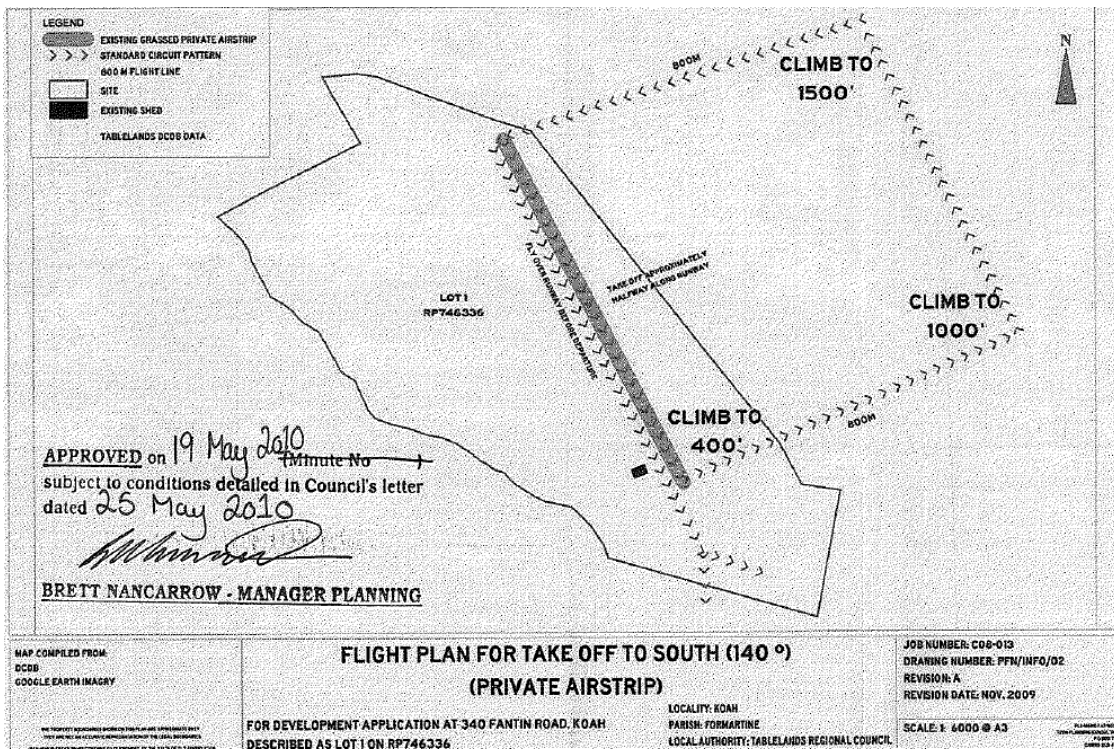


Figure 3 MCU/09/0050 Flight Plan for Take Off to South (140°)

1.3. Decision Notice Approval, DA/17/0029

The recent Decision Notice-Approval records a number of conditions. Conditions 3.7 and 3.8 are relevant:

3.7 Permitted Aircraft

Use of the airstrip is to be limited to Cessna 172, replica Spitfire Mk5MK5 and Glassair II aircraft, or other non-commercial aircraft with a similar impact approved by Council's delegated officer. This excludes the use of the airstrip by emergency flights, which are permitted to use whatever aircraft necessary.

3.8 Flight Paths

When safe to do so, any aircraft taking off in a southerly direction (where not involving a circuit), must turn to the east immediately after take-off, preferably following the Fantin Road road reserve in a south east direction in order to avoid flying over Lot 201 on NR3170.

Any circuit after take-off must be carried out to the east of the site.

The Decision Notice-Approval encloses at Attachment 1 - Approved Plans of Development, specifically 'Flight Plan for Take Off to South' and 'Flight Plan for Take Off to North'. These plans specify circuits being conducted to the eastern side of the aerodrome, with the initial turn to be conducted upon achieving 400 ft (assumed to be above aerodrome elevation) at the departure end of the runway.

