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bega
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brisbane
suite 4, level 5
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unit 8, 27 yallourn st
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16 November 2018

Andrew Lissenden
Development Assessment Officer
Land Use Development, Network & Safety Southern
Level 4, 90 Crown Street
WOLLONGONG NSW 2500

via email: andrew.lissenden@rms.nsw.gov.au

Dear Andrew,

RE: DA2017.445 PROPOSED FLIGHT TRAINING SCHOOL 1070 PRINCES HIGHWAY, FROGS HOLLOW – YOUR REF: STH08/02093

We are writing in response to RMS correspondence dated 3 July 2018 requesting details about flight paths over the Princes Highway, Frogs Hollow. It is understood this request is in response to questions posed by Bega Valley Shire Council officers to the RMS during the notification of the subject development application.

The RMS correspondence requests the following information:

- Details on the maximum number of flights (for each stage of the development that will result in crossing of the Princes Highway,
- Details on what the minimum heights will be at each crossing point of the Princes Highway, and
- Details on what measures will be put in place to ensure flights that cross the Princes Hwy (e.g. under 500ft) do not result in a distraction to drivers.

This document outlines the manner in which the crossing of the Princes Highway would occur in relation to the proposed flight training activities at Frogs Hollow. It is understood from correspondence of 3 July 2018 that the RMS considers the potential for driver distraction may occur where an aircraft crosses the highway at a height of less than 500 ft. In this regard, an outline of the indicative number of flights at the proposed site is also provided for RMS guidance as well as the potential for driver distraction by aircraft flying at less than 500 ft is also considered herein.

We trust that the information provided assists RMS in the finalisation of its assessment of the subject development application.

Yours sincerely,
NGH Environmental

Stephanie Anderson
Town Planner
Ph 6923 1538

FLIGHT PATH DETAILS

Runway 18/36 is referred to as the primary runway and Runway 09/27 is referred to as the secondary runway. Physically, there are two runways, however the runways at Frogs Hollow airfield can be utilised in both directions, meaning a total of four options exist for the use of these runways.

Long term average wind records have been analysed to provide details about the likely runway selections. Wind rose data is summarised below for the Bega Newton Road AWS (approximately 8 km north of the subject site). The wind roses were developed based on BOM records from 1965 to 1994.

Long term average wind direction and resulting runway selection									
	N	***NE***	***E***	***SE***	***S***	***SW***	***W***	***NW***	***Calm***
9am	1.5%	9.8%	1.7%	3.8%	5.2%	16.4%	1.9%	0.7%	59.1%
3pm	1.8%	29.3%	9.3%	12.5%	8.0%	15.6%	3.0%	1.5%	19.1%
Runway	Primary	Primary	Secondary	Primary	Primary	Primary	Secondary	Primary	Primary
	RW 36	RW 36	RW 09	RW 18	RW 18	RW 18	RW 27	RW 36	RW 36

Runway use by proportion based on long-term average wind direction			
	9am	***3pm***	***Total***
RW 36	71.1 %	51.7 %	61.4 %
RW 18	25.4 %	36.1 %	30.8 %
RW 27	1.9 %	3.0 %	2.0 %
RW 09	1.7 %	9.3 %	5.5 %

Note: may not add to 100 percent due to rounding of figures

Runway 36 – Priority Runway

Should the prevailing weather conditions permit, Runway 36 (take-off in a northerly direction) would be the priority runway. The three other runways (09, 18, 27) would only be used when the prevailing conditions dictate this.

Long term average wind records have been analysed to provide details about the likely runway selections. The analysis of the wind roses determines that Runway 36 would be suitable to use, on average, 61 percent of the time. ***The use of Runway 36 and use of Circuit 36 would not result in the crossing of the Princes Highway.***

Runway 18

The use of Circuit 18 would result in the crossing of the highway at Point A (Attachment 1) near to the turn downwind. The turn is conducted after the aircraft reaches a height of at least 1,000 ft along the crosswind leg, therefore the aircraft would be flying at approximately 1,000 ft at Point A.

The use of Circuit 18 would also result in the crossing of the highway at Point B, near the turn to final leg/approach. The aircraft maintains a height of 500 feet when completing the turn to final leg. Therefore, the aircraft should be flying at approximately 650-700 ft when crossing the highway at Point B.

The analysis of the wind roses indicates that Runway 18 would be suitable to use, on average, 30 percent of the time.

Runway 09

The use of Circuit 09 would result in the crossing of the highway on the upwind leg, as the aircraft ascends towards the turn crosswind. The turn to crosswind is commenced when the aircraft reaches a height of 500ft, therefore the aircraft would be approximately at 500ft when crossing the highway at Point C.