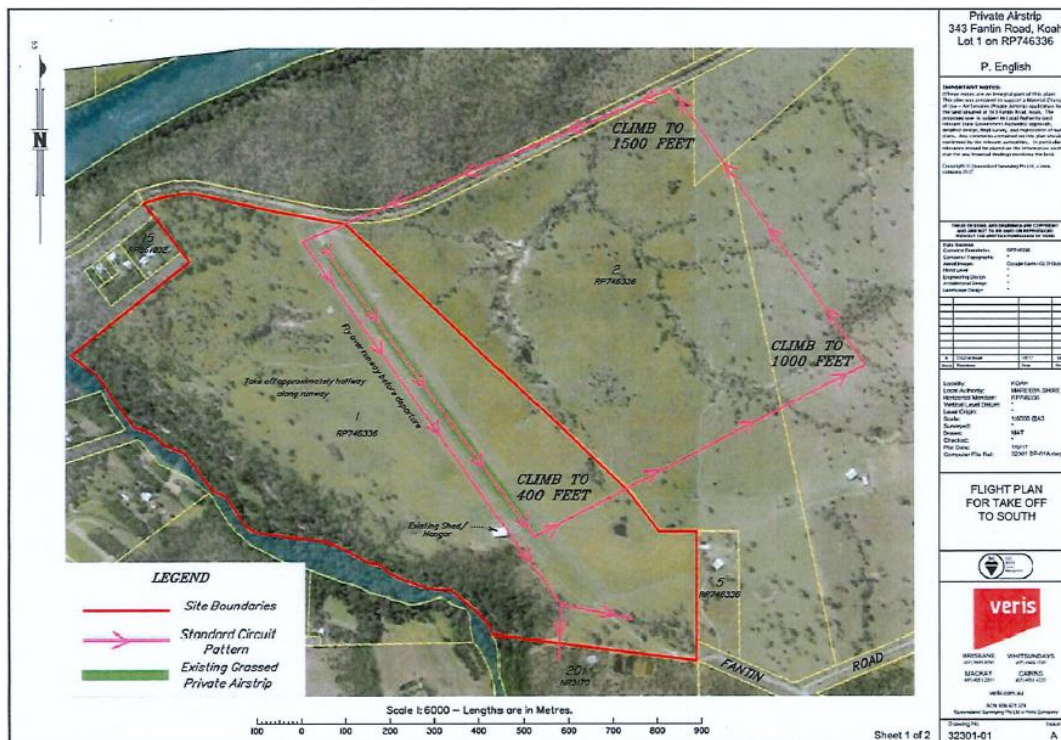


Figure 4 DA/17/0029 Flight Plan for Take Off to South

1.4. Civil Aviation Regulation 166A

Civil Aviation Regulation (CAR) 166A sets out general requirements for aircraft on the manoeuvring area or in the vicinity of a non-controlled aerodrome. Sub regulations (1), (2)(f) and (4) copied below are relevant to the circumstances.

(1) The pilot in command of an aircraft commits an offence if:

(a) the aircraft is being operated on the manoeuvring area of, or in the vicinity of, a non-controlled aerodrome; and

(b) the pilot engages in conduct; and

(c) the conduct results in the contravention of a rule set out in subregulation (2).

(2) The rules are the following:

...

(f) subject to subregulation (4), if the pilot takes off from the aerodrome, the pilot must maintain the same track from the take-off until the aircraft is 500 feet above the terrain;

...

(4) The rule in paragraph (2)(f) does not apply if a change to the track is necessary to avoid the terrain.

...

(6) An offence against subregulation (1) in relation to any of paragraphs (2)(a) to (g) is an offence of strict liability.

1.5. Aircraft operations at non-controlled aerodromes

Civil Aviation Advisory Publications (CAAP) provide guidance, interpretation and explanation on complying with the Civil Aviation Regulations 1988 (CAR) or Civil Aviation Orders (CAO). CAAP 166-1(4.1) – *Operations in the vicinity of non-controlled aerodromes* – provides guidance with respect to CAR 166. The purpose of this CAAP is to support Common Traffic Advisory Frequency (CTAF) procedures. It provides guidance on a code of conduct (good airmanship) to allow flexibility for pilots when flying at, or in the vicinity of, non-controlled aerodromes.

CAAP 166-1(4.1) provides the following guidance:

3.4 CASA [Civil Aviation Safety Authority] strongly recommends the use of 'standard' traffic circuit and radio broadcast procedures by radio-equipped aircraft at all non-controlled aerodromes. These procedures are described in the Aeronautical Information Publication (AIP) and Visual Flight Rules Guide (VFRG), and discussed in Section 6 of this CAAP (Standard traffic circuit procedures) and Section 7 (Radio broadcasts).

...

5.3.2 During initial climb-out, the turn on to crosswind should be appropriate to the performance of the aircraft but, in any case, not less than 500 ft above terrain so as to be at circuit height when turning downwind (refer paragraph 166A (2) (f) of CAR). Pilots may vary the size of the circuit depending on:

- the performance of the aircraft.
- AFM/Pilot's Operating Handbook requirements.
- company SOPs.
- other safety reasons.

...

6.4.1 Aircraft should depart the aerodrome circuit area by extending one of the standard circuit legs or climbing to depart overhead. However, the aircraft should not execute a turn to fly against the circuit direction unless the aircraft is well outside the circuit area and no traffic conflict exists. This will normally be at least 3 NM from the departure end of the runway, but may be less for aircraft with high climb performance. In all cases, the distance should be based on the pilot's awareness of traffic and the ability of the aircraft to climb above and clear of the circuit area.

The standard circuit consists of a series of flight paths known as legs when departing, arrival or when conducting circuit practice. Illustrations of the standard aerodrome traffic circuit procedures are provided in Figure 5 and Figure 6.

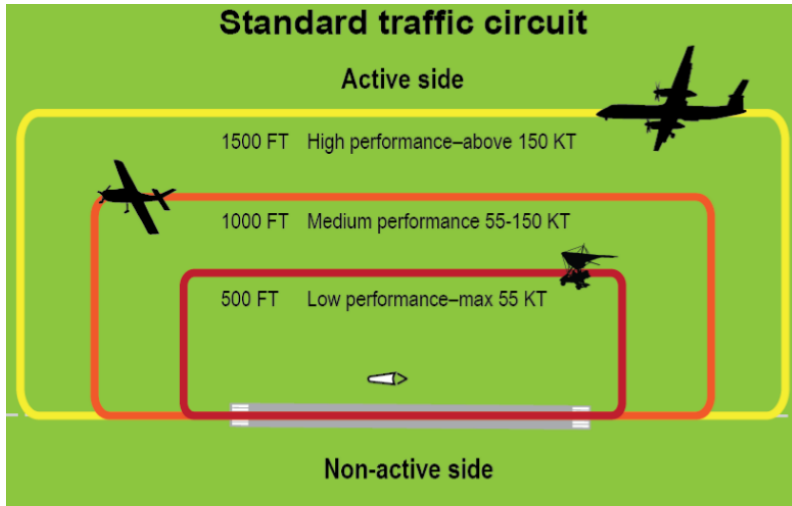


Figure 5 Lateral and vertical separation in the standard aerodrome traffic circuit