The use of Circuit 09 would also result in the crossing of the highway at Point D, approximately half way along the downwind leg. At this point, the aircraft is maintaining a height of not less than 1,000 feet for the full downwind leg.

The analysis of the wind roses suggests that Runway 09 would be suitable to use, on average, 5 percent of the time.

Runway 27

The use of Circuit 27 would result in the crossing of the highway at Point E at the end of the downwind leg, at the turn to base leg. The aircraft would be maintaining a height of 1,000 ft at this point.

The use of Circuit 27 would also result in the crossing of the highway at Point F. The aircraft maintains a height of 500 feet when completing the turn to final leg, therefore the aircraft would be approximately 500 ft.

The analysis of the wind roses suggests that Runway 27 would be suitable to use, on average, 2 percent of the time.

Summary

There are six points where aircraft may cross the highway during circuit training. Of these, two points (D, E) are on the downwind leg, where the aircraft would maintain a steady height of 1,000 ft. One point (B) is located on the base leg where the aircraft is descending from 1,000 ft but maintains a height above 500 ft. Conversely, at Point A, the aircraft would be on the crosswind leg ascending to 1,000 ft and maintains a height above 500 ft.

The two remaining points (C, F) are where the aircraft would cross at a height of approximately 500 ft.

Points C and F are associated with the use of Circuits 09 and 27, which together, would only be used 7 percent of the time, on average. Further details are outlined in the following section.

FLIGHT FREQUENCY DETAILS

As indicated in the information supporting the development application, it is proposed that the facility would be established over nine progressive stages. Accordingly, the intended flight training would commence with a low level of activity. This would progress incrementally.

The following details are noted in relation to flight training at the proposed facility:

- Flight training would only be conducted between mid-February and mid-December,
- Flight training would only be conducted Monday to Friday, with limited remedial training on a Saturday,
- Flight training would only be conducted during daylight hours,
- Flight training is only proposed on 15 suitable weather business days of the training month,

The indicative number of circuits to be conducted at Frogs Hollow per day of flight training is as follows:

Indicative number of flights at Frogs Hollow			
Stage	*Indicative movements at Frogs Hollow per training day (15 training days)*	*Movements that cross the hwy (use of RW 09, 18, 27 equals 38.3% of movements)*	*Movements that cross the hwy around 500 ft (Point C and F, equals 3.8% of movements)*
Stage 1	192 movements	74 movements	7 movements
Stage 2	288 movements	110 movements	11 movements
Stage 3	384 movements	147 movements	15 movements
Stage 4	210 movements	80 movements	8 movements
Stage 5	252 movements	97 movements	10 movements
Stage 6	294 movements	113 movements	11 movements
Stage 7	306 movements	117 movements	12 movements
Stage 8	346 movements	133 movements	13 movements
Stage 9	384 movements	147 movements	15 movements

Note: take-off plus landing equates to two movements

POTENTIAL FOR DRIVER DISTRACTION

An analysis of other regional airports identified that many of these are within proximity to major highways and the highway overflown by aircraft. The analysis specifically identified the following:

- Bathurst Airport (the Greater Western Hwy is 700 metres from the end of the primary runway),
- Wagga Wagga Airport (the Sturt Hwy is 700 metres from the end of the primary runway),
- Tamworth Regional Airport (the primary runway is within 200 metres parallel to the Oxley Hwy),
- Dubbo City Regional Airport (the Mitchell Hwy is 200 metres from the end of the primary runway),
- Albury Airport (the Hume Hwy is 1,100 metres from the end of the primary runway),
- Lismore Airport (the Bruxner Hwy is 300 metres from the end of the primary runway),

Given that airports must be accessible by a range of users and at various times of the day, evening and night, it would make sense that airports are accessed from higher-order roads such as highways, or arterial roads that serve highways, and not from local roads.

It is also noted that most of the highways identified above serve considerably higher traffic volumes than the Princes Highway does in the vicinity of Frogs Hollow.

Notwithstanding the above, it is considered that the potential for driver distraction at Frogs Hollow, specifically, is considered to be low. Based on the 500 ft threshold identified as RMS' concern, the potential for distraction would occur in connection with an ascending movement after take-off on Runway 09 and a descending movement with landing on Runway 27. Based on an analysis of long-term average wind roses, these runways are predicated to be used only 7.5 percent of the time, on average. Further, overflying of the highway at Point C and Point F specifically would only occur in connection with 3.8 percent of total movements, on average.