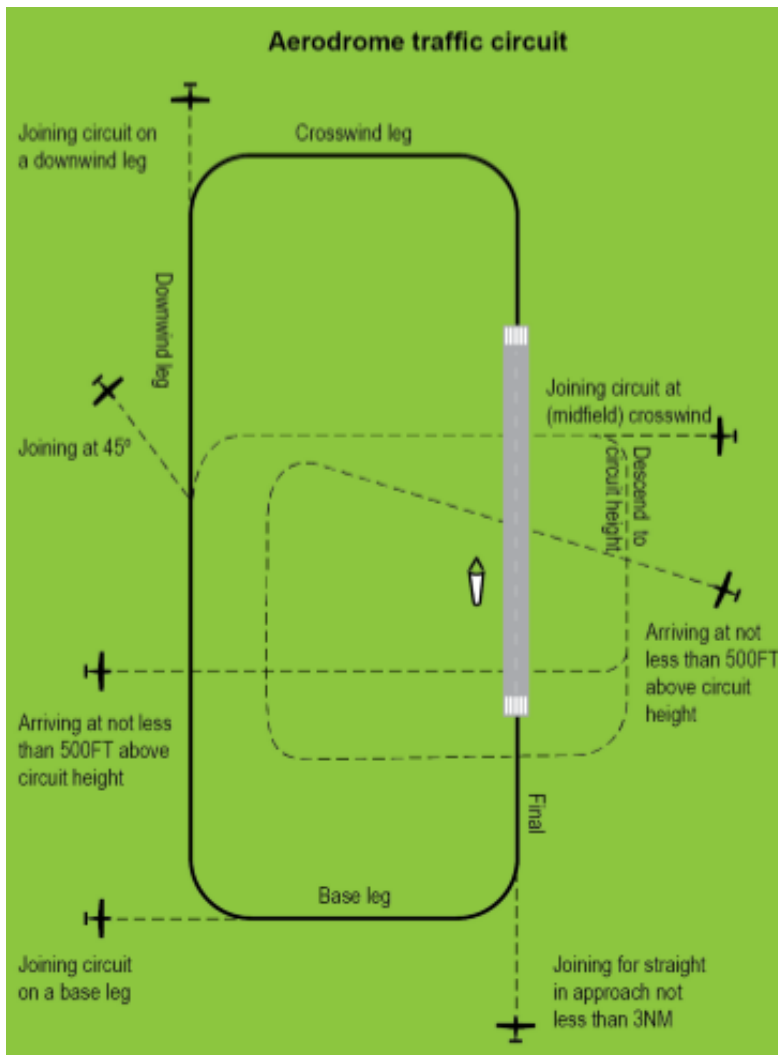


Figure 6 Aerodrome standard traffic circuit, showing arrival and joining procedures

1.6. Aircraft operations

The runway at the airstrip is approximately 930 m between what appear on Google Earth to be white markers indicating the extent of the prepared surface. The useable runway is likely to be less than this overall distance.

The amount of runway required for take-off can be affected by such considerations as the runway surface (e.g. dry or wet, length of grass), actual temperature, wind direction and strength, the weight of the aircraft (which can change for time to time according to the number of passengers or amount of baggage or other payload being carried), forward visibility and pilot handling.

The three different aircraft types permitted to operate at the airstrip have differing performance characteristics.

1.7. Summary

The flight paths shown in the respective MCU/09/0050 'Flight Plan for Take Off to South (140°)' and DA/17/0029 'Flight Plan for Take Off to South' drawings are problematic for the following reasons:

1. The flight paths force a pilot taking off to the south at the airstrip into non-compliance with a strict liability requirement of CAR 166A and the associated guidance provided in CAAP 166-1(4.1), in that they prescribe a turn at 400 ft (assumed to be above aerodrome elevation), rather than allowing the aircraft to maintain track until the aircraft is 500 feet above the terrain;
2. The permitted aircraft are not capable of instantaneously turning through approximately 90° as represented by the turns from upwind to crosswind, crosswind to downwind, downwind to crosswind and then crosswind to upwind, so **the flight paths as drawn are invalid**;
3. The flight paths do not represent a standard circuit as described in CAAP 166-1(4), which means that a pilot following those flight paths would be operating in a non-standard manner; and
4. Variations in the performance of the three permitted aircraft, and the inherent variation in the operation and performance of each aircraft during take-off and climb out resulting from a number of environmental, aircraft and pilot-related factors would prevent strict compliance with the approved flight paths, specifically the point at which the turn from upwind to crosswind occurs.

Because of the problems outlined above, there is significant uncertainty about the effectiveness of the flight paths as a means of preventing noise impact on neighbouring properties.

More importantly, the flight paths are not permitted by the Civil Aviation Regulations and should not inform a condition of approval.

If you wish to clarify or discuss the contents of this correspondence, please contact me on 0417 631 681.

Kind regards



Keith Tonkin

Managing Director

20 May 2018