It is noted that the majority of aircraft movements would occur on Runway 36, which does not interact with the Princes Highway.

Should RMS still have concerns about overflying the Princes Highway at Frogs Hollow, signage identifying aircraft to be in the area may be a suitable advisory measure. It is understood that such signage is installed on other similar main roads where overflying may occur. The proponent has confirmed a commitment to erect this signage as part of the intersection treatment works relevant to the project, should RMS require this. Final details and arrangements could be provided to RMS satisfaction as part of the Works Access Deed (WAD) process.

ATTACHMENT 1

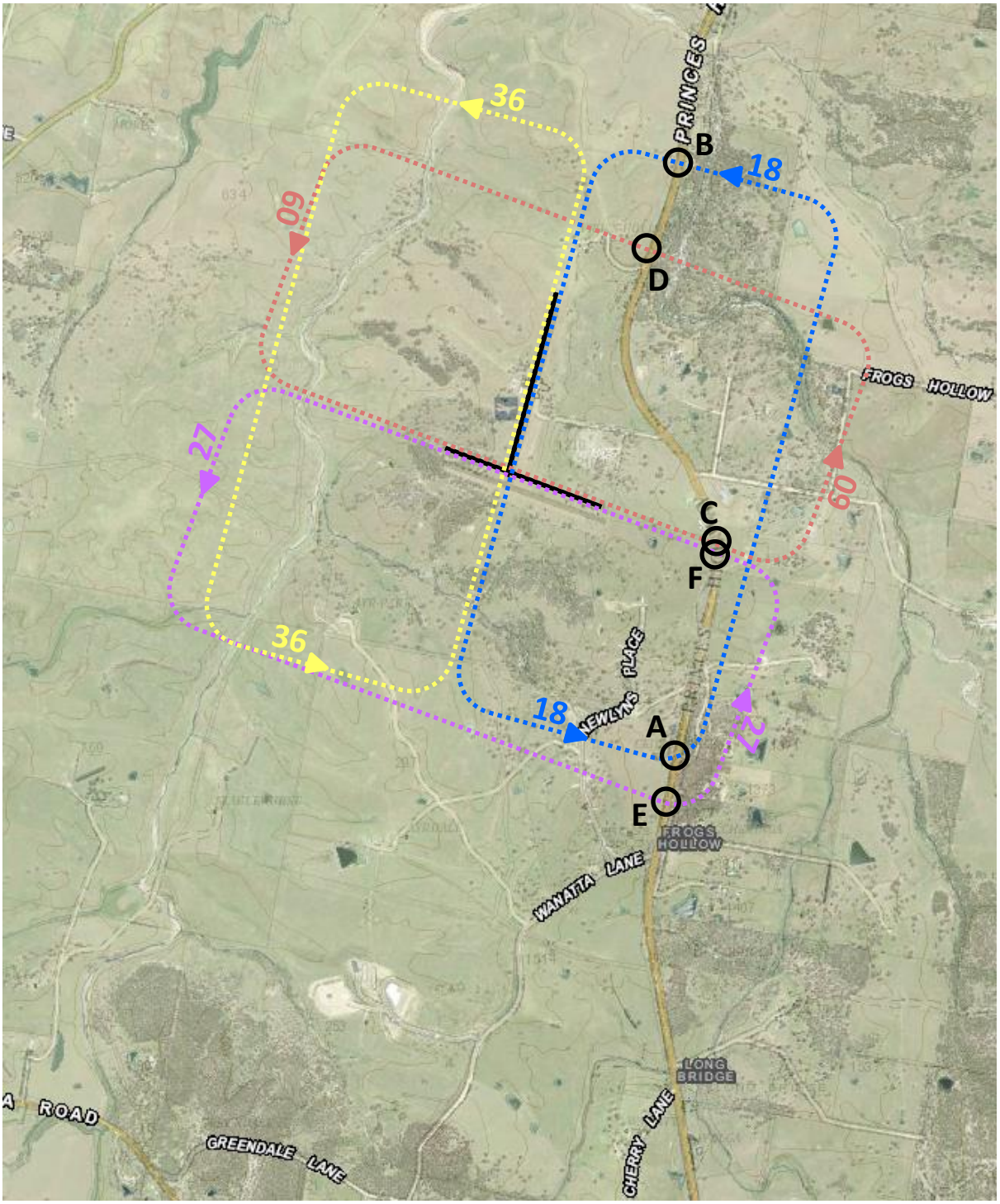

Figure 1 Circuit profiles and overflying